WEST VIRGINIA

SECRETARY OF STATE

KEN HECHLER

ADMINISTRATIVE LAW DIVISION

FORM #3

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OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE
AND
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

CITE AUTHORITY: W.Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X , NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 34

TITLE OF RLE BEING AMENDED: "Emissions Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ____

TITLE OF RULE BEING PROPOSED: ____

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

John M. Johnson

Authorized Signature

$6.20 w/out fed. reg's
$50.80 w/fed. reg's

CECIL H. UNDERWOOD
GOVERNOR

BUREAU OF ENVIRONMENT
10 McJunkin Road
Nitro, WV 25143-2506

MICHAEL P. MIANO
COMMISSIONER

July 24, 1998

Ms. Judy Cooper
Director
Administrative Law Division
Capitol Complex
Charleston, WV 25305

RE: 45CSR34 - "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

Dear Ms. Cooper:

This is to advise that I am giving approval to file the above-referenced rule with your Office and Legislative Rule-Making as an agency-approved rule.

Your cooperation in this regard is very much appreciated. If you have any questions or require additional information, please feel free to contact Carrie Chambers in my Office at 759-0515.

Sincerely yours,

Michael P. Miano
Commissioner

MPM:cc

Attachment

cc: Carrie Chambers
Karen Watson, OAQ

Questionnaire

DATE: July 31, 1998

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (AGENCY NAME, ADDRESS & PHONE NUMBER) Division of Environmental Protection
Office of Air Quality
1558 Washington Street, East
Charleston, WV 25311-2599
Phone: 304-558-4022

LEGISLATIVE RULE TITLE: 45CSR34 "Emissions Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

1. Authorizing statute (s) citation: W.Va. Code §§22-5-1 et seq.

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:
June 16, 1998

b. What other notice, including advertising, did you give of the hearing?

I. Class I legal advertisement, Charleston Daily Mail and Charleston Gazette
II. Sent a copy of the Public Notice to our agency mailing list.
III. DEP's 'Public Notice Bulletin' and DEP's 'In Depth' (July's issues)
IV. Public Notice placed on agency's Web site:
http://wvnvm.wvnet.edu/~Jmorgan/index.htm

c. Date of Public Hearing (s) or Public Comment Period ended:

July 21, 1998

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.
Attached_____ No comments received____X____

e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (Be exact)

July 31, 1998

f. Name, title, address and phone/fax/e-mail numbers of agency person(s) to receive all written correspondence regarding this rule: (Please type)

John H. Johnston, Chief
1558 Washington Street, East
Charleston, WV 25311-2599
Phone: 304-558-4022
Fax: 304-558-3287
E-Mail: internet:"jjohnston@mail.dep.state.wv.us"

g. **IF DIFFERENT from item 'f',** please give Name, title, address and phone number (s) of agency person (s) who wrote and/or has responsibility for the contents of this rule: (Please type)

See 'f' above

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

N/A

b. Date of hearing or comment period:

N/A

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

N/A

d. Attach findings and determinations and reasons:

Attached N/A

BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION

BRIEFING DOCUMENT

Rule Title: 45CSR34 - "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

A. AUTHORITY: W.Va. Code §§22-5-1 et seq.

B. SUMMARY OF RULE:

The current version of 45CSR34 provides authority for the Director to determine and enforce case-by-case MACT standards for major hazardous air pollutant sources in the absence of a federal standard under certain circumstances as required for permit program approval under Title V of the Clean Air Act.

The rule also establishes general provisions for emission standards for hazardous air pollutants (NESHAPs) and other regulatory requirements pursuant to section 112 of the federal Clean Air Act (CAA). The rule codifies general procedures and criteria to implement emission standards for stationary sources that emit (or have the potential to emit) one or more of the hazardous air pollutants (HAP) in or pursuant to section 112(b) of the CAA. This revised rule incorporates by reference additional provisions relating to petroleum refineries, organic hazardous air pollutants from the synthetic organic chemical manufacturing industry, halogenated solvent cleaning, Group I and Group IV polymers and resins, pulp and paper production, aerospace manufacturing and rework facilities, secondary lead smelting, ethylene oxide commercial sterilization and fumigation operations, primary aluminum reduction plants, and wood furniture manufacturing operations.

C. STATEMENT OF CIRCUMSTANCES WHICH REQUIRE RULE:

This rule, in conjunction with existing rule 45CSR15, establishes general provisions for emission standards for hazardous air pollutants and other regulatory requirements promulgated by USEPA as of June 1, 1998, pursuant to section 112 of the federal Clean Air Act, as amended. This rule codifies general procedures and emission standards for certain stationary sources that emit (or have the potential to emit) one or more of the substances listed as hazardous air pollutants in section 112(b) of the Clean Air Act, as amended. 45CSR34 incorporates hazardous air pollutant standards codified by USEPA under 40 CFR Part 63 whereas the earlier existing rule for hazardous air pollutants, 45CSR15, primarily incorporates hazardous air pollutant standards promulgated by USEPA under 40 CFR Part

61 prior to amendment of the Clean Air Act. The Director intends to incorporate the additional federal counterpart rules by reference. Promulgation of this rule by the Legislature is necessary for the State to fulfill its responsibilities under the Clean Air Act, as amended.

D. FEDERAL COUNTERPART REGULATIONS - INCORPORATION BY REFERENCE/DETERMINATION OF STRINGENCY:

A federal counterpart to this proposed rule exists. In accordance with the Director's recommendation, and with limited exception, the Office of Air Quality proposes that the rule incorporate by reference the federal counterparts.

Because the proposed rule incorporates by reference the federal counterpart, no determination of stringency is required.

E. CONSTITUTIONAL TAKINGS DETERMINATION:

In accordance with §22-1A-1 and 3(c,) the Director has determined that this rule will not result in taking of private property within the meaning of the Constitutions of West Virginia and the United States of America.

F. CONSULTATION WITH THE ENVIRONMENTAL PROTECTION ADVISORY COUNCIL:

At their July 22, 1998 meeting, the Environmental Protection Advisory Council reviewed and discussed this rule - there were no substantive changes as a result of their discussion. However, the Council did recommend that a clarification be made to Section 4.1.b. of the rule. (See attached minutes of that meeting). Since the Council's recommendation occurred after the close of the public comment period, the Office of Air Quality will submit a proposed rule revision comporting with the Council's recommendation to the Legislative Rule-Making Review Committee for its consideration after filing the agency-approved rule with the Committee.

MINUTES

DIVISION OF ENVIRONMENTAL PROTECTION ADVISORY COUNCIL

July 22, 1998, DIRECTOR'S CONFERENCE ROOM, NITRO HEADQUARTERS

The eleventh meeting of the DEP Advisory Council was held Wednesday, July 22, 1998, in the Director's Conference Room, Nitro Headquarters' Offices. The meeting was called to order at 1:00 p.m. by Chairman Mike Miano.

ATTENDING:

Advisory Council Members:

Michael P. Miano, Chairman
Jacqueline Hallinan
Larry Harris
William Raney
Rick Roberts
William Samples

Environmental Protection:

John Ailes	Jennifer Pauer
John Benedict	Pete Pitsenbarger
Dick Cooke	Ken Politan
Mike Dorsey	Cap Smith
Andy Gallagher	Barb Taylor
Randy Huffman	Karen Watson
Pat Park	Mike Zeto

1) **Introduction of A. V. Gallagher, DEP's Chief Communications Officer.**

Chairman Miano introduced DEP's new Chief Communications Officer, A. V. Gallagher. Council Members welcomed Mr. Gallagher and wished him well in his new job.

2) **Review and Approval of Minutes of April 30, 1998.**

The minutes of the April 30 meeting were approved with the correction of two typos. Mr. Roberts brought to everyone's attention the discussion in the April 30 minutes of AML funding issues in the last meeting, and the Council's desire to send letters to West Virginia's Congressional delegation to identify West Virginia's share of the AML funds that need to be

released by the US Congress. Separate letters would go to West Virginia's legislative leadership informing them of the problems created by not having the AML funds available, with a copy of the letters sent to the Congressional delegation attached to them.

Randy Huffman asked if the Council members would like to sign each letter individually. They each expressed their desire to do so. Pat Park, AML, distributed a copy of the draft letters to Council for their review. After several minutes of discussion, it was decided the draft letters would be edited and made available to the Council members for their signature before the end of the meeting.

Mr. Miano said that Pete Pitsenbarger would like a few minutes of the Council's time before they continued with the agenda.

Mr. Pitsenbarger informed the Council of his retirement plans for the end of August. He said he would like to express his heartfelt thanks to the Council for their letter of appreciation they had sent him thanking him for his many years of service to the State of West Virginia. Mr. Pitsenbarger said his years in state government had been a wonderful opportunity, and he will miss both the work and the people.

3) **Review of Proposed DEP Rules in Accordance with WV Code §22-1-3(c).**

Mr. Miano asked if there were any other issues to be discussed before continuing with the Agenda and the review of DEP proposed rules for the 1999 session.

Mr. Roberts said he would like to express his concern with the approach DEP has taken in involving the Council members in the rulemaking process -- not only this year, but in the past. He said the rules are not sent to the Council members until the last minute and they are not given adequate time to review and comment on them.

It was pointed out that the law [22-1-1(c)] specifically requires the Council to be consulted prior to the proposal of any new rule.

Mr. Raney said he would like to go on record wholeheartedly in agreement with the concerns of Mr. Roberts. He said he has great concerns with giving advice or recommendations to the Director on development of rules (or amendments to rules) the Council members were not involved in before they were filed with the Secretary of State's Office for Public Hearing and Comments. He said he believes there definitely needs to be improvement in this process in the future.

A discussion was then held on possible ways to bring the Council into the rulemaking process in an earlier stage of rule development. Several DEP staff members expressed their frustrations with the rulemaking process, and gave one example as the short period of time between the signature of bills by the Governor and the early filing date of the rules with the

Legislative Rulemaking Review Committee. Another example that was given was turnaround time with federal agencies, i.e., EPA and OSM, which are also involved in the process.

After several minutes of discussion, Mr. Huffman stated, with the Chairman's approval, that he would put together a committee to discuss the Council's concerns and get back to the Council with their recommendations by the first of September.

Mr. Miano also expressed his desire to improve the involvement of the Council in the rulemaking process, and assured the Council that everything possible would be done in the future to comply with the Council's recommendations.

[It should be noted that at this time Ms. Hallinan left the Advisory Council Meeting because of a previously-scheduled commitment].

Continuing with the agenda, Mr. Miano said that staff would be available from each program office to give a brief description of the proposed new rules or rule amendments and to answer any questions the Council members might have. If a question should come up that couldn't be answered during the meeting, we would make note of it and get back with an answer to the Council as soon as possible. The first rule on the agenda is 60CSR4, filed under the Director's Office.

60CSR4 -"AWARDING OF WEST VIRGINIA STREAM PARTNERS PROGRAM GRANTS RULE"

Jennifer Pauer, AML, said 60CSR4 is a new rule that is being proposed by the West Virginia Stream Partners Program to provide requirements and guidance concerning the awarding of grants to broad-based community organizations for watershed improvement projects. Ms. Pauer stated that the program is a joint effort of DEP, Forestry, Natural Resources, and the West Virginia Soil Conservation Agency.

A brief discussion was held concerning the source of the funding, availability of the funds, guidelines for criteria, and possible additional funding. Mr. Samples asked if there could also be additional funding sources, for example contributions from supplemental environmental projects used to offset proposed penalties. Ms. Pauer stated that as the rule now stands, it's only purpose is to distribute the funds, but she would check into the law and let the Council know if language could be added to also implement provisions for additional funding from penalty collections or other sources. Mr. Raney moved to recommend to the Chairman (in his capacity as Director of DEP) the filing of 60CSR4 with the condition that Mr. Samples' recommendation be considered. The motion was seconded and passed unanimously.

The following Air Quality rules were discussed by Karen Watson, OAQ, with assistance from John Benedict, also from the OAQ office:

45CSR33 - "ACID RAIN PROVISIONS AND PERMITS"

45CSR25 - "TO PREVENT AND CONTROL AIR POLLUTION FROM HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES"

45CSR34 - "EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS PURSUANT TO 40 CFR PART 63"

45CSR16 - "STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES PURSUANT TO 40 CFR PART 60"

45CSR24 - "TO PREVENT AND CONTROL EMISSIONS FROM HOSPITAL/MEDICAL/ INFECTIOUS WASTE INCINERATORS"

45CSR36 - "CONFORMITY TO STATE OR FEDERAL IMPLEMENTATION PLANS OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS DEVELOPED, FUNDED OR APPROVED UNDER TITLE 23 U.S.C. TO THE FEDERAL TRANSIT LAWS, TO APPLICABLE AIR QUALITY IMPLEMENTATION PLANS (TRANSPORTATION CONFORMITY)"

45CSR8 - "AMBIENT AIR QUALITY STANDARDS FOR SULFUR OXIDES AND PARTICULATE MATTER"

45CSR9 - " RULES PERTAINING TO AMBIENT AIR QUALITY STANDARDS FOR CARBON MONOXIDE AND OZONE"

Ms. Watson gave the Council a brief explanation of the proposed OAQ rules. She explained that seven rules (45CSR33, 25, 34, 16, 36, 8, and 9) were being amended to conform to federal regulations, and 45CSR24 is a proposed new rule to adopt federal New Source Performance Standards for new and existing hospital/medical/infectious waste incinerators. This rule also incorporates by reference the federal standards, with limited exception.

Mr. Raney said he had always questioned the validity of the Appendix B Fiscal Note that is attached to each rule that is filed; in particular the section that relates to the effect of the proposed rule which usually contains all zeros.

John Benedict explained that is a question that has come up several times in the past, and the agency has always taken the position that the numbers are reflective of the cost to the state of implementing the new rule or the proposed amendments to an existing rule.

After a brief question and answer session of the OAQ rules, Mr. Raney moved that recommendation be made to the Director that all eight (8) rules be filed, as proposed, with the exception that 45CSR34, subdivision 4.1.b, be revised to clarify that 45CSR30 includes certain requirements relating to Section 112(r) of the Clean Air Act. The motion was seconded and passed unanimously by the Council.

38CSR2 - "SURFACE MINING AND RECLAMATION RULE"

John Ailes, Chief of OMR, said the amendments to this year's submission of the Surface Mining and Reclamation rule were few in number. Two new definitions were added,

"mountaintop mining operation" and "area mining operation," and only minor cleanup to correct typographical errors and update and clarify other sections within the rule. Mr. Raney moved recommendation be made to the Chairman that the rule be filed as proposed. The motion was seconded and passed unanimously by the Council.

Mike Dorsey and Dick Cooke from the Office of Waste Management described the following Waste Management rules:

33CSR20 - "HAZARDOUS WASTE MANAGEMENT RULE"

33CSR1 - "SOLID WASTE MANAGEMENT RULE"

33CSR2 - "SEWAGE SLUDGE MANAGEMENT RULE"

Mike Dorsey explained the amendments to 33CSR20 - Hazardous Waste Management Rule. Along with other federally-required amendments to this rule, Section 11 contains a major rewrite to conform with the federal requirements of 40 CFR Part 124.

Mr. Samples asked why it takes up to 120 days to receive approval from the state to exclude a waste at a particular generating facility when EPA has already approved the petition - could the time be changed from 120 days to 60 days?

Cap Smith, Chief, OWM, said the time of 60 to 120 days is just a general number. He stated that he didn't see a problem with changing the time from 120 days to 60 days. He said it rarely takes anywhere close to that time to approve or deny the petition - it is usually taken care of in a matter of days.

There was some discussion as to whether this amendment should be proposed in this legislative session. The Council decided to wait until the rule is modified and filed in the 2000 Legislative Session to propose the amendment.

Dick Cooke, OWM, briefed the Council on 33CSR1. He said the revision is necessary to ensure consistency between the WV Code and 33CSR1. The emergency rule will establish criteria in determining a commercial solid waste facility's monthly tonnage limits, as required by Chapter 22, Article 15, as amended by Senate Bill No. 178.

Mike Zeto, Environmental Enforcement Office, then discussed 33CSR2 and explained the proposed emergency rule is necessary to update the Sewage Sludge Management rule to comply with mandates of Senate Bill 178. The revisions and inclusions are necessary to ensure consistency between the WV Code and 33CSR2. The emergency rule will also impose new requirements relating to the management of sewage sludge as required by Chapter 22, Article 15, as amended by Senate Bill 178, specifically as it relates to the control of off-site odors, and the protection of waters of the state.

After discussion was completed on the Waste Management rules, Mr. Raney moved to recommend that the Chairman file the Waste rules as proposed. The motion was seconded and passed unanimously.

The following Office of Water Resources rules were reviewed by Barb Taylor and Ken Politan.

47CSR31 - " STATE WATER POLLUTION CONTROL REVOLVING FUND"

47CSR33 - "STATE CONSTRUCTION GRANTS PROGRAM RULE"

47CSR3 - " POLLUTION PREVENTION AND COMPLIANCE ASSISTANCE"

47CSR4 - "STATE CERTIFICATION OF ACTIVITIES REQUIRING NATIONWIDE PERMITS NO. 21 AND NO. 26"

Barb Taylor, Chief, OWR, explained the amendments contained in 47CSR31, 33, and 3. She said 47CSR31 is being amended to comply with the latest revisions of the Clean Water Act and current design practices; 47CSR33 is a proposed new rule which allows DEP to make grants to communities to provide adequate wastewater collection and/or treatment services; and 47CSR3 is a new proposed rule to implement the provisions of HB 4693 passed during the 1998 Session to promote pollution prevention by encouraging reduction or elimination of pollutants at the source through process modification, material substitution, in-process recycling, reduction of raw material use or other source reduction opportunities.

Mr. Roberts asked if the proposed amendments to prohibit the use of closed-vessel ultraviolet disinfection and inverted siphons in "Appendix B" under "Design Standards for Collection Systems and Treatment Works" is one recommended by EPA or by the state.

Ms. Taylor replied that she would need to check with Bob Coontz in Water Resources' Construction Assistance Office who drafted the proposed rule amendments, and have Mr. Coontz get back with Mr. Roberts with an answer as soon as possible.

The last rule to be addressed by the Council, 47CSR4, was reviewed by Ken Politan from the Office of Mining and Reclamation. Ken stated that this is a new proposed rule that will establish a water certification program for surface mining operations and will implement the provisions of SB 145 passed during the 1998 Session.

Mr. Raney asked if implementation of this rule was specifically mandated in SB 145.

Mr. Politan said no, but the agency felt the proposed rule is needed to give some guidance in the implementation of the Senate bill.

Mr. Raney voiced his concern over the rule. He said he did not believe it was a workable

rule, and he had received several comments from others indicating the same concerns. He said that one of his biggest objections to the proposed rule was lack of input from outside DEP when the rule was written. Mr. Raney stated that SB 145 indicates the Director shall confer with representatives of the surface coal mining industry and representatives of environmental organizations who have an interest in water quality, before such a manual is developed and DEP staff did not do this.

After several minutes of discussion concerning 47CSR4, Mr. Raney made a motion to recommend that the Chairman file 47CSR3, 31, and 33 as proposed, with the condition that Mr. Roberts' questions are addressed in 47CSR31; that the comment period be extended after the end of the public hearing for 47CSR4, and any actions to implement the proposed rule be delayed until such time as a more workable rule can be drafted with the opportunity for input from interested parties. The motion was seconded and passed with a 3 to 1 vote.

Due to the length of time taken to review the proposed rules, there was no open discussion by the Council members. The meeting was adjourned at 5:15 p.m.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: 45CSR34 "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

Type of Rule: _X_ Legislative _____ Interpretive _____ Procedural

Agency: Office of Air Quality

Address: 1558 Washington Street, East

Charleston, WV 25311-2599

1. Effect of Proposed Rule	Annual		Fiscal Year		
Estimated Total Cost	Increase	Decrease	Current	Next	There-after
	$ 0	$ 0	$ 0	$ 0	$ 0
Personal Services	0	0	0	0	0
Current Expense	0	0	0	0	0
Repairs and Alterations	0	0	0	0	0
Equipment	0	0	0	0	0
Other	0	0	0	0	0

2. Explanation of above estimates: Costs anticipated to be incurred in the implementation of federal rules promulgated under 40 CFR Part 63 as of June 1, 1998 will be covered under prior budget estimates for implementing Title V of the Clean Air Act, as amended, under 45CSR30 authorized by the Legislature during the 1994 session and approved (interim approval) by the U.S. Environmental Protection Agency by Final Rule issued on November 16. 1995.

3. Objectives of these rules: This rule establishes general provisions for emission standards for hazardous air pollutants and other regulatory requirements pursuant to section 112 of the Clean Air Act, as amended. Promulgation of this rule by the Legislature is necessary for the State to fulfill its responsibilities under the Clean Air Act, as amended.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

See Section 2.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of Citizens.

No impact above that resulting from the currently applicable federal standards.

C. Economic Impact on Citizens/Public at Large.

No impact above that resulting from the currently applicable federal standards.

Date: July 11, 2011

Signature of Agency Head or Authorized Representative

John T. Hood

WEST VIRGINIA

SECRETARY OF STATE

KEN HECHLER

ADMINISTRATIVE LAW DIVISION

FORM #1

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'98 JUN 16 AM 10 36

OFFICE OF THE SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 34

TITLE OF RULE BEING AMENDED: "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

RECEIVED

JUN 16 1998

Legislative Rule Making Review Committee

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Streeet East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
Office Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

ATTACH A BRIEF SUMMARY OF YOUR PROPOSAL

CECIL H. UNDERWOOD
GOVERNOR

BUREAU OF ENVIRONMENT
10 McJunkin Road
Nitro, WV 25143-2506

Michael P. Miano
COMMISSIONER

June 15, 1998

Ms. Judy Cooper
Director, Administrative Law Division
Office of the Secretary of State
Capitol Complex
Charleston, West Virginia 25305

RE: 45CSR34 - "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

Dear Ms. Cooper:

This is to advise that I am giving approval to file the above-referenced rule with your office as notice of public hearing/comment period.

Your cooperation in this regard is very much appreciated. If you have any questions or require additional information, please contact Carrie Chambers in my office at 759-0515.

Sincerely yours,

Michael P. Miano
Commissioner

MPM:cc

cc: Carrie Chambers
Karen Watson, OAQ

FILED

Jul 31 4 05 PM '98

OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

TITLE 45
LEGISLATIVE RULE
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

SERIES 34
EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS PURSUANT TO 40 CAR PART 63

§45-34-1. General.

1.1. Scope. - This rule establishes general provisions for national emission standards for hazardous air pollutants (NESHAPS) and other regulatory requirements pursuant to section 112 of the federal Clean Air Act as amended in 1990 (CAA). This rule codifies general procedures and criteria to implement emission standards for stationary sources that emit (or have the potential to emit) one or more of the substances listed as hazardous air pollutants (HAP) in or pursuant to section 112(b) of the CAA. It is the intent of the Director to adopt these standards by reference. It is also the intent of the Director to adopt associated reference methods, performance specifications and other test methods which are appended to these standards.

1.2. Authority. - W.Va. Code §§22-5-1 et seq.

1.3. Filing Date. - ~~May 1, 1998~~

1.4. Effective Date. - ~~May 1, 1998~~

1.5. Incorporation by Reference - Federal Counterpart Regulation. The Director has determined that a federal counterpart regulation exists, and in accordance with the Director's recommendation, with limited exception, this rule incorporates by reference, 40 CFR Part 63, effective July 1, 1997, as amended by the Federal Register through June 1, 199~~7~~8.

§45-34-2. Requirements.

2.1. After the effective date of the state permit program under Title V of the CAA, no person may modify a major source of hazardous air pollutants, unless the Director determines that the maximum achievable control technology emission limitation under this rule for existing sources will be met.

2.2. After the effective date of the state permit program under Title V of the CAA, no person may construct or reconstruct any major source of hazardous air pollutants, unless the Director

determines that the maximum achievable control technology emission limitation under this rule for new sources will be met.

2.3. After the effective date of the state permit program under Title V of the CAA, the Director shall determine and apply case-by-case maximum achievable control technology standards to existing sources categorized by the Administrator pursuant to Section 112(c)(1) of the CAA for which the Administrator has not promulgated emission standards in accordance with Section 112(d) and 112(e) of the CAA.

2.4. Prior to constructing, reconstructing or modifying any facility subject to this rule, the owner or operator shall obtain a permit in accordance with the applicable requirements of 45CSR13, 45CSR14, 45CSR30 and this rule.

§45-34-3. Definitions.

3.1. "Administrator" means the Administrator of the United States Environmental Protection Agency or his or her designated representative.

3.2. "Director" means the Director of the West Virginia Division of Environmental Protection or such other person to whom the Director has delegated authority or duties pursuant to W. Va. Code §22-1-6 or §22-1-8.

3.3. "Hazardous air pollutant" means any air pollutant listed pursuant to §112(b) of the CAA as of June 1, 1997~~7~~8.

§45-34-4. Adoption of Standards.

4.1. The Director hereby adopts and incorporates by reference the provisions of 40 CFR Part 63 including any reference methods, performance specifications and other test methods which are appended to such standards and contained in 40 CFR Part 63 ~~as in effect on~~ effective July 1, 1997, as amended by the Federal Register through June 1, 1997~~7~~8, for the purposes of implementing a program for national emission standards for hazardous air pollutants for source categories, except as follows:

4.1.a. Section 63.15 is amended to provide that information shall be available to the public in accordance with W.Va. Code §§22-5-1 et seq., §§29B-1-1 et seq., and 45CSR31.

4.1.b. Any provision related to section 112(r) of the CAA.

§45-34-5. Director.

5.1. Any and all references in 40 CFR Part 63 to the "Administrator" are amended to be the "Director" except as follows:

5.1.a. where the federal regulations specifically provide that the Administrator shall retain authority and not transfer such authority to the State.

5.1.b. where provisions occur which refer to:

b.1. alternate means of emission limitations

b.2. alternate control technologies

b.3. innovative technology waivers

b.4. alternate test methods

b.5. alternate monitoring methods

b.6. waivers/adjustments to recordkeeping and reporting

b.7. emissions averaging

b.8. applicability determinations

5.1.c. where the context of the regulation clearly requires otherwise.

§45-34-6. Permits.

6.1. Nothing contained in this rule shall be construed or inferred to mean that permit requirements in accordance with applicable rules shall in any way be limited or inapplicable.

§45-34-7. Inconsistency Between Rules.

7.1. In the event of any inconsistency between this rule and any other existing rule of the West Virginia Division of Environmental Protection, such inconsistency shall be resolved by the determination of the Director and such determination shall be based upon the application of the more stringent provision, term, condition, method, rule or regulation.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
May 18, 1998		**Vol. 63, No. 95**
NESHAP: Petroleum Refineries	Withdrawal of Direct Final Rule	This action withdraws the direct final rule for monitoring, recordkeeping, and reporting requirement revisions published on March 20, 1998.
May 12, 1998		**Vol. 63, No. 91**
NESHAP: Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry	Final Rule	This action promulgates final amendments by adding tetrahydrobenzaldehyde (THBA) and crotonaldehyde to, and removing acetaldol from, the list of chemical production processes. It also establishes separate compliance dates for the THBA and crotonaldehyde production processes.
May 5, 1998		**Vol. 63, No. 86**
NESHAP: Halogenated Solvent Cleaning	Final Rule	This action revises the definition of the term "part" and adds a definition for continuous web cleaning machine to §63.461.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
May 4, 1998		**Vol. 63, No. 85**
NESHAP: General Provisions	Direct Final Rule	This action amends the General Control Device Requirements applicable to flares in 40CFR Part 63 which were issued as a final rule on March 16, 1994.
April 15, 1998		**Vol. 63, No. 72**
NESHAP: for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category	Final Rule	This action includes promulgation of national emission standards for hazardous air pollutants for the pulp and paper production source category.
April 10, 1998		**Vol. 63, No. 69**
NESHAP: Aerospace Manufacturing and Rework Facilities	Correction	This action corrects §63.744 as it appeared in the Federal Register of March 27, 1998.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
March 31, 1998		**Vol. 63, No. 61**
NESHAP: Group IV Polymers &Resins	Direct Final Rule	This action temporarily extends the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing polyethylene terephthalate (PET) using the continuous terephthalic acid (TPA) high viscosity multiple end finisher process to February 27, 2001.
March 27, 1998		**Vol. 63, No. 59**
NESHAP: Aerospace Manufacturing and Rework Facilities	Final Rule	This action finalizes several amendments to the national emission standards for hazardous air pollutants for affected facilities.
March 20, 1998		**Vol. 63, No. 54**
NESHAP: Petroleum Refineries	Direct Final Rule	This action revises monitoring, recordkeeping, and reporting requirements.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
February 27, 1998		**Vol. 63, No. 39**
NESHAP: Group IV Polymers &Resins	Final Rule	This action changes the effective date of the rule from September 12, 1996 to February 27, 1998 and amends certain compliance dates.
December 9, 1997		**Vol. 62, No. 236**
NESHAP: Ethylene Oxide Commercial Sterilization and Fumigation Operations (EO NESHAP)	Interim Final Rule	This action suspends, on an interim final basis, the EO NESHAP, allowing affected sources to defer compliance until December 6, 1998.
October 7, 1997		**Vol. 62, No. 194**
NESHAP: Primary Aluminum Reduction Plants	Final Rule	This action promulgates national emission standards for each new or existing potline, paste production plant, and anode bake furnace associated with a primary aluminum reduction plant, and for each new pitch storage tank associated with a primary aluminum production plant.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
July 15, 1997		**Vol. 62, No. 135**
NESHAP: Group I Polymers & Resins; Group IV Polymers & Resins	Correction	This action corrects errors and clarifies regulatory text in the "National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins" (subpart U), and in the "National Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins" (subpart JJJ).
June 13, 1997		**Vol. 62, No. 114**
NESHAP: Secondary Lead Smelting	Direct Final Rule	This action amends the national emission standards for hazardous air pollutants for new and existing secondary lead smelters.
June 9, 1997		**Vol. 62, No. 110**
NESHAP: Wood Furniture Manufacturing Operations	Direct Final Rule	This action revises the definition of wood furniture component in the NESHAP to exclude foam set cushions not made at a wood furniture manufacturing facility from this definition.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
June 6, 1997		**Vol. 62, No. 109**
NESHAP: Group IV Polymers & Resins	Direct Final Rule	This action provides a temporary extension of the compliance dates specified in 40 CFR 63.1311(b) and (d) for poly(ethylehe terephathalate) (PET) affected sources and announces the reconsideration of the equipment leak provisions contained in 40 CFR 63.1331 as these provisions pertain to PET affected sources..
June 3, 1997		**Vol. 62, No. 106**
NESHAP: Wood Furniture Manufacturing Operations	Correction	This action corrects errors and clarifies regulatory text in the "NESHAPS; Final Standards for Hazardous Air Pollutant Emissions from Wood Furniture Manufacturing Operations" which was promulgated in the Federal Register on December 7, 1995 (60 FR 62930).

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
May 18, 1998		**Vol. 63, No. 95**
NESHAP: Petroleum Refineries	Withdrawal of Direct Final Rule	This action withdraws the direct final rule for monitoring, recordkeeping, and reporting requirement revisions published on March 20, 1998.
May 12, 1998		**Vol. 63, No. 91**
NESHAP: Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry	Final Rule	This action promulgates final amendments by adding tetrahydrobenzaldehyde (THBA) and crotonaldehyde to, and removing acetaldol from, the list of chemical production processes. It also establishes separate compliance dates for the THBA and crotonaldehyde production processes.
May 5, 1998		**Vol. 63, No. 86**
NESHAP: Halogenated Solvent Cleaning	Final Rule	This action revises the definition of the term "part" and adds a definition for continuous web cleaning machine to §63.461.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
May 4, 1998		**Vol. 63, No. 85**
NESHAP: General Provisions	Direct Final Rule	This action amends the General Control Device Requirements applicable to flares in 40CFR Part 63 which were issued as a final rule on March 16, 1994.
April 15, 1998		**Vol. 63, No. 72**
NESHAP: for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category	Final Rule	This action includes promulgation of national emission standards for hazardous air pollutants for the pulp and paper production source category.
April 10, 1998		**Vol. 63, No. 69**
NESHAP: Aerospace Manufacturing and Rework Facilities	Correction	This action corrects §63.744 as it appeared in the Federal Register of March 27, 1998.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
March 31, 1998		**Vol. 63, No. 61**
NESHAP: Group IV Polymers &Resins	Direct Final Rule	This action temporarily extends the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing polyethylene terephthalate (PET) using the continuous terephthalic acid (TPA) high viscosity multiple end finisher process to February 27, 2001.
March 27, 1998		**Vol. 63, No. 59**
NESHAP: Aerospace Manufacturing and Rework Facilities	Final Rule	This action finalizes several amendments to the national emission standards for hazardous air pollutants for affected facilities.
March 20, 1998		**Vol. 63, No. 54**
NESHAP: Petroleum Refineries	Direct Final Rule	This action revises monitoring, recordkeeping, and reporting requirements.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
February 27, 1998		**Vol. 63, No. 39**
NESHAP: Group IV Polymers &Resins	Final Rule	This action changes the effective date of the rule from September 12, 1996 to February 27, 1998 and amends certain compliance dates.
December 9, 1997		**Vol. 62, No. 236**
NESHAP: Ethylene Oxide Commercial Sterilization and Fumigation Operations (EO NESHAP)	Interim Final Rule	This action suspends, on an interim final basis, the EO NESHAP, allowing affected sources to defer compliance until December 6, 1998.
October 7, 1997		**Vol. 62, No. 194**
NESHAP: Primary Aluminum Reduction Plants	Final Rule	This action promulgates national emission standards for each new or existing potline, paste production plant, and anode bake furnace associated with a primary aluminum reduction plant, and for each new pitch storage tank associated with a primary aluminum production plant.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
July 15, 1997		**Vol. 62, No. 135**
NESHAP: Group I Polymers & Resins; Group IV Polymers & Resins	Correction	This action corrects errors and clarifies regulatory text in the "National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins" (subpart U), and in the "National Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins" (subpart JJJ).
June 13, 1997		**Vol. 62, No. 114**
NESHAP: Secondary Lead Smelting	Direct Final Rule	This action amends the national emission standards for hazardous air pollutants for new and existing secondary lead smelters.
June 9, 1997		**Vol. 62, No. 110**
NESHAP: Wood Furniture Manufacturing Operations	Direct Final Rule	This action revises the definition of wood furniture component in the NESHAP to exclude foam set cushions not made at a wood furniture manufacturing facility from this definition.

SUMMARY OF NESHAP ACTIONS
Federal Registers
June 1, 1997 - June 1, 1998

- Subject -	- Class -	- Summary -
June 6, 1997		**Vol. 62, No. 109**
NESHAP: Group IV Polymers & Resins	Direct Final Rule	This action provides a temporary extension of the compliance dates specified in 40 CFR 63.1311(b) and (d) for poly(ethylehe terephathalate) (PET) affected sources and announces the reconsideration of the equipment leak provisions contained in 40 CFR 63.1331 as these provisions pertain to PET affected sources..
June 3, 1997		**Vol. 62, No. 106**
NESHAP: Wood Furniture Manufacturing Operations	Correction	This action corrects errors and clarifies regulatory text in the "NESHAPS; Final Standards for Hazardous Air Pollutant Emissions from Wood Furniture Manufacturing Operations" which was promulgated in the Federal Register on December 7, 1995 (60 FR 62930).

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

2. Section 9.1 is amended by adding in numerical order the new entries to the table under the indicated heading to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control no.
* * * * *	
National Emission Standards for Hazardous Air Pollutants for Source Categories[3]	
* * * * *	
63.480–63.506	2060–0356
* * * * *	

[3] The ICRs referenced in this section of the table encompass the applicable general provisions contained in 40 CFR part 63, subpart A, which are not independent information collection requirements.

* * * * *

PART 63—[AMENDED]

3. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart U—[Amended]

4. Section 63.485 is amended by revising paragraph (o) introductory text to read as follows:

§ 63.485 Continuous front-end process vent provisions.

* * * * *

(o) Group 1 halogenated continuous front-end process vents at affected existing sources producing butyl rubber, halobutyl rubber, or ethylene propylene rubber are exempt from the requirements to control hydrogen halides and halogens from the outlet of combustion devices contained in § 63.113(c) of subpart G and are exempt from the prohibition against flaring halogenated vent streams, which is contained in § 63.113(a)(1)(ii) of subpart G, if the conditions in paragraphs (o)(1) and (o)(2) of this section are met. Affected new sources are not exempt from these provisions.

* * * * *

5. Section 63.502 is amended by revising paragraph (a) and by adding paragraph (j) to read as follows:

§ 63.502 Equipment leak provisions.

(a) The owner or operator of each affected source shall comply with the requirements of subpart H of this part for all equipment in organic HAP service, with the exceptions noted in paragraphs (b) through (j) of this section.

* * * * *

(j) The owner or operator of each affected source shall substitute the phrase "the provisions of subparts F, I, or U of this part" for both the phrases "the provisions of subparts F or I of this part" and the phrase "the provisions of subpart F or I of this part" throughout §§ 63.163 and 63.168, for the purposes of this subpart. In addition, the owner or operator of each affected source shall substitute the phrase "subparts F, I, and U" for the phrase "subparts F and I" in § 63.174(c)(2)(iii), for the purposes of this subpart.

Subpart JJJ—[Amended]

6. Section 63.1331 is amended by revising paragraph (a) introductory text and adding paragraph (a)(10) to read as follows:

§ 63.1331 Equipment leak provisions.

(a) Except as provided in paragraphs (b) and (c) of this section, the owner or operator of each affected source shall comply with the requirements of subpart H of this part, with the differences noted in paragraphs (a)(1) through (a)(10) of this section.

* * * * *

(10) The owner or operator of each affected source shall substitute the phrase "the provisions of subparts F, I, or JJJ of this part" for both the phrases "the provisions of subparts F or I of this part" and the phrase "the provisions of subpart F or I of this part" throughout §§ 63.163 and 63.168, for the purposes of this subpart. In addition, the owner or operator of each affected source shall substitute the phrase "subparts F, I, and JJJ" for the phrase "subparts F and I" in § 63.174(c)(2)(iii), for the purposes of this subpart.

* * * * *

[FR Doc. 97–18566 Filed 7–14–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[DE030–1008a; FRL–5856–1]

Approval and Promulgation of Air Quality Implementation Plans; Delaware—General Conformity Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: EPA is approving a State Implementation Plan (SIP) revision submitted by the State of Delaware. This revision consists of Delaware's regulation for General Conformity which sets forth policy, criteria, and procedures for demonstrating and assuring conformity of non-transportation related federal projects to all applicable implementation plans. The intended effect of this action is to approve Delaware's General Conformity regulation as a SIP revision.

DATES: This action is effective September 15, 1997 unless notice is received on or before Septmeber 14, 1997 that adverse or critical comments will be submitted. If the effective date is delayed, timely notice will be published in the **Federal Register.**

ADDRESSES: Comments may be mailed to David L. Arnold, Chief, Ozone/CO & Mobile Sources Section, Mailcode 3AT21, U.S. Environmental Protection Agency, Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107. Copies of the documents relevant to this action are available for public inspection during normal business hours at the Air, Radiation, and Toxics Division, U.S. Environmental Protection Agency, Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107; the Air and Radiation Docket and Information Center, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460; Delaware Department of Natural Resources & Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, Delaware 19903.

FOR FURTHER INFORMATION CONTACT: Rose Quinto, (215) 566–2182, at the EPA Region III office or via e-mail at quinto.rose@epamail.epa.gov. While information may be requested via e-mail, comments must be submitted in writing to the above Region III address.

SUPPLEMENTARY INFORMATION: On October 2, 1996, the Delaware Department of Natural Resources & Environmental Control (DNREC) submitted a formal revision to its State Implementation Plan (SIP) to EPA for

a flare could be used to control halogenated Group 1 vent streams at affected sources producing one of the three types of rubber listed above. Therefore, this amendment simply adds an additional reference within § 63.485(o), to clarify that front-end continuous process vents at affected sources producing butyl rubber, halobutyl rubber, or ethylene-propylene rubber are exempt from the requirements of § 63.113(a)(1)(ii) of subpart G.

The intent of §§ 63.502 and 63.1331 to incorporate all but a few specified portions of subpart H has not changed since promulgation; these edits are merely for the sake of clarification. The amendment to § 63.485(o) is also merely a clarification, and the intent of that paragraph has not changed since promulgation. As a result, the EPA finds that it is unnecessary to provide prior notice and opportunity to comment on these clarifying amendments.

II. Administrative Requirements

A. Paperwork Reduction Act

For the both the Group I and Group IV Polymers and Resins NESHAP, the information collection requirements were submitted to the Office of Management and Budget (OMB) under the Paperwork Reduction Act. At promulgation, OMB had already approved the information collection requirements for the Group IV Polymers and Resins NESHAP and assigned those standards the OMB control number 2060–0351. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. The EPA has amended 40 CFR part 9, Section 9.1, to indicate the information collection requirements contained in the Group IV Polymers and Resins NESHAP.

An Information Collection Request (ICR) document for the Group I Polymers and Resins I NESHAP was prepared by the EPA (ICR No. 1746.01) but, at promulgation, that ICR had not yet been approved by OMB. However, since promulgation the OBM has approved the ICR, and today's action amends the table of currently approved ICR control numbers issued by OMB and updates the table to accurately display those information requirements not previously approved. The information collection requirements that are made effective by this notice under OMB control number 2060–0356 were contained in Information Collection Request number 1746.01. A copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, or by calling (202) 260–2740.

The amendments to the NESHAP contained in this final rule should have no impact on the information collection burden estimates made previously. Therefore, the ICRs have not been revised.

B. Executive Order 12866 Review

Under Executive Order (E.O.) 12866, the EPA must determine whether the regulatory action is "significant" and therefore, subject to OMB review and the requirements of the Executive Order. The Order defines "significant" regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

These amendments to those NESHAP clarify the applicability of the equipment leak provisions in those rules. These amendments do not add any additional control requirements. Therefore, this final rule and correcting amendments were classified "non-significant" under Executive Order 12866 and were not required to be reviewed by OMB.

C. Regulatory Flexibility

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. The EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. See the September 5, 1996 **Federal Register** (61 FR 46906) and the September 12, 1996 **Federal Register** (61 FR 48208) for the basis for this determination.

D. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to the private sector, of $100 million or more. Under Section 205, the EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that this final rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector, nor does it significantly or uniquely impact small governments, because this action contains no requirements that apply to such governments or impose obligations upon them. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

E. Submission to Congress and the General Accounting Office

Under the Small Business Regulatory Enforcement Fairness Act of 1996, the EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of this final rule in the **Federal Register**. This is not a "major rule" as defined by the Small Business Regulatory Enforcement Fairness Act.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 63

Environmental protection, Reporting and recordkeeping requirements.

Dated: July 8, 1997.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, parts 9 and 63 of title 40, chapter I of the Code of Federal Regulations are amended as follows:

PART 9—[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Dated: June 23, 1997.

Approved:

R.R. Pixa,

Captain, JAGC, U.S. Navy, Deputy Assistant Judge Advocate General (Admiralty).

[FR Doc. 97–18505 Filed 7–14–97; 8:45 am]

BILLING CODE 3810–FF–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[AD–FRL–5858–1]

RIN 2060–AD–56; and RIN 2060–AE–37

OMB Approval Number Under the Paperwork Reduction Act; National Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins; National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correcting amendments.

SUMMARY: This action corrects errors and clarifies regulatory text in the "National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins," (40 CFR part 63, subpart U) which was issued as a final rule on September 5, 1996, and in the "National Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins," (40 CFR part 63, subpart JJJ) which was issued as a final rule on September 12, 1996.

In addition, in compliance with the Paperwork Reduction Act (PRA), this document announces that the Information Collection Requirements (ICR) contained in the "National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins," final rule (61 FR 46906), which were not previously approved under the Office of Management and Budget (OMB), have been approved by OMB under control number 2060–0356. The ICRs in the affected sections of the regulation are effective July 15, 1997. This action also amends the OMB approval table to list the OMB control number issued under the PRA for the affected sections.

DATES: The correcting amendments are effective July 15, 1997.

The information collection requirements contained in the final rule published on September 5, 1996 (61 FR 46906) are effective July 15, 1997.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Rosensteel, Organic Chemicals Group, Emission Standards Division (MD–13), U. S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5608.

SUPPLEMENTARY INFORMATION: On September 5, 1996 (61 FR 46906), the Environmental Protection Agency (EPA) promulgated National Emission Standards for Hazardous Air Pollutants (NESHAP) for Group I Polymers and Resins. On September 12, 1996 (61 FR 48208), the EPA promulgated NESHAP for Group IV Polymers and Resins. These regulations were promulgated as subpart U and subpart JJJ of 40 CFR part 63. This document contains corrections and clarifications related to a cross-referencing error and oversight in the promulgated regulations.

In addition, this action amends the table of currently approved ICR control numbers issued by OMB. Today's amendment updates the table to list those information requirements promulgated under the National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins, which appeared in the **Federal Register** on September 5, 1996 (61 FR 46906). The affected regulations are codified at 40 CFR part 63, subpart U. The EPA will continue to present OMB control numbers in a consolidated table format to be codified in 40 CFR part 9 of the Agency's regulations, and in each CFR volume containing EPA regulations. The table lists the section numbers with reporting and recordkeeping requirements, and the current OMB control numbers. This listing of the OMB control numbers and their subsequent codification in the CFR satisfies the requirements of the Paperwork Reduction Act and OMB's implementing regulations at 5 CFR part 1320.

This ICR was previously subject to public notice and comment prior to OMB approval, and today's amendment simply adds this ICR to the list of currently approved ICR control numbers. As a result, the EPA finds that there is "good cause" under section 553(b)(B) of the Administrative Procedure Act to amend this table without prior notice and comment.

I. Description of Clarifying Changes

Both the National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins (40 CFR part 63, subpart U) and the National Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins (40 CFR part 63, subpart JJJ) require that affected sources follow the equipment leak provisions found in the Hazardous Organics NESHAP, or HON (40 CFR part 63, subpart H). As promulgated on September 5, 1996 and September 12, 1996, respectively, neither subpart U (61 FR 46906) nor subpart JJJ (61 FR 48208) is clear about what the requirements are for equipment leaks at affected sources that are subject to the requirements of §§ 63.163 and 63.168 of subpart H (for pumps in light liquid service, valves in gas/vapor service and valves in light liquid service), as required under § 63.502 of subpart U and § 63.1331 of subpart JJJ.

Specifically, § 63.163 (a) and (b) of subpart H provide different "phases" (I, II, and III) of implementation of the requirements for pumps in light liquid service. Leak definitions become increasingly stringent over the course of the three phases. Similarly, § 63.168 (a) and (b) of subpart H have phased implementation of leak definitions for valves in gas/vapor or light liquid service. The EPA intended that the phased implementation of the leak definitions in 40 CFR part 63, subpart H apply to affected sources under both subparts U and JJJ. However, due to the structure of paragraphs § 63.163(a)(1) and § 63.168(a)(1), it is not clear that the three phases of implementation of these requirements also apply to subpart U and subpart JJJ affected sources. Because of this potential confusion, the EPA has found it necessary to amend § 63.502 and § 63.1331 to clarify that subparts U and JJJ are subject to § 63.163(a)(1)(i) and § 63.168(a)(1)(i). For this reason, an explanatory paragraph was added to both §§ 63.502 and 63.1331, describing how subpart U and JJJ affected sources should interpret § 63.163(a)(1)(i) and § 63.168(a)(1)(i), for the purposes of this subpart. A similar edit was necessary regarding § 63.174(c)(2)(iii), and this change is also included in the new explanatory paragraph.

Today's final rule also amends § 63.485(o) of subpart U, to clarify the EPA's intention at promulgation to exempt halogenated front-end process vents from the requirement to control hydrogen halides and halogens from the outlet of combustion devices at existing affected sources that produce butyl rubber, halobutyl rubber, or ethylene-propylene rubber. As promulgated, the rule exempts these halogenated vents from § 63.113(c) of subpart (G), which contains the requirement that the outlet of combustion devices that are controlling Group 1 halogenated vent streams be routed to a scrubber or other control device. However, § 63.113(a)(1)(ii) of subpart G prohibits the control of halogenated vent streams with a flare. Since § 63.485(o) did not address § 63.113(a)(1)(ii) of subpart G, there could be confusion as to whether

TABLE II.—LUMP SUM VALUATIONS

[In using this table: (1) For benefits for which the participant or beneficiary is entitled to be in pay status on the valuation date, the immediate annuity rate shall apply; (2) For benefits for which the deferral period is y years (where y is an integer and $0<y\leq n_1$), interest rate i_1 shall apply from the valuation date for a period of y years, and thereafter the immediate annuity rate shall apply; (3) For benefits for which the deferral period is y years (where y is an integer and $n_1<y\leq n_1+n_2$), interest rate i_2 shall apply from the valuation date for a period of $y-n_1$ years, interest rate i_1 shall apply for the following n_1 years, and thereafter the immediate annuity rate shall apply; (4) For benefits for which the deferral period is y years (where y is an integer and $y>n_1+n_2$), interest rate i_3 shall apply from the valuation date for a period of $y-n_1-n_2$ years, interest rate i_2 shall apply for the following n_2 years, interest rate i_1 shall apply for the following n_1 years, and thereafter the immediate annuity rate shall apply.]

Rate set	For plans with a valuation date		Immediate annuity rate (percent)	Deferred annuities (percent)				
	On or after	Before		i_1	i_2	i_3	n_1	n_2
*	*	*	*	*	*	*	*	*
46	08–1–97	09–1–97	4.75	4.00	4.00	4.00	7	8

Issued in Washington, D.C., on this 10th day of July 1997.

John Seal,

Acting Executive Director, Pension Benefit Guaranty Corporation.

[FR Doc. 97–18576 Filed 7–14–97; 8:45 am]

BILLING CODE 7708–01–P

DEPARTMENT OF DEFENSE

Department of the Navy

32 CFR Part 706

Certifications and Exemptions Under the International Regulations for Preventing Collisions at Sea, 1972 Amendment

AGENCY: Department of the Navy, DOD.

ACTION: Final rule.

SUMMARY: The Department of the Navy is amending its certifications and exemptions under the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS), to reflect that the Deputy Assistant Judge Advocate General (Admiralty) of the Navy has determined that USS ARLEIGH BURKE (DDG 51) is a vessel of the Navy which, due to its special construction and purpose, cannot comply fully with certain provisions of the 72 COLREGS without interfering with its special functions as a naval ship. The intended effect of this rule is to warn mariners in waters where 72 COLREGS apply.

EFFECTIVE DATE: June 23, 1997.

FOR FURTHER INFORMATION CONTACT: Captain R.R. Pixa, JAGC, U.S. Navy, Admiralty Counsel, Office of the Judge Advocate General, Navy Department, 200 Stovall Street, Alexandria, VA 22332–2400, Telephone number: (703) 325–9744.

SUPPLEMENTARY INFORMATION: Pursuant to the authority granted in 33 U.S.C. 1605, the Department of the Navy amends 32 CFR Part 706. This amendment provides notice that the Deputy Assistant Judge Advocate General (Admiralty) of the Navy, under authority delegated by the Secretary of the Navy, has certified that USS ARLEIGH BURKE (DDG 51) is a vessel of the Navy which, due to its special construction and purpose, cannot comply fully with the following specific provision of 72 COLREGS without interfering with its special function as a naval ship: Annex I, paragraph 3(a), pertaining to the location of the forward masthead light in the forward quarter of the ship, the placement of the after masthead light, and the horizontal distance between the forward and after masthead lights. The Deputy Assistant Judge Advocate General (Admiralty) has also certified that the lights involved are located in closest possible compliance with the applicable 72 COLREGS requirements.

Moreover, it has been determined, in accordance with 32 CFR Parts 296 and 701, that publication of this amendment for public comment prior to adoption is impracticable, unnecessary, and contrary to public interest since it is based on technical findings that the placement of lights on this vessel in a manner differently from that prescribed herein will adversely affect the vessel's ability to perform its military functions.

List of Subjects in 32 CFR Part 706

Marine safety, Navigation (water), Vessels.

Accordingly, 32 CFR Part 706 is amended as follows:

PART 706—[AMENDED]

1. The authority citation for 32 CFR part 706 continues to read as follows:

Authority: 33 U.S.C. 1605.

2. Table Five of § 706.2 is amended by revising the entry for the USS ARLEIGH BURKE to read as follows:

§ 706.2 Certifications of the Secretary of the Navy under Executive Order 11964 and 33 U.S.C. 1605.

* * * * *

TABLE FIVE

Vessel	No.	Masthead lights not over all other lights and obstructions. Annex I, sec. 2(f)	Forward masthead light not in forward quarter of ship. Annex I, sec. 3(a)	After masthead light less than ½ ship's length aft of forward masthead light. Annex I, sec. 3(a)	Percentage horizontal separation attained
*	*	*	*	*	*
USS ARLEIGH BURKE	DDG 51	X	X	X	19.0
*	*	*	*	*	*

Testing and Materials. Philadelphia, PA. 1974. pp. 617–622.

10. Felix, L.G., G.I. Clinard, G.E. Lacy, and J.D. McCain. Inertial Cascade Impactor Substrate Media for Flue Gas Sampling. U.S. Environmental Protection Agency. Research Triangle Park, NC 27711. Publication No. EPA–600/7–77–060. June 1977. 83 p.

11. Westlin, P.R., and R.T. Shigehara. Procedure for Calibrating and Using Dry Gas Volume Meters as Calibration Standards. Source Evaluation Society Newsletter. 3(1):17–30. February 1978.

12. Lodge, J.P., Jr., J.B. Pate, B.E. Ammons, and G.A. Swanson. The Use of Hypodermic Needles as Critical Orifices in Air Sampling. J. Air Pollution Control Association. *16*:197–200. 1966.

18.0 Tables, Diagrams, Flowcharts, and Validation Data

TABLE 315–1. FLOW RATES FOR VARIOUS NEEDLE SIZES AND TUBE LENGTHS.

Gauge/length (cm)	Flow rate (liters/min)	Gauge/length (cm)	Flow rate (liters/min)
12/7.6	32.56	14/2.5	19.54
12/10.2	30.02	14/5.1	17.27
13/2.5	25.77	14/7.6	16.14
13/5.1	23.50	15/3.2	14.16
13/7.6	22.37	15/7.6	11.61
13/10.2	20.67	115/10.2	10.48

Figure 315–1. Particulate and MCEM Analyses

Particulate Analysis

Plant	
Date	
Run No.	
Filter No.	
Amount liquid lost during transport	
Acetone blank volume (ml)	
Acetone blank concentration (Eq. 315–4) (mg/mg)	
Acetone wash blank (Eq. 315–5) (mg)	

	Final weight (mg)	Tare weight (mg)	Weight gain (mg)
Container No. 1			
Container No. 2			
Total			
Less Acetone blank			
Weight of particulate matter			

	Final volume (mg)	Initial volume (mg)	Liquid collected (mg)

Moisture Analysis

Impingers	Note 1	Note 1	
Silica gel			
Total			

Note 1: Convert volume of water to weight by multiplying by the density of water (1 g/ml).

MCEM Analysis

Container No.	Final weight (mg)	Tare of aluminum dish (mg)	Weight gain	Acetone wash volume (ml)	Methylene chloride wash volume (ml)
1					
2+2M					
3W					
3S					
Total	.....	.....	$\sum m_{total}$	$\sum V_{aw}$	$\sum V_{tw}$

Less acetone wash blank (mg) (not to exceed 1 mg/l of acetone used)	$w_a = C_a \rho_a \sum V_{aw}$
Less methylene chloride wash blank (mg) (not to exceed 1.5 mg/l of methylene chloride used)	$w_t = C_t \rho_t \sum V_{tw}$
Less filter blank (mg) (not to exceed . . . (mg/filter)	F_b
MCEM weight (mg)	$m_{MCEOM} = \sum m_{total} - w_a - w_t - f_b$

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BILLING CODE 6560–50–P

calibration standards in place of the wet test meter specified in section 10.3 of this method, provided that they are selected, calibrated, and used as follows:

16.2.1 Selection of critical orifices.

16.2.1.1 The procedure that follows describes the use of hypodermic needles or stainless steel needle tubing that has been found suitable for use as critical orifices. Other materials and critical orifice designs may be used provided the orifices act as true critical orifices: i.e., a critical vacuum can be obtained, as described in section 7.2.2.2.3 of Method 5, 40 CFR part 60, appendix A. Select five critical orifices that are appropriately sized to cover the range of flow rates between 10 and 34 liters/min or the expected operating range. Two of the critical orifices should bracket the expected operating range. A minimum of three critical orifices will be needed to calibrate a Method 5 DGM; the other two critical orifices can serve as spares and provide better selection for bracketing the range of operating flow rates. The needle sizes and tubing lengths shown in Table 315–1 give the approximate flow rates indicated in the table.

16.2.1.2 These needles can be adapted to a Method 5 type sampling train as follows: Insert a serum bottle stopper, 13 x 20 mm sleeve type, into a 0.5 in Swagelok quick connect. Insert the needle into the stopper as shown in Figure 5–9 of Method 5, 40 CFR part 60, appendix A.

16.2.2 Critical orifice calibration. The procedure described in this section uses the Method 5 meter box configuration with a DGM as described in section 6.1.1.9 of this method to calibrate the critical orifices. Other schemes may be used, subject to the approval of the Administrator.

16.2.2.1 Calibration of meter box. The critical orifices must be calibrated in the same configuration as they will be used; i.e., there should be no connections to the inlet of the orifice.

16.2.2.1.1 Before calibrating the meter box, leak-check the system as follows: Fully open the coarse adjust valve and completely close the bypass valve. Plug the inlet. Then turn on the pump and determine whether there is any leakage. The leakage rate shall be zero; i.e., no detectable movement of the DGM dial shall be seen for 1 minute.

16.2.2.1.2 Check also for leakages in that portion of the sampling train between the pump and the orifice meter. See section 5.6 of Method 5, 40 CFR part 60, appendix A for the procedure; make any corrections, if necessary. If leakage is detected, check for cracked gaskets, loose fittings, worn O-rings, etc. and make the necessary repairs.

16.2.2.1.3 After determining that the meter box is leakless, calibrate the meter box according to the procedure given in section 5.3 of Method 5, 40 CFR part 60, appendix A. Make sure that the wet test meter meets the requirements stated in section 7.1.1.1 of Method 5, 40 CFR part 60, appendix A. Check the water level in the wet test meter. Record the DGM calibration factor, Y.

16.2.2.2 Calibration of critical orifices. Set up the apparatus as shown in Figure 5–10 of Method 5, 40 CFR part 60, appendix A.

16.2.2.2.1 Allow a warm-up time of 15 minutes. This step is important to equilibrate the temperature conditions through the DGM.

16.2.2.2.2 Leak-check the system as in section 7.2.2.1.1 of Method 5, 40 CFR part 60, appendix A. The leakage rate shall be zero.

16.2.2.2.3 Before calibrating the critical orifice, determine its suitability and the appropriate operating vacuum as follows: turn on the pump, fully open the coarse adjust valve, and adjust the bypass valve to give a vacuum reading corresponding to about half of atmospheric pressure. Observe the meter box orifice manometer reading, DH. Slowly increase the vacuum reading until a stable reading is obtained on the meter box orifice manometer. Record the critical vacuum for each orifice. Orifices that do not reach a critical value shall not be used.

16.2.2.2.4 Obtain the barometric pressure using a barometer as described in section 6.1.2 of this method. Record the barometric pressure, P_{bar}, in mm Hg (in. Hg).

16.2.2.2.5 Conduct duplicate runs at a vacuum of 25 to 50 mm Hg (1 to 2 in. Hg) above the critical vacuum. The runs shall be at least 5 minutes each. The DGM volume readings shall be in increments of complete revolutions of the DGM. As a guideline, the times should not differ by more than 3.0 seconds (this includes allowance for changes in the DGM temperatures) to achieve ±0.5 percent in K'. Record the information listed in Figure 5–11 of Method 5, 40 CFR part 60, appendix A.

16.2.2.2.6 Calculate K' using Equation 315–11.

$$K' = \frac{K_1 V_m Y \left(P_{bar} + \frac{\Delta H}{13.6}\right) T_{amb}^{\frac{1}{2}}}{P_{bar} T_m \Theta} \qquad \text{Eq. 315-11}$$

where

K' = Critical orifice coefficient, $[m^3)(°K)^{1/2}]/[(mm\ Hg)(min)]$ $\{[(ft^3)(°R)^{1/2})]/[(in.\ Hg)(min)]\}$;

T_{amb} = Absolute ambient temperature, °K (°R).

16.2.2.2.7 Average the K' values. The individual K' values should not differ by more than ±0.5 percent from the average.

16.2.3 Using the critical orifices as calibration standards.

16.2.3.1 Record the barometric pressure.

16.2.3.2 Calibrate the metering system according to the procedure outlined in sections 7.2.2.2.1 to 7.2.2.2.5 of Method 5, 40 CFR part 60, appendix A. Record the information listed in Figure 5–12 of Method 5, 40 CFR part 60, appendix A.

16.2.3.3 Calculate the standard volumes of air passed through the DGM and the critical orifices, and calculate the DGM calibration factor, Y, using the equations below:

$V_{m(std)} = K_1 V_m [P_{bar} + (\Delta H/13.6)]/T_m$ *Eq. 315–12*

$V_{cr(std)} = K' (P_{bar} \Theta)/T_{amb}^{1/2}$ *Eq. 315–13*

$Y = V_{cr(std)}/V_{m(std)}$ *Eq. 315–14*

where

$V_{cr(std)}$ = Volume of gas sample passed through the critical orifice, corrected to standard conditions, dscm (dscf).

K' = 0.3858 °K/mm Hg for metric units = 17.64 °R/in Hg for English units.

16.2.3.4 Average the DGM calibration values for each of the flow rates. The calibration factor, Y, at each of the flow rates should not differ by more than ±2 percent from the average.

16.2.3.5 To determine the need for recalibrating the critical orifices, compare the DGM Y factors obtained from two adjacent orifices each time a DGM is calibrated; for example, when checking orifice 13/2.5, use orifices 12/10.2 and 13/5.1. If any critical orifice yields a DGM Y factor differing by more than 2 percent from the others, recalibrate the critical orifice according to section 7.2.2.2 of Method 5, 40 CFR part 60, appendix A.

17.0 References.

1. Addendum to Specifications for Incinerator Testing at Federal Facilities. PHS, NCAPC. December 6, 1967.

2. Martin, Robert M. Construction Details of Isokinetic Source-Sampling Equipment. Environmental Protection Agency. Research Triangle Park, NC. APTD–0581. April 1971.

3. Rom, Jerome J. Maintenance, Calibration, and Operation of Isokinetic Source Sampling Equipment. Environmental Protection Agency. Research Triangle Park, NC. APTD–0576. March 1972.

4. Smith, W.S., R.T. Shigehara, and W.F. Todd. A Method of Interpreting Stack Sampling Data. Paper Presented at the 63rd Annual Meeting of the Air Pollution Control Association, St. Louis, MO. June 14–19, 1970.

5. Smith, W.S., et al. Stack Gas Sampling Improved and Simplified With New Equipment. APCA Paper No. 67–119. 1967.

6. Specifications for Incinerator Testing at Federal Facilities. PHS, NCAPC. 1967.

7. Shigehara, R.T. Adjustment in the EPA Nomograph for Different Pitot Tube Coefficients and Dry Molecular Weights. Stack Sampling News 2:4–11. October 1974.

8. Vollaro, R.F. A Survey of Commercially Available Instrumentation for the Measurement of Low-Range Gas Velocities. U.S. Environmental Protection Agency, Emission Measurement Branch. Research Triangle Park, NC. November 1976 (unpublished paper).

9. Annual Book of ASTM Standards. Part 26. Gaseous Fuels; Coal and Coke; Atmospheric Analysis. American Society for

$$I = \frac{100\,T_s\left[K_4 V_{lc} + \left(\frac{V_m Y}{T_m}\right)\left(P_{bar} + \frac{\Delta H}{13.6}\right)\right]}{60\,\Theta\,V_s P_s A_n} \qquad \text{Eq. 315-7}$$

where

K_4 = 0.003454 [(mm Hg)(m^3)]/[(m1)(°K)] for metric units;
= 0.002669 [(in Hg)(ft^3)]/[(m1)(°R)] for English units.

12.12.2 Calculation from intermediate values.

$$I = \frac{T_s V_{m(std)} P_{std}\,100}{T_{std} V_s \Theta A_n P_s\,60(1-B_{ws})} = K_5 \frac{T_s V_{m(std)}}{P_s V_s A_n \Theta (1-B_{ws})} \qquad \text{Eq. 315-8}$$

where

K_5 = 4.320 for metric units;
= 0.09450 for English units.

12.12.3 Acceptable results. If 90 percent ≤ I ≤ 110 percent, the results are acceptable. If the PM or MCEM results are low in comparison to the standard, and "I" is over 110 percent or less than 90 percent, the Administrator may opt to accept the results. Reference 4 in the Bibliography may be used to make acceptability judgments. If "I" is judged to be unacceptable, reject the results, and repeat the test.

12.13 Stack gas velocity and volumetric flow rate. Calculate the average stack gas velocity and volumetric flow rate, if needed, using data obtained in this method and the equations in sections 5.2 and 5.3 of Method 2, 40 CFR part 60, appendix A.

12.14 MCEM results. Determine the MCEM concentration from the results from Containers 1, 2, 2M, 3W, and 3S less the acetone, methylene chloride, and filter blanks value as determined in the following equation:

$m_{mcem} = \Sigma m_{total} - w_a - w_t - f_b$

13.0 Method Performance. [Reserved]

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 Alternative Procedures.

16.1 Dry gas meter as a calibration standard. A DGM may be used as a calibration standard for volume measurements in place of the wet test meter specified in section 16.1 of this method, provided that it is calibrated initially and recalibrated periodically as follows:

16.1.1 Standard dry gas meter calibration.

16.1.1.1. The DGM to be calibrated and used as a secondary reference meter should be of high quality and have an appropriately sized capacity, e.g., 3 liters/rev (0.1 ft^3/rev). A spirometer (400 liters or more capacity), or equivalent, may be used for this calibration, although a wet test meter is usually more practical. The wet test meter should have a capacity of 30 liters/rev (1 ft^3/rev) and be capable of measuring volume to within 1.0 percent; wet test meters should be checked against a spirometer or a liquid displacement meter to ensure the accuracy of the wet test meter. Spirometers or wet test meters of other sizes may be used, provided that the specified accuracies of the procedure are maintained.

16.1.1.2 Set up the components as shown in Figure 5–7 of Method 5, 40 CFR part 60, appendix A. A spirometer, or equivalent, may be used in place of the wet test meter in the system. Run the pump for at least 5 minutes at a flow rate of about 10 liters/min (0.35 cfm) to condition the interior surface of the wet test meter. The pressure drop indicated by the manometer at the inlet side of the DGM should be minimized (no greater than 100 mm H_2O [4 in. H_2O] at a flow rate of 30 liters/min [1 cfm]). This can be accomplished by using large-diameter tubing connections and straight pipe fittings.

16.1.1.3 Collect the data as shown in the example data sheet (see Figure 5–8 of Method 5, 40 CFR part 60, appendix A). Make triplicate runs at each of the flow rates and at no less than five different flow rates. The range of flow rates should be between 10 and 34 liters/min (0.35 and 1.2 cfm) or over the expected operating range.

16.1.1.4 Calculate flow rate, Q, for each run using the wet test meter volume, V_w, and the run time, q. Calculate the DGM coefficient, Y_{ds}, for each run. These calculations are as follows:

$$Q = K_1 \frac{P_{bar} V_w}{(t_w + t_{std})\Theta} \qquad \text{Eq. 315-9}$$

$$Y_{ds} = \frac{V_w (T_{ds} + T_{std})\,P_{bar}}{V_{ds}(T_w + T_{std})\left(P_{bar} + \frac{\Delta p}{13.6}\right)} \qquad \text{Eq. 315-10}$$

Where

K_1 = 0.3858 for international system of units (SI); 17.64 for English units;
P_{bar} = Barometric pressure, mm Hg (in Hg);
V_w = Wet test meter volume, liter (ft^3);
t_w = Average wet test meter temperature, °C (°F);
t_{std} = 273°C for SI units; 460°F for English units;
Θ = Run time, min;
t_{ds} = Average dry gas meter temperature, °C (°F);
V_{ds} = Dry gas meter volume, liter (ft^3);
Δp = Dry gas meter inlet differential pressure, mm H_2O (in H_2O).

16.1.1.5 Compare the three Y_{ds} values at each of the flow rates and determine the maximum and minimum values. The difference between the maximum and minimum values at each flow rate should be no greater than 0.030. Extra sets of triplicate runs may be made in order to complete this requirement. In addition, the meter coefficients should be between 0.95 and 1.05. If these specifications cannot be met in three sets of successive triplicate runs, the meter is not suitable as a calibration standard and should not be used as such. If these specifications are met, average the three Y_{ds} values at each flow rate resulting in five average meter coefficients, Y_{ds}.

16.1.1.6 Prepare a curve of meter coefficient, Y_{ds}, versus flow rate, Q, for the DGM. This curve shall be used as a reference when the meter is used to calibrate other DGMs and to determine whether recalibration is required.

16.1.2 Standard dry gas meter recalibration.

16.1.2.1 Recalibrate the standard DGM against a wet test meter or spirometer annually or after every 200 hours of operation, whichever comes first. This requirement is valid provided the standard DGM is kept in a laboratory and, if transported, cared for as any other laboratory instrument. Abuse to the standard meter may cause a change in the calibration and will require more frequent recalibrations.

16.1.2.2 As an alternative to full recalibration, a two-point calibration check may be made. Follow the same procedure and equipment arrangement as for a full recalibration, but run the meter at only two flow rates (suggested rates are 14 and 28 liters/min [0.5 and 1.0 cfm]). Calculate the meter coefficients for these two points, and compare the values with the meter calibration curve. If the two coefficients are within 1.5 percent of the calibration curve values at the same flow rates, the meter need not be recalibrated until the next date for a recalibration check.

6.2 Critical orifices as calibration standards. Critical orifices may be used as

60 = Sec/min.
100 = Conversion to percent.

12.3 Average dry gas meter temperature and average orifice pressure drop. See data sheet (Figure 5–2 of Method 5, 40 CFR part 60, appendix A).

12.4 Dry gas volume. Correct the sample volume measured by the dry gas meter to standard conditions (20°C, 760 mm Hg or 68°F, 29.92 in Hg) by using Equation 315–1.

$$V = V_m Y \frac{T_{std}\left(P_{bar} + \frac{\Delta H}{13.6}\right)}{T_m P_{std}} = V = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6}\right)}{T_m} \qquad \text{Eq. 315-1}$$

Where

K_1 = 0.3858 °K/mm Hg for metric units,
= 17.64 °R/in Hg for English units.

Note: Equation 315–1 can be used as written unless the leakage rate observed during any of the mandatory leak checks (i.e., the post-test leak check or leak checks conducted prior to component changes) exceeds L_a. If L_p or L_i exceeds L_a, Equation 315–1 must be modified as follows:

(a) Case I. No component changes made during sampling run. In this case, replace V_m in Equation 315–1 with the expression:

$[V_m—(L_p—L_a)\,\Theta]$

(b) Case II. One or more component changes made during the sampling run. In this case, replace V_m in Equation 315–1 by the expression:

$$\left[V_m - (L_1 - L_a)\Theta_1 - \sum_{i=2}^{n}(L_i - L_a)\Theta_i - (L_p - L_a)\Theta_p\right]$$

and substitute only for those leakage rates (L_i or L_p) which exceed L_a.

12.5 Volume of water vapor condensed.

$$V_{w(std)} = V_{lc}\frac{\rho_w R T_{std}}{M_w P_{std}} = K_2 V_{lc} \qquad \text{Eq. 315-2}$$

Where

K_2 = 0.001333 m³/ml for metric units;
= 0.04706 ft³/ml for English units.

12.6 Moisture content.

$$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}} \qquad \text{Eq. 315-3}$$

Note: In saturated or water droplet-laden gas streams, two calculations of the moisture content of the stack gas shall be made, one from the impinger analysis (Equation 315-3), and a second from the assumption of saturated conditions. The lower of the two values of B_{ws} shall be considered correct. The procedure for determining the moisture content based upon assumption of saturated conditions is given in section 4.0 of Method 4, 40 CFR part 60, appendix A. For the purposes of this method, the average stack gas temperature from Figure 5–2 of Method 5, 40 CFR part 60, appendix A may be used to make this determination, provided that the accuracy of the in-stack temperature sensor is ±1°C (2°F).

12.7 Acetone blank concentration.

$$C_a = \frac{M_a}{V_a \rho_a} \qquad \text{Eq. 315-4}$$

12.8 Acetone wash blank.

$W_a = C_a\ V_{aw}\ \rho a$ *Eq. 315–5*

12.9 Total particulate weight. Determine the total PM catch from the sum of the weights obtained from Containers 1 and 2 less the acetone blank associated with these two containers (see Figure 315–1).

Note: Refer to section 8.5.8 of this method to assist in calculation of results involving two or more filter assemblies or two or more sampling trains.

12.10 Particulate concentration.

$c_s = K_3\ m_n/V_{m(std)}$ Eq. 315–6

where

K = 0.001 g/mg for metric units;
= 0.0154 gr/mg for English units.

12.11 Conversion factors.

From	To	Multiply by
ft³	m³	0.02832
gr	mg	64.80004
gr/ft³	mg/m³	2288.4
mg	g	0.001
gr	lb	1.429×10^{-4}

12.12 Isokinetic variation.

12.12.1 Calculation from raw data.

(overnight desiccation is a common practice). If a third weighing is required and it agrees within ±0.5 mg, then the results of the second weighing should be used. For quality assurance purposes, record and report each individual weighing; if more than three weighings are required, note this in the results for the subsequent MCEM results.

11.2.1.2 MCEM analysis. Transfer the filter and contents quantitatively into a beaker. Add 100 ml of methylene chloride and cover with aluminum foil. Sonicate for 3 minutes then allow to stand for 20 minutes. Set up the filtration apparatus. Decant the solution into a clean Buchner fritted funnel. Immediately pressure filter the solution through the tube into another clean, dry beaker. Continue decanting and pressure filtration until all the solvent is transferred. Rinse the beaker and filter with 10 to 20 ml methylene chloride, decant into the Buchner fritted funnel and pressure filter. Place the beaker on a low-temperature hot plate (maximum 40°C) and slowly evaporate almost to dryness. Transfer the remaining last few milliliters of solution quantitatively from the beaker (using at least three aliquots of methylene chloride rinse) to a tared clean dry aluminum dish and evaporate to complete dryness. Remove from heat once solvent is evaporated. Reweigh the dish after a 30-minute equilibrium in the balance room and determine the weight to the nearest 0.1 mg. Conduct a methylene chloride blank run in an identical fashion.

11.2.2 Container No. 2.

11.2.2.1 PM analysis. Note the level of liquid in the container, and confirm on the analysis sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Measure the liquid in this container either volumetrically to ±1 ml or gravimetrically to 1±0.5 g. Transfer the contents to a tared 250 ml beaker and evaporate to dryness at ambient temperature and pressure. Desiccate for 24 hours, and weigh to a constant weight. Report the results to the nearest 0.1 mg.

11.2.2.2 MCEM analysis. Add 25 ml methylene chloride to the beaker and cover with aluminum foil. Sonicate for 3 minutes then allow to stand for 20 minutes; combine with contents of Container No. 2M and pressure filter and evaporate as described for Container 1 in section 11.2.1.2 of this method.

Notes for MCEM Analysis

1. Light finger pressure only is necessary on 24/40 adaptor. A Chemplast adapter #15055–240 has been found satisfactory.

2. Avoid aluminum dishes made with fluted sides, as these may promote solvent "creep," resulting in possible sample loss.

3. If multiple samples are being run, rinse the Buchner fritted funnel twice between samples with 5 ml solvent using pressure filtration. After the second rinse, continue the flow of air until the glass frit is completely dry. Clean the Buchner fritted funnels thoroughly after filtering five or six samples.

11.2.3 Container No. 3. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. This step may be conducted in the field.

11.2.4 Container 3W (impinger water).

11.2.4.1 MCEM analysis. Transfer the solution into a 1,000 ml separatory funnel quantitatively with methylene chloride washes. Add enough solvent to total approximately 50 ml, if necessary. Shake the funnel for 1 minute, allow the phases to separate, and drain the solvent layer into a 250 ml beaker. Repeat the extraction twice. Evaporate with low heat (less than 40°C) until near dryness. Transfer the remaining few milliliters of solvent quantitatively with small solvent washes into a clean, dry, tared aluminum dish and evaporate to dryness. Remove from heat once solvent is evaporated. Reweigh the dish after a 30-minute equilibration in the balance room and determine the weight to the nearest 0.1 mg.

11.2.5 Container 3S (solvent).

11.2.5.1 MCEM analysis. Transfer the mixed solvent to 250 ml beaker(s). Evaporate and weigh following the procedures detailed for container 3W in section 11.2.4 of this method.

11.2.6 Blank containers. Measure the distilled water, acetone, or methylene chloride in each container either volumetrically or gravimetrically. Transfer the "solvent" to a tared 250 ml beaker, and evaporate to dryness at ambient temperature and pressure. (Conduct a solvent blank on the distilled deionized water blank in an identical fashion to that described in section 11.2.4.1 of this method.) Desiccate for 24 hours, and weigh to a constant weight. Report the results to the nearest 0.1 mg.

Note: The contents of Containers No. 2, 3W, and 3M as well as the blank containers may be evaporated at temperatures higher than ambient. If evaporation is done at an elevated temperature, the temperature must be below the boiling point of the solvent; also, to prevent "bumping," the evaporation process must be closely supervised, and the contents of the beaker must be swirled occasionally to maintain an even temperature. Use extreme care, as acetone and methylene chloride are highly flammable and have a low flash point.

12.0 Data Analysis and Calculations.

12.1 Carry out calculations, retaining at least one extra decimal figure beyond that of the acquired data. Round off figures after the final calculation. Other forms of the equations may be used as long as they give equivalent results.

12.2 Nomenclature.

A_n = Cross-sectional area of nozzle, m^3 (ft^3).

B_{ws} = Water vapor in the gas stream, proportion by volume.

C_a = Acetone blank residue concentration, mg/g.

C_s = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, g/dscm (g/dscf).

I = Percent of isokinetic sampling.

L_a = Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change; equal to 0.00057 m^3/min (0.02 cfm) or 4 percent of the average sampling rate, whichever is less.

L_i = Individual leakage rate observed during the leak check conducted prior to the "i^{th}" component change (i = 1, 2, 3...n), m^3/min (cfm).

L_p = Leakage rate observed during the post-test leak check, m^3/min (cfm).

m_a = Mass of residue of acetone after evaporation, mg.

m_n = Total amount of particulate matter collected, mg.

M_w = Molecular weight of water, 18.0 g/g-mole (18.0 lb/lb-mole).

P_{bar} = Barometric pressure at the sampling site, mm Hg (in Hg).

P_s = Absolute stack gas pressure, mm Hg (in. Hg).

P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).

R = Ideal gas constant, 0.06236 [(mm Hg)(m^3)]/[(°K) (g-mole)] {21.85 [(in. Hg)(ft^3)]/[(°R)(lb-mole)]}.

T_m = Absolute average dry gas meter (DGM) temperature (see Figure 5–2 of Method 5, 40 CFR part 60, appendix A), °K (°R).

T_s = Absolute average stack gas temperature (see Figure 5–2 of Method 5, 40 CFR part 60, appendix A), °K(°R).

T_{std} = Standard absolute temperature, 293°K (528°R).

V_a = Volume of acetone blank, ml.

V_{aw} = Volume of acetone used in wash, ml.

V_t = Volume of methylene chloride blank, ml.

V_{tw} = Volume of methylene chloride used in wash, ml.

V_{lc} = Total volume liquid collected in impingers and silica gel (see Figure 5–3 of Method 5, 40 CFR part 60, appendix A), ml.

V_m = Volume of gas sample as measured by dry gas meter, dcm (dcf).

$V_{m(std)}$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dscm (dscf).

$V_{w(std)}$ = Volume of water vapor in the gas sample, corrected to standard conditions, scm (scf).

V_s = Stack gas velocity, calculated by Equation 2–9 in Method 2, 40 CFR part 60, appendix A, using data obtained from Method 5, 40 CFR part 60, appendix A, m/sec (ft/sec).

W_a = Weight of residue in acetone wash, mg.

Y = Dry gas meter calibration factor.

ΔH = Average pressure differential across the orifice meter (see Figure 5–2 of Method 5, 40 CFR part 60, appendix A), mm H_2O (in H_2O).

ρ_a = Density of acetone, 785.1 mg/ml (or see label on bottle).

ρ_w = Density of water, 0.9982 g/ml (0.002201 lb/ml).

ρ_t = Density of methylene chloride, 1316.8 mg/ml (or see label on bottle).

Θ = Total sampling time, min.

Θ_i = Sampling time interval, from the beginning of a run until the first component change, min.

Θ_l = Sampling time interval, between two successive component changes, beginning with the interval between the first and second changes, min.

Θ_p = Sampling time interval, from the final (n^{th}) component change until the end of the sampling run, min.

13.6 = Specific gravity of mercury.

Section	Quality control measure	Effect
8.4, 10.1–10.6.	Sampling and equipment leak check and calibration.	Ensure accurate measurement of stack gas flow rate, sample volume.

9.2 Volume metering system checks. The following quality control procedures are suggested to check the volume metering system calibration values at the field test site prior to sample collection. These procedures are optional.

9.2.1 Meter orifice check. Using the calibration data obtained during the calibration procedure described in section 10.3 of this method, determine the ΔH_a for the metering system orifice. The ΔH_a is the orifice pressure differential in units of in. H_2O that correlates to 0.75 cfm of air at 528°R and 29.92 in. Hg. The ΔH_a is calculated as follows:

$$\Delta H_a = 0..0319\ \Delta H \frac{T_m \Theta^2}{P_{bar} Y^2 V_m^2}$$

Where

0.0319 = (0.0567 in. Hg/°R)(0.75 cfm)^2;
ΔH = Average pressure differential across the orifice meter, in. H_2O;
T_m = Absolute average DGM temperature, °R;
Θ = Total sampling time, min;
P_{bar} = Barometric pressure, in. Hg;
Y = DGM calibration factor, dimensionless;
V_m = Volume of gas sample as measured by DGM, dcf.

9.2.1.1 Before beginning the field test (a set of three runs usually constitutes a field test), operate the metering system (i.e., pump, volume meter, and orifice) at the ΔH_a pressure differential for 10 minutes. Record the volume collected, the DGM temperature, and the barometric pressure. Calculate a DGM calibration check value, Y_c, as follows:

$$Y_c = \frac{10}{V_m}\left[\frac{0.0319\ T_m}{P_{bar}}\right]^{\frac{1}{2}}$$

Where

Y_c = DGM calibration check value, dimensionless;
10 = Run time, min.

9.2.1.2 Compare the Y_c value with the dry gas meter calibration factor Y to determine that: $0.97\ Y < Y_c < 1.03Y$. If the Y_c value is not within this range, the volume metering system should be investigated before beginning the test.

9.2.2 Calibrated critical orifice. A calibrated critical orifice, calibrated against a wet test meter or spirometer and designed to be inserted at the inlet of the sampling meter box, may be used as a quality control check by following the procedure of section 16.2 of this method.

10.0 Calibration and Standardization.

Note: Maintain a laboratory log of all calibrations.

10.1 Probe nozzle. Probe nozzles shall be calibrated before their initial use in the field. Using a micrometer, measure the ID of the nozzle to the nearest 0.025 mm (0.001 in.). Make three separate measurements using different diameters each time, and obtain the average of the measurements. The difference between the high and low numbers shall not exceed 0.1 mm (0.004 in.). When nozzles become nicked, dented, or corroded, they shall be reshaped, sharpened, and recalibrated before use. Each nozzle shall be permanently and uniquely identified.

10.2 Pitot tube assembly. The Type S pitot tube assembly shall be calibrated according to the procedure outlined in section 10.1 of Method 2, 40 CFR part 60, appendix A.

10.3 Metering system.

10.3.1 Calibration prior to use. Before its initial use in the field, the metering system shall be calibrated as follows: Connect the metering system inlet to the outlet of a wet test meter that is accurate to within 1 percent. Refer to Figure 5–5 of Method 5, 40 CFR part 60, appendix A. The wet test meter should have a capacity of 30 liters/revolution (1 ft^3/rev). A spirometer of 400 liters (14 ft^3) or more capacity, or equivalent, may be used for this calibration, although a wet test meter is usually more practical. The wet test meter should be periodically calibrated with a spirometer or a liquid displacement meter to ensure the accuracy of the wet test meter. Spirometers or wet test meters of other sizes may be used, provided that the specified accuracies of the procedure are maintained. Run the metering system pump for about 15 minutes with the orifice manometer indicating a median reading, as expected in field use, to allow the pump to warm up and to permit the interior surface of the wet test meter to be thoroughly wetted. Then, at each of a minimum of three orifice manometer settings, pass an exact quantity of gas through the wet test meter and note the gas volume indicated by the DGM. Also note the barometric pressure and the temperatures of the wet test meter, the inlet of the DGM, and the outlet of the DGM. Select the highest and lowest orifice settings to bracket the expected field operating range of the orifice. Use a minimum volume of 0.15 m^3 (5 cf) at all orifice settings. Record all the data on a form similar to Figure 5–6 of Method 5, 40 CFR part 60, appendix A, and calculate Y (the DGM calibration factor) and ΔH_a (the orifice calibration factor) at each orifice setting, as shown on Figure 5–6 of Method 5, 40 CFR part 60, appendix A. Allowable tolerances for individual Y and ΔH_a values are given in Figure 5–6 of Method 5, 40 CFR part 60, appendix A. Use the average of the Y values in the calculations in section 12 of this method.

10.3.1.1. Before calibrating the metering system, it is suggested that a leak check be conducted. For metering systems having diaphragm pumps, the normal leak check procedure will not detect leakages within the pump. For these cases the following leak check procedure is suggested: make a 10-minute calibration run at 0.00057 m^3/min (0.02 cfm); at the end of the run, take the difference of the measured wet test meter and DGM volumes; divide the difference by 10 to get the leak rate. The leak rate should not exceed 0.00057 m^3/min (0.02 cfm).

10.3.2 Calibration after use. After each field use, the calibration of the metering system shall be checked by performing three calibration runs at a single, intermediate orifice setting (based on the previous field test) with the vacuum set at the maximum value reached during the test series. To adjust the vacuum, insert a valve between the wet test meter and the inlet of the metering system. Calculate the average value of the DGM calibration factor. If the value has changed by more than 5 percent, recalibrate the meter over the full range of orifice settings, as previously detailed.

Note: Alternative procedures, e.g., rechecking the orifice meter coefficient, may be used, subject to the approval of the Administrator.

10.3.3 Acceptable variation in calibration. If the DGM coefficient values obtained before and after a test series differ by more than 5 percent, either the test series shall be voided or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before or after) gives the lower value of total sample volume.

10.4 Probe heater calibration. Use a heat source to generate air heated to selected temperatures that approximate those expected to occur in the sources to be sampled. Pass this air through the probe at a typical sample flow rate while measuring the probe inlet and outlet temperatures at various probe heater settings. For each air temperature generated, construct a graph of probe heating system setting versus probe outlet temperature. The procedure outlined in APTD–0576 can also be used. Probes constructed according to APTD–0581 need not be calibrated if the calibration curves in APTD–0576 are used. Also, probes with outlet temperature monitoring capabilities do not require calibration.

Note: The probe heating system shall be calibrated before its initial use in the field.

10.5 Temperature sensors. Use the procedure in section 10.3 of Method 2, 40 CFR part 60, appendix A to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers.

10.6 Barometer. Calibrate against a mercury barometer.

11.0 Analytical Procedure.

11.1 Record the data required on a sheet such as the one shown in Figure 315–1 of this method.

11.2 Handle each sample container as follows:

11.2.1 Container No. 1.

11.2.1.1 PM analysis. Leave the contents in the shipping container or transfer the filter and any loose PM from the sample container to a tared glass weighing dish. Desiccate for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh to a constant weight and report the results to the nearest 0.1 mg. For purposes of this section, the term "constant weight" means a difference of no more than 0.5 mg or 1 percent of total weight less tare weight, whichever is greater, between two consecutive weighings, with no less than 6 hours of desiccation time between weighings

a change of trains. In all other situations, the use of two or more trains will be subject to the approval of the Administrator.

Note: When two or more trains are used, separate analyses of the front-half and (if applicable) impinger catches from each train shall be performed, unless identical nozzle sizes were used in all trains, in which case the front-half catches from the individual trains may be combined (as may the impinger catches) and one analysis of the front-half catch and one analysis of the impinger catch may be performed.

8.5.9 At the end of the sample run, turn off the coarse adjust valve, remove the probe and nozzle from the stack, turn off the pump, record the final DGM reading, and then conduct a post-test leak check, as outlined in section 8.4.4 of this method. Also leak-check the pitot lines as described in section 8.1 of Method 2, 40 CFR part 60, appendix A. The lines must pass this leak check in order to validate the velocity head data.

8.6 Calculation of percent isokinetic. Calculate percent isokinetic (see Calculations, section 12.12 of this method) to determine whether a run was valid or another test run should be made. If there was difficulty in maintaining isokinetic rates because of source conditions, consult the Administrator for possible variance on the isokinetic rates.

8.7 Sample recovery.

8.7.1 Proper cleanup procedure begins as soon as the probe is removed from the stack at the end of the sampling period. Allow the probe to cool.

8.7.2 When the probe can be safely handled, wipe off all external PM near the tip of the probe nozzle and place a cap over it to prevent losing or gaining PM. Do not cap off the probe tip tightly while the sampling train is cooling down. This would create a vacuum in the filter holder, thus drawing water from the impingers into the filter holder.

8.7.3 Before moving the sample train to the cleanup site, remove the probe from the sample train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the filter inlet where the probe was fastened and cap it. Remove the umbilical cord from the last impinger and cap the impinger. If a flexible line is used between the first impinger or condenser and the filter holder, disconnect the line at the filter holder and let any condensed water or liquid drain into the impingers or condenser. After wiping off the silicone grease, cap off the filter holder outlet and impinger inlet. Ground-glass stoppers, plastic caps, or serum caps may be used to close these openings.

8.7.4 Transfer the probe and filter-impinger assembly to the cleanup area. This area should be clean and protected from the wind so that the chances of contaminating or losing the sample will be minimized.

8.7.5 Save a portion of the acetone and methylene chloride used for cleanup as blanks. Take 200 ml of each solvent directly from the wash bottle being used and place it in glass sample containers labeled "acetone blank" and "methylene chloride blank," respectively.

8.7.6 Inspect the train prior to and during disassembly and note any abnormal conditions. Treat the samples as follows:

8.7.6.1 Container No. 1. Carefully remove the filter from the filter holder, and place it in its identified petri dish container. Use a pair of tweezers and/or clean disposable surgical gloves to handle the filter. If it is necessary to fold the filter, do so such that the PM cake is inside the fold. Using a dry nylon bristle brush and/or a sharp-edged blade, carefully transfer to the petri dish any PM and/or filter fibers that adhere to the filter holder gasket. Seal the container.

8.7.6.2 Container No. 2. Taking care to see that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover PM or any condensate from the probe nozzle, probe fitting, probe liner, and front half of the filter holder by washing these components with acetone and placing the wash in a glass container. Perform the acetone rinse as follows:

8.7.6.2.1 Carefully remove the probe nozzle and clean the inside surface by rinsing with acetone from a wash bottle and brushing with a nylon bristle brush. Brush until the acetone rinse shows no visible particles, after which make a final rinse of the inside surface with acetone.

8.7.6.2.2 Brush and rinse the inside parts of the Swagelok fitting with acetone in a similar way until no visible particles remain.

8.7.6.2.3 Rinse the probe liner with acetone by tilting and rotating the probe while squirting acetone into its upper end so that all inside surfaces are wetted with acetone. Let the acetone drain from the lower end into the sample container. A funnel (glass or polyethylene) may be used to aid in transferring liquid washes to the container. Follow the acetone rinse with a probe brush. Hold the probe in an inclined position, squirt acetone into the upper end as the probe brush is being pushed with a twisting action through the probe, hold a sample container under the lower end of the probe, and catch any acetone and PM that is brushed from the probe. Run the brush through the probe three times or more until no visible PM is carried out with the acetone or until none remains in the probe liner on visual inspection. With stainless steel or other metal probes, run the brush through in the above-described manner at least six times, since metal probes have small crevices in which PM can be entrapped. Rinse the brush with acetone and quantitatively collect these washings in the sample container. After the brushing, make a final acetone rinse of the probe as described above.

8.7.6.2.4 It is recommended that two people clean the probe to minimize sample losses. Between sampling runs, keep brushes clean and protected from contamination.

8.7.6.2.5 After ensuring that all joints have been wiped clean of silicone grease, clean the inside of the front half of the filter holder by rubbing the surfaces with a nylon bristle brush and rinsing with acetone. Rinse each surface three times or more if needed to remove visible particulate. Make a final rinse of the brush and filter holder. Carefully rinse out the glass cyclone also (if applicable).

8.7.6.2.6 After rinsing the nozzle, probe, and front half of the filter holder with acetone, repeat the entire procedure with methylene chloride and save in a separate No. 2M container.

8.7.6.2.7 After acetone and methylene chloride washings and PM have been collected in the proper sample containers, tighten the lid on the sample containers so that acetone and methylene chloride will not leak out when it is shipped to the laboratory. Mark the height of the fluid level to determine whether leakage occurs during transport. Label each container to identify clearly its contents.

8.7.6.3 Container No. 3. Note the color of the indicating silica gel to determine whether it has been completely spent, and make a notation of its condition. Transfer the silica gel from the fourth impinger to its original container and seal the container. A funnel may make it easier to pour the silica gel without spilling. A rubber policeman may be used as an aid in removing the silica gel from the impinger. It is not necessary to remove the small amount of dust particles that may adhere to the impinger wall and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, follow the procedure for Container No. 3 in section 11.2.3 of this method.

8.7.6.4 Impinger water. Treat the impingers as follows:

8.7.6.4.1 Make a notation of any color or film in the liquid catch. Measure the liquid that is in the first three impingers to within 1 ml by using a graduated cylinder or by weighing it to within 0.5 g by using a balance (if one is available). Record the volume or weight of liquid present. This information is required to calculate the moisture content of the effluent gas.

8.7.6.4.2 Following the determination of the volume of liquid present, rinse the back half of the train with water, add it to the impinger catch, and store it in a container labeled 3W (water).

8.7.6.4.3 Following the water rinse, rinse the back half of the train with acetone to remove the excess water to enhance subsequent organic recovery with methylene chloride and quantitatively recover to a container labeled 3S (solvent) followed by at least three sequential rinsings with aliquots of methylene chloride. Quantitatively recover to the same container labeled 3S. Record separately the amount of both acetone and methylene chloride used to the nearest 1 ml or 0.5g.

Note: Because the subsequent analytical finish is gravimetric, it is okay to recover both solvents to the same container. This would not be recommended if other analytical finishes were required.

8.8 Sample transport. Whenever possible, containers should be shipped in such a way that they remain upright at all times.

9.0 Quality Control.

9.1 Miscellaneous quality control measures.

only the outer portion (see APTD–0576) to avoid possibility of contamination by the silicone grease. Subject to the approval of the Administrator, a glass cyclone may be used between the probe and filter holder when the total particulate catch is expected to exceed 100 mg or when water droplets are present in the stack gas.

8.3.5 Place crushed ice around the impingers.

8.4 Leak-check procedures.

8.4.1 Leak check of metering system shown in Figure 5-1 of Method 5, 40 CFR part 60, appendix A. That portion of the sampling train from the pump to the orifice meter should be leak-checked prior to initial use and after each shipment. Leakage after the pump will result in less volume being recorded than is actually sampled. The following procedure is suggested (see Figure 5–2 of Method 5, 40 CFR part 60, appendix A): Close the main valve on the meter box. Insert a one-hole rubber stopper with rubber tubing attached into the orifice exhaust pipe. Disconnect and vent the low side of the orifice manometer. Close off the low side orifice tap. Pressurize the system to 13 to 18 cm (5 to 7 in.) water column by blowing into the rubber tubing. Pinch off the tubing, and observe the manometer for 1 minute. A loss of pressure on the manometer indicates a leak in the meter box; leaks, if present, must be corrected.

8.4.2 Pretest leak check. A pretest leak-check is recommended but not required. If the pretest leak-check is conducted, the following procedure should be used.

8.4.2.1 After the sampling train has been assembled, turn on and set the filter and probe heating systems to the desired operating temperatures. Allow time for the temperatures to stabilize. If a Viton A O-ring or other leak-free connection is used in assembling the probe nozzle to the probe liner, leak-check the train at the sampling site by plugging the nozzle and pulling a 380 mm (15 in.) Hg vacuum.

Note: A lower vacuum may be used, provided that it is not exceeded during the test.

8.4.2.2 If an asbestos string is used, do not connect the probe to the train during the leak check. Instead, leak-check the train by first plugging the inlet to the filter holder (cyclone, if applicable) and pulling a 380 mm (15 in.) Hg vacuum. (See NOTE in section 8.4.2.1 of this method). Then connect the probe to the train and perform the leak check at approximately 25 mm (1 in.) Hg vacuum; alternatively, the probe may be leak-checked with the rest of the sampling train, in one step, at 380 mm (15 in.) Hg vacuum. Leakage rates in excess of 4 percent of the average sampling rate or 0.00057 m^3/min (0.02 cfm), whichever is less, are unacceptable.

8.4.2.3 The following leak check instructions for the sampling train described in APTD–0576 and APTD–0581 may be helpful. Start the pump with the bypass valve fully open and the coarse adjust valve completely closed. Partially open the coarse adjust valve and slowly close the bypass valve until the desired vacuum is reached. *Do not* reverse the direction of the bypass valve, as this will cause water to back up into the filter holder. If the desired vacuum is exceeded, either leak-check at this higher vacuum or end the leak check as shown below and start over.

8.4.2.4 When the leak check is completed, first slowly remove the plug from the inlet to the probe, filter holder, or cyclone (if applicable) and immediately turn off the vacuum pump. This prevents the water in the impingers from being forced backward into the filter holder and the silica gel from being entrained backward into the third impinger.

8.4.3 Leak checks during sample run. If, during the sampling run, a component (e.g., filter assembly or impinger) change becomes necessary, a leak check shall be conducted immediately before the change is made. The leak check shall be done according to the procedure outlined in section 8.4.2 of this method, except that it shall be done at a vacuum equal to or greater than the maximum value recorded up to that point in the test. If the leakage rate is found to be no greater than 0.00057 m^3/min (0.02 cfm) or 4 percent of the average sampling rate (whichever is less), the results are acceptable, and no correction will need to be applied to the total volume of dry gas metered; if, however, a higher leakage rate is obtained, either record the leakage rate and plan to correct the sample volume as shown in section 12.3 of this method or void the sample run.

Note: Immediately after component changes, leak checks are optional; if such leak checks are done, the procedure outlined in section 8.4.2 of this method should be used.

8.4.4 Post-test leak check. A leak check is mandatory at the conclusion of each sampling run. The leak check shall be performed in accordance with the procedures outlined in section 8.4.2 of this method, except that it shall be conducted at a vacuum equal to or greater than the maximum value reached during the sampling run. If the leakage rate is found to be no greater than 0.00057 m^3/min (0.02 cfm) or 4 percent of the average sampling rate (whichever is less), the results are acceptable, and no correction need be applied to the total volume of dry gas metered. If, however, a higher leakage rate is obtained, either record the leakage rate and correct the sample volume, as shown in section 12.4 of this method, or void the sampling run.

8.5 Sampling train operation. During the sampling run, maintain an isokinetic sampling rate (within 10 percent of true isokinetic unless otherwise specified by the Administrator) and a temperature around the filter of 120 14°C (248 25°F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator.

8.5.1 For each run, record the data required on a data sheet such as the one shown in Figure 5–2 of Method 5, 40 CFR part 60, appendix A. Be sure to record the initial reading. Record the DGM readings at the beginning and end of each sampling time increment, when changes in flow rates are made, before and after each leak-check, and when sampling is halted. Take other readings indicated by Figure 5–2 of Method 5, 40 CFR part 60, appendix A at least once at each sample point during each time increment and additional readings when significant changes (20 percent variation in velocity head readings) necessitate additional adjustments in flow rate. Level and zero the manometer. Because the manometer level and zero may drift due to vibrations and temperature changes, make periodic checks during the traverse.

8.5.2 Clean the portholes prior to the test run to minimize the chance of sampling deposited material. To begin sampling, remove the nozzle cap and verify that the filter and probe heating systems are up to temperature and that the pitot tube and probe are properly positioned. Position the nozzle at the first traverse point with the tip pointing directly into the gas stream. Immediately start the pump and adjust the flow to isokinetic conditions. Nomographs are available, which aid in the rapid adjustment of the isokinetic sampling rate without excessive computations. These nomographs are designed for use when the Type S pitot tube coefficient (C_p) is 0.85 # 0.02 and the stack gas equivalent density (dry molecular weight) is 29 ± 4. APTD–0576 details the procedure for using the nomographs. If C_p and M_d are outside the above-stated ranges, do not use the nomographs unless appropriate steps (see Reference 7 in section 17.0 of this method) are taken to compensate for the deviations.

8.5.3 When the stack is under significant negative pressure (height of impinger stem), close the coarse adjust valve before inserting the probe into the stack to prevent water from backing into the filter holder. If necessary, the pump may be turned on with the coarse adjust valve closed.

8.5.4 When the probe is in position, block off the openings around the probe and porthole to prevent unrepresentative dilution of the gas stream.

8.5.5 Traverse the stack cross-section, as required by Method 1, 40 CFR part 60, appendix A or as specified by the Administrator, being careful not to bump the probe nozzle into the stack walls when sampling near the walls or when removing or inserting the probe through the portholes; this minimizes the chance of extracting deposited material.

8.5.6 During the test run, make periodic adjustments to keep the temperature around the filter holder at the proper level; add more ice and, if necessary, salt to maintain a temperature of less than 20°C (68°F) at the condenser/silica gel outlet. Also, periodically check the level and zero of the manometer.

8.5.7 If the pressure drop across the filter becomes too high, making isokinetic sampling difficult to maintain, the filter may be replaced in the midst of the sample run. It is recommended that another complete filter assembly be used rather than attempting to change the filter itself. Before a new filter assembly is installed, conduct a leak check (see section 8.4.3 of this method). The total PM weight shall include the summation of the filter assembly catches.

8.5.8 A single train shall be used for the entire sample run, except in cases where simultaneous sampling is required in two or more separate ducts or at two or more different locations within the same duct, or in cases where equipment failure necessitates

6.3.7 Temperature sensor. To measure the temperature of the laboratory environment.

6.3.8 Buchner fritted funnel. 30 ml size, fine (<50 micron)-porosity fritted glass.

6.3.9 Pressure filtration apparatus.

6.3.10 Aluminum dish. Flat bottom, smooth sides, and flanged top, 18 mm deep and with an inside diameter of approximately 60 mm.

7.0 Reagents and Standards.

7.1 Sample collection. The following reagents are required for sample collection:

7.1.1 Filters. Glass fiber filters, without organic binder, exhibiting at least 99.95 percent efficiency (<0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency test shall be conducted in accordance with ASTM Method D 2986–95A (incorporated by reference in § 63.841 of this part). Test data from the supplier's quality control program are sufficient for this purpose. In sources containing SO_2 or SO_3, the filter material must be of a type that is unreactive to SO_2 or SO_3. Reference 10 in section 17.0 of this method may be used to select the appropriate filter.

7.1.2 Silica gel. Indicating type, 6 to 16 mesh. If previously used, dry at 175°C (350°F) for 2 hours. New silica gel may be used as received. Alternatively, other types of desiccants (equivalent or better) may be used, subject to the approval of the Administrator.

7.1.3 Water. When analysis of the material caught in the impingers is required, deionized distilled water shall be used. Run blanks prior to field use to eliminate a high blank on test samples.

7.1.4 Crushed ice.

7.1.5 Stopcock grease. Acetone-insoluble, heat-stable silicone grease. This is not necessary if screw-on connectors with Teflon" sleeves, or similar, are used. Alternatively, other types of stopcock grease may be used, subject to the approval of the Administrator. [Caution: Many stopcock greases are methylene chloride-soluble. Use sparingly and carefully remove prior to recovery to prevent contamination of the MCEM analysis.]

7.2 Sample recovery. The following reagents are required for sample recovery:

7.2.1 Acetone. Acetone with blank values < 1 ppm, by weight residue, is required. Acetone blanks may be run prior to field use, and only acetone with low blank values may be used. In no case shall a blank value of greater than 1E–06 of the weight of acetone used be subtracted from the sample weight.

Note: This is more restrictive than Method 5, 40 CFR part 60, appendix A. At least one vendor (Supelco Incorporated located in Bellefonte, Pennsylvania) lists <1 mg/l as residue for its Environmental Analysis Solvents.

7.2.2 Methylene chloride. Methylene chloride with a blank value <1.5 ppm, by weight, residue. Methylene chloride blanks may be run prior to field use, and only methylene chloride with low blank values may be used. In no case shall a blank value of greater than 1.6E–06 of the weight of methylene chloride used be subtracted from the sample weight.

Note: A least one vendor quotes <1 mg/l for Environmental Analysis Solvents-grade methylene chloride.

7.3 Sample analysis. The following reagents are required for sample analysis:

7.3.1 Acetone. Same as in section 7.2.1 of this method.

7.3.2 Desiccant. Anhydrous calcium sulfate, indicating type. Alternatively, other types of desiccants may be used, subject to the approval of the Administrator.

7.3.3 Methylene chloride. Same as in section 7.2.2 of this method.

8.0 Sample Collection, Preservation, Storage, and Transport.

Note: The complexity of this method is such that, in order to obtain reliable results, testers should be trained and experienced with the test procedures.

8.1l Pretest preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD–0576.

8.1.1 Weigh several 200 g to 300 g portions of silica gel in airtight containers to the nearest 0.5 g. Record on each container the total weight of the silica gel plus container. As an alternative, the silica gel need not be preweighed but may be weighed directly in its impinger or sampling holder just prior to train assembly.

8.1.2 A batch of glass fiber filters, no more than 50 at a time, should placed in a soxhlet extraction apparatus and extracted using methylene chloride for at least 16 hours. After extraction, check filters visually against light for irregularities, flaws, or pinhole leaks. Label the shipping containers (glass or plastic petri dishes), and keep the filters in these containers at all times except during sampling and weighing.

8.1.3 Desiccate the filters at 20 ± 5.6°C (68 ±10°F) and ambient pressure for at least 24 hours and weigh at intervals of at least 6 hours to a constant weight, i.e., <0.5 mg change from previous weighing; record results to the nearest 0.1 mg. During each weighing the filter must not be exposed to the laboratory atmosphere for longer than 2 minutes and a relative humidity above 50 percent. Alternatively (unless otherwise specified by the Administrator), the filters may be oven-dried at 104°C (220°F) for 2 to 3 hours, desiccated for 2 hours, and weighed. Procedures other than those described, which account for relative humidity effects, may be used, subject to the approval of the Administrator.

8.2 Preliminary determinations.

8.2.1 Select the sampling site and the minimum number of sampling points according to Method 1, 40 CFR part 60, appendix A or as specified by the Administrator. Determine the stack pressure, temperature, and the range of velocity heads using Method 2, 40 CFR part 60, appendix A; it is recommended that a leak check of the pitot lines (see section 8.1 of Method 2, 40 CFR part 60, appendix A) be performed. Determine the moisture content using Approximation Method 4 (section 1.2 of Method 4, 40 CFR part 60, appendix A) or its alternatives to make isokinetic sampling rate settings. Determine the stack gas dry molecular weight, as described in section 8.6 of Method 2, 40 CFR part 60, appendix A; if integrated Method 3 sampling is used for molecular weight determination, the integrated bag sample shall be taken simultaneously with, and for the same total length of time as, the particulate sample run.

8.2.2 Select a nozzle size based on the range of velocity heads such that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates. During the run, do not change the nozzle size. Ensure that the proper differential pressure gauge is chosen for the range of velocity heads encountered (see section 8.2 of Method 2, 40 CFR part 60, appendix A).

8.2.3 Select a suitable probe liner and probe length such that all traverse points can be sampled. For large stacks, consider sampling from opposite sides of the stack to reduce the required probe length.

8.2.4 Select a total sampling time greater than or equal to the minimum total sampling time specified in the test procedures for the specific industry such that: (1) The sampling time per point is not less than 2 minutes (or some greater time interval as specified by the Administrator); and (2) the sample volume taken (corrected to standard conditions) will exceed the required minimum total gas sample volume. The latter is based on an approximate average sampling rate.

8.2.5 The sampling time at each point shall be the same. It is recommended that the number of minutes sampled at each point be an integer or an integer plus one-half minute, in order to eliminate timekeeping errors.

8.2.6 In some circumstances (e.g., batch cycles), it may be necessary to sample for shorter times at the traverse points and to obtain smaller gas sample volumes. In these cases, the Administrator's approval must first be obtained.

8.3 Preparation of sampling train.

8.3.1 During preparation and assembly of the sampling train, keep all openings where contamination can occur covered until just prior to assembly or until sampling is about to begin. Place 100 ml of water in each of the first two impingers, leave the third impinger empty, and transfer approximately 200 to 300 g of preweighed silica gel from its container to the fourth impinger. More silica gel may be used, but care should be taken to ensure that it is not entrained and carried out from the impinger during sampling. Place the container in a clean place for later use in the sample recovery. Alternatively, the weight of the silica gel plus impinger may be determined to the nearest 0.5 g and recorded.

8.3.2 Using a tweezer or clean disposable surgical gloves, place a labeled (identified) and weighed filter in the filter holder. Be sure that the filter is properly centered and the gasket properly placed so as to prevent the sample gas stream from circumventing the filter. Check the filter for tears after assembly is completed.

8.3.3 When glass liners are used, install the selected nozzle using a Viton A O-ring when stack temperatures are less than 260°C (500°F) and an asbestos string gasket when temperatures are higher. See APTD–0576 for details. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point.

8.3.4 Set up the train as in Figure 5-1 of Method 5, 40 CFR part 60, appendix A, using (if necessary) a very light coat of silicone grease on all ground glass joints, greasing

sizes range from 0.32 to 1.27 cm (⅛ to ½ in.) inside diameter (ID) in increments of 0.16 cm (1/16 in.). Larger nozzle sizes are also available if higher volume sampling trains are used. Each nozzle shall be calibrated according to the procedures outlined in section 10.0 of this method.

6.1.1.2 Probe liner. Borosilicate or quartz glass tubing with a heating system capable of maintaining a probe gas temperature at the exit end during sampling of 120±14°C (248±25°F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. Because the actual temperature at the outlet of the probe is not usually monitored during sampling, probes constructed according to APTD–0581 and using the calibration curves of APTD–0576 (or calibrated according to the procedure outlined in APTD–0576) will be considered acceptable. Either borosilicate or quartz glass probe liners may be used for stack temperatures up to about 480°C (900°F); quartz liners shall be used for temperatures between 480 and 900°C (900 and 1,650°F). Both types of liners may be used at higher temperatures than specified for short periods of time, subject to the approval of the Administrator. The softening temperature for borosilicate glass is 820°C (1,500°F) and for quartz glass it is 1,500°C (2,700°F).

6.1.1.3 Pitot tube. Type S, as described in section 6.1 of Method 2, 40 CFR part 60, appendix A, or other device approved by the Administrator. The pitot tube shall be attached to the probe (as shown in Figure 5–1 of Method 5, 40 CFR part 60, appendix A) to allow constant monitoring of the stack gas velocity. The impact (high pressure) opening plane of the pitot tube shall be even with or above the nozzle entry plane (see Method 2, Figure 2–6b, 40 CFR part 60, appendix A) during sampling. The Type S pitot tube assembly shall have a known coefficient, determined as outlined in section 10.0 of Method 2, 40 CFR part 60, appendix A.

6.1.1.4 Differential pressure gauge. Inclined manometer or equivalent device (two), as described in section 6.2 of Method 2, 40 CFR part 60, appendix A. One manometer shall be used for velocity head (Dp) readings, and the other, for orifice differential pressure readings.

6.1.1.5 Filter holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe (or cyclone, if used).

6.1.1.6 Filter heating system. Any heating system capable of maintaining a temperature around the filter holder of 120±14°C (248±25°F) during sampling, or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. Alternatively, the tester may opt to operate the equipment at a temperature lower than that specified. A temperature gauge capable of measuring temperature to within 3°C (5.4°F) shall be installed so that the temperature around the filter holder can be regulated and monitored during sampling. Heating systems other than the one shown in APTD–0581 may be used.

6.1.1.7 Temperature sensor. A temperature sensor capable of measuring temperature to within ±3°C (5.4°F) shall be installed so that the sensing tip of the temperature sensor is in direct contact with the sample gas, and the temperature around the filter holder can be regulated and monitored during sampling.

6.1.1.8 Condenser. The following system shall be used to determine the stack gas moisture content: four glass impingers connected in series with leak-free ground glass fittings. The first, third, and fourth impingers shall be of the Greenburg-Smith design, modified by replacing the tip with a 1.3 cm (1/2 in.) ID glass tube extending to about 1.3 cm (1/2 in.) from the bottom of the flask. The second impinger shall be of the Greenburg-Smith design with the standard tip. The first and second impingers shall contain known quantities of water (section 8.3.1 of this method), the third shall be empty, and the fourth shall contain a known weight of silica gel or equivalent desiccant. A temperature sensor capable of measuring temperature to within 1°C (2°F) shall be placed at the outlet of the fourth impinger for monitoring.

6.1.1.9 Metering system. Vacuum gauge, leak-free pump, temperature sensors capable of measuring temperature to within 3°C (5.4°F), dry gas meter (DGM) capable of measuring volume to within 2 percent, and related equipment, as shown in Figure 5–1 of Method 5, 40 CFR part 60, appendix A. Other metering systems capable of maintaining sampling rates within 10 percent of isokinetic and of determining sample volumes to within 2 percent may be used, subject to the approval of the Administrator. When the metering system is used in conjunction with a pitot tube, the system shall allow periodic checks of isokinetic rates.

6.1.1.10 Sampling trains using metering systems designed for higher flow rates than that described in APTD–0581 or APTD–0576 may be used provided that the specifications of this method are met.

6.1.2 Barometer. Mercury, aneroid, or other barometer capable of measuring atmospheric pressure to within 2.5 mm (0.1 in.) Hg.

Note: The barometric reading may be obtained from a nearby National Weather Service station. In this case, the station value (which is the absolute barometric pressure) shall be requested and an adjustment for elevation differences between the weather station and sampling point shall be made at a rate of minus 2.5 mm (0.1 in) Hg per 30 m (100 ft) elevation increase or plus 2.5 mm (0.1 in) Hg per 30 m (100 ft) elevation decrease.

6.1.3 Gas density determination equipment. Temperature sensor and pressure gauge, as described in sections 6.3 and 6.4 of Method 2, 40 CFR part 60, appendix A, and gas analyzer, if necessary, as described in Method 3, 40 CFR part 60, appendix A. The temperature sensor shall, preferably, be permanently attached to the pitot tube or sampling probe in a fixed configuration, such that the tip of the sensor extends beyond the leading edge of the probe sheath and does not touch any metal. Alternatively, the sensor may be attached just prior to use in the field. Note, however, that if the temperature sensor is attached in the field, the sensor must be placed in an interference-free arrangement with respect to the Type S pitot tube openings (see Method 2, Figure 2–1, 40 CFR part 60, appendix A). As a second alternative, if a difference of not more than 1 percent in the average velocity measurement is to be introduced, the temperature sensor need not be attached to the probe or pitot tube. (This alternative is subject to the approval of the Administrator.)

6.2 Sample recovery. The following items are required for sample recovery:

6.2.1 Probe-liner and probe-nozzle brushes. Nylon or Teflon® bristle brushes with stainless steel wire handles. The probe brush shall have extensions (at least as long as the probe) constructed of stainless steel, nylon, Teflon®, or similarly inert material. The brushes shall be properly sized and shaped to brush out the probe liner and nozzle.

6.2.2 Wash bottles. Glass wash bottles are recommended. Polyethylene or tetrafluoroethylene (TFE) wash bottles may be used, but they may introduce a positive bias due to contamination from the bottle. It is recommended that acetone not be stored in polyethylene or TFE bottles for longer than a month.

6.2.3 Glass sample storage containers. Chemically resistant, borosilicate glass bottles, for acetone and methylene chloride washes and impinger water, 500 ml or 1,000 ml. Screw-cap liners shall either be rubber-backed Teflon® or shall be constructed so as to be leak-free and resistant to chemical attack by acetone or methylene chloride. (Narrow-mouth glass bottles have been found to be less prone to leakage.) Alternatively, polyethylene bottles may be used.

6.2.4 Petri dishes. For filter samples, glass, unless otherwise specified by the Administrator.

6.2.5 Graduated cylinder and/or balance. To measure condensed water, acetone wash and methylene chloride wash used during field recovery of the samples, to within 1 ml or 1 g. Graduated cylinders shall have subdivisions no greater than 2 ml. Most laboratory balances are capable of weighing to the nearest 0.5 g or less. Any such balance is suitable for use here and in section 6.3.4 of this method.

6.2.6 Plastic storage containers. Air-tight containers to store silica gel.

6.2.7 Funnel and rubber policeman. To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

6.2.8 Funnel. Glass or polyethylene, to aid in sample recovery.

6.3 Sample analysis. The following equipment is required for sample analysis:

6.3.1 Glass or Teflon® weighing dishes.

6.3.2 Desiccator. It is recommended that fresh desiccant be used to minimize the chance for positive bias due to absorption of organic material during drying.

6.3.3 Analytical balance. To measure to within 0.1 mg.

6.3.4 Balance. To measure to within 0.5 g.

6.3.5 Beakers. 250 ml.

6.3.6 Hygrometer. To measure the relative humidity of the laboratory environment.

APPENDIX A TO SUBPART LL—APPLICABILITY OF GENERAL PROVISIONS

[40 CFR part 63, subpart A to Subpart LL]

General provisions citation	Requirement	Applies to subpart LL	Comment
63.1(c)(2)		No	All are major sources.
63.2 Definition of "reconstruction"		No	Subpart LL defines "reconstruction."
63.6(c)(1)	Compliance date for existing sources.	No	Subpart LL specifies compliance date for existing sources.
63.6(h)	Opacity/VE standards	Only in § 63.845	Opacity standards applicable only when incorporating the NSPS requirements under § 63.845.
63.8(c)(4)–(c)(8)	CMS operation and maintenance	No	Subpart LL does not require COMS/CMS or CMS performance specifications.
63.8(d)	Quality control	No	Subpart LL does not require CMS or CMS performance evaluation.
63.8(e)	Performance evaluation for CMS	No	
63.9(e)	Notification of performance test	No	Subpart LL specifies notification of performance tests.
63.9(f)	Notification of VE or opacity test	Only in § 63.845	Notification is required only when incorporating the NSPS requirements under § 63.845.
63.9(g)	Additional CMS notification	No	
63.10(d)(2)	Performance test reports	No	Subpart LL specifies performance test reporting.
63.10(d)(3)	Reporting VE/opacity observations	Only in § 63.845	Reporting is required only when incorporating the NSPS requirements under § 63.845.
63.10(e)(2)	Reporting performance evaluations	No	Subpart LL does not require performance evaluation for CMS.
63.11(a)–(b)	Control device requirements	No	Flares not applicable.

9. Appendix A to part 63 is amended by adding, in numerical order, Method 315 to read as follows:

Appendix A to Part 63—Test Methods

* * * * *

Method 315—Determination of Particulate and Methylene Chloride Extractable Matter (MCEM) From Selected Sources at Primary Aluminum Production Facilities

Note: This method does not include all of the specifications (e.g., equipment and supplies) and procedures (e.g., sampling and analytical) essential to its performance. Some material is incorporated by reference from other methods in this part. Therefore, to obtain reliable results, persons using this method should have a thorough knowledge of at least the following additional test methods: Method 1, Method 2, Method 3, and Method 5 of 40 CFR part 60, appendix A.

1.0 Scope and Application.

1.1 Analytes. Particulate matter (PM). No CAS number assigned. Methylene chloride extractable matter (MCEM). No CAS number assigned.

1.2 Applicability. This method is applicable for the simultaneous determination of PM and MCEM when specified in an applicable regulation. This method was developed by consensus with the Aluminum Association and the U.S. Environmental Protection Agency (EPA) and has limited precision estimates for MCEM; it should have similar precision to Method 5 for PM in 40 CFR part 60, appendix A since the procedures are similar for PM.

1.3 Data quality objectives. Adherence to the requirements of this method will enhance the quality of the data obtained from air pollutant sampling methods.

2.0 Summary of Method.

Particulate matter and MCEM are withdrawn isokinetically from the source. PM is collected on a glass fiber filter maintained at a temperature in the range of 120 ± 14 °C (248 ± 25 °F) or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. The PM mass, which includes any material that condenses on the probe and is subsequently removed in an acetone rinse or on the filter at or above the filtration temperature, is determined gravimetrically after removal of uncombined water. MCEM is then determined by adding a methylene chloride rinse of the probe and filter holder, extracting the condensable hydrocarbons collected in the impinger water, adding an acetone rinse followed by a methylene chloride rinse of the sampling train components after the filter and before the silica gel impinger, and determining residue gravimetrically after evaporating the solvents.

3.0 Definitions. [Reserved]

4.0 Interferences. [Reserved]

5.0 Safety.

This method may involve hazardous materials, operations, and equipment. This method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

6.0 Equipment and Supplies.

Note: Mention of trade names or specific products does not constitute endorsement by the EPA.

6.1 Sample collection. The following items are required for sample collection:

6.1.1 Sampling train. A schematic of the sampling train used in this method is shown in Figure 5–1, Method 5, 40 CFR part 60, appendix A. Complete construction details are given in APTD–0581 (Reference 2 in section 17.0 of this method); commercial models of this train are also available. For changes from APTD–0581 and for allowable modifications of the train shown in Figure 5–1, Method 5, 40 CFR part 60, appendix A, see the following subsections.

Note: The operating and maintenance procedures for the sampling train are described in APTD–0576 (Reference 3 in section 17.0 of this method). Since correct usage is important in obtaining valid results, all users should read APTD–0576 and adopt the operating and maintenance procedures outlined in it, unless otherwise specified herein. The use of grease for sealing sampling train components is not recommended because many greases are soluble in methylene chloride. The sampling train consists of the following components:

6.1.1.1 Probe nozzle. Glass or glass lined with sharp, tapered leading edge. The angle of taper shall be ≤30°, and the taper shall be on the outside to preserve a constant internal diameter. The probe nozzle shall be of the button-hook or elbow design, unless otherwise specified by the Administrator. Other materials of construction may be used, subject to the approval of the Administrator. A range of nozzle sizes suitable for isokinetic sampling should be available. Typical nozzle

records of information and data required by § 63.10(c);

(xiii) Records documenting the corrective actions taken when the limit(s) for an operating parameter established under § 63.847(h) were exceeded, when visible emissions indicating abnormal operation were observed from a control device stack during a daily inspection required under § 63.848(g), or when a problem was detected during the daily inspection of a wet roof scrubber for potline secondary control required in § 63.848(f)(5)(ii);

(xiv) Records documenting any POM data that are invalidated due to the installation and startup of a cathode; and

(xv) Records documenting the portion of TF that is measured as particulate matter and the portion that is measured as gaseous when the particulate and gaseous fractions are quantified separately using an approved test method.

§ 63.851 Regulatory authority review procedures.

(a) The applicable regulatory authority shall notify the owner or operator in writing of the need for additional time to review the submissions in paragraphs (a)(1) through (a)(5) of this section or of approval or intent to deny approval of the submissions in paragraphs (a)(1) through (a)(5) of this section within 60 calendar days after receipt of sufficient information to evaluate the submission. The 60-day period begins after the owner or operator has been notified that the submission is complete.

(1) The test plan in § 63.847(b);

(2) Request to change limits for operating parameters in § 63.847(h)(3);

(3) Request for similar potline monitoring in § 63.848(d)(5);

(4) Request for reduced sampling frequency in § 63.848(e); and

(5) Request for an alternative method in § 63.849(e)(2).

(b) The applicable regulatory authority shall notify the owner or operator in writing whether the submission is complete within 30 calendar days of receipt of the original submission or within 30 days of receipt of any supplementary information that is submitted. When a submission is incomplete, the applicable regulatory authority shall specify the information needed to complete the submission and shall give the owner or operator 30 calendar days after receipt of the notification to provide the information.

§ 63.852 Applicability of general provisions.

The requirements of the general provisions in subpart A of this part that are not applicable to the owner or operator subject to the requirements of this subpart are shown in appendix A of this subpart.

§ 63.853 Delegation of authority.

In delegating implementation and enforcement authority to a State under section 112(d) of the Act, all authorities are transferred to the State.

§§ 63.854–63.859 [Reserved]

TABLE 1 TO SUBPART LL—POTLINE TF LIMITS FOR EMISSION AVERAGING

Type	Monthly TF limit (lb/ton) [for given number of potlines]						
	2 lines	3 lines	4 lines	5 lines	6 lines	7 lines	8 lines
CWPB1	1.7	1.6	1.5	1.5	1.4	1.4	1.
CWPB2	2.9	2.8	2.7	2.7	2.6	2.6	2.
CWPB3	2.3	2.2	2.2	2.1	2.1	2.1	2.
VSS1	2	1.9	1.8	1.7	1.7	1.7	1.
VSS2	2.6	2.5	2.5	2.4	2.4	2.4	2.
HSS	2.5	2.4	2.4	2.3	2.3	2.3	2
SWPB	1.4	1.3	1.3	1.2	1.2	1.2	1.

TABLE 2 TO SUBPART LL—POTLINE POM LIMITS FOR EMISSION AVERAGING

Type	Quarterly POM limit (lb/ton) [for given number of potlines]						
	2 lines	3 lines	4 lines	5 lines	6 lines	7 lines	8 lines
HSS	4.1	3.8	3.7	3.5	3.5	3.4	3.3
VSS1	2.1	2.0	1.9	1.9	1.8	1.8	1.8
VSS2	3.2	3.0	2.9	2.9	2.8	2.8	2.7

TABLE 3 TO SUBPART LL—ANODE BAKE FURNACE LIMITS FOR EMISSION AVERAGING

Number of furnaces	Emission limit (lb/ton of anode)	
	TF	POM
2	0.11	0.17
3	0.090	0.17
4	0.077	0.17
5	0.070	0.17

(e) The owner or operator may use an alternative test method for TF or POM emissions providing:

(1) The owner or operator has already demonstrated the equivalency of the alternative method for a specific plant and has received previous approval from the Administrator or the applicable regulatory authority for TF or POM measurements using the alternative method; or

(2) The owner or operator demonstrates to the satisfaction of the applicable regulatory authority that the results from the alternative method meet the criteria specified in §§ 63.848(d)(1) and (d)(3) through (d)(6). The results from the alternative method shall be based on simultaneous sampling using the alternative method and the following reference methods:

(i) For TF, Methods 13 and 14 or Method 14A in appendix A to part 60 of this chapter; or

(ii) For POM, Method 315 in appendix A to this part and Method 14 in appendix A to part 60 of this chapter.

§ 63.850 Notification, reporting, and recordkeeping requirements.

(a) *Notifications.* The owner or operator shall submit the following written notifications:

(1) Notification for an area source that subsequently increases its emissions such that the source is a major source subject to the standard;

(2) Notification that a source is subject to the standard, where the initial startup is before the effective date of the standard;

(3) Notification that a source is subject to the standard, where the source is new or has been reconstructed, the initial startup is after the effective date of the standard, and for which an application for approval of construction or reconstruction is not required;

(4) Notification of intention to construct a new major source or reconstruct a major source; of the date construction or reconstruction commenced; of the anticipated date of startup; of the actual date of startup, where the initial startup of a new or reconstructed source occurs after the effective date of the standard, and for which an application for approval of construction or reconstruction is required [see §§ 63.9(b)(4) and (b)(5)];

(5) Notification of initial performance test;

(6) Notification of initial compliance status;

(7) One-time notification for each affected source of the intent to use an HF continuous emission monitor; and

(8) Notification of compliance approach. The owner or operator shall develop and submit to the applicable regulatory authority, if requested, an engineering plan that describes the techniques that will be used to address the capture efficiency of the reduction cells for gaseous hazardous air pollutants in compliance with the emission limits in §§ 63.843, 63.844, and 63.846.

(b) *Performance test reports.* The owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(6) of this section. Except as provided in paragraph (d) of this section, the owner or operator shall submit a summary of all subsequent performance tests to the applicable regulatory authority on an annual basis.

(c) *Startup, shutdown, and malfunction plan and reports.* The owner or operator shall develop and implement a written plan as described in § 63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and control systems used to comply with the standard. The plan does not have to be submitted with the permit appplication or included in the operating permit. The permitting authority may review the plan upon request. In addition to the information required in § 63.6(e)(3), the plan shall include:

(1) Procedures, including corrective actions, to be followed if a monitoring device measures an operating parameter outside the limit(s) established under § 63.847(h), if visible emissions from an exhaust stack indicating abnormal operation of a control device are observed by the owner or operator during the daily inspection required in § 63.848(g), or if a problem is detected during the daily inspection of a wet roof scrubber for potline secondary emission control required in § 63.848(f)(5)(ii); and

(2) The owner or operator shall also keep records of each event as required by § 63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in § 63.6(e)(3)(iv).

(d) *Excess emissions report.* As required by § 63.10(e)(3), the owner or operator shall submit a report (or a summary report) if measured emissions are in excess of the applicable standard. The report shall contain the information specified in § 63.10(e)(3)(v) and be submitted semiannually unless quarterly reports are required as a result of excess emissions.

(e) *Recordkeeping.* The owner or operator shall maintain files of all information (including all reports and notifications) required by § 63.10(b) and by this subpart.

(1) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained offsite;

(2) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche;

(3) The owner or operator may report required information on paper or on a labeled computer disc using commonly available and compatible computer software; and

(4) In addition to the general records required by § 63.10(b), the owner or operator shall maintain records of the following information:

(i) Daily production rate of aluminum;

(ii) Daily production rate of green anode material placed in the anode bake furnace;

(iii) A copy of the startup, shutdown, and malfunction plan;

(iv) Records of design information for paste production plant capture systems;

(v) Records of design information for an alternative emission control device for a paste production plant;

(vi) Records supporting the monitoring of similar potlines demonstrating that the performance of similar potlines is the same as or better than that of potlines sampled by manual methods;

(vii) Records supporting a request for reduced sampling of potlines;

(viii) Records supporting the correlation of emissions measured by a continuous emission monitoring system to emissions measured by manual methods and the derivation of the alternative emission limit derived from the measurements;

(ix) The current implementation plan for emission averaging and any subsequent amendments;

(x) Records, such as a checklist or the equivalent, demonstrating that the daily inspection of a potline with wet roof scrubbers for secondary emission control has been performed as required in § 63.848(f)(5)(ii), including the results of each inspection;

(xi) Records, such as a checklist or the equivalent, demonstrating that the daily visual inspection of the exhaust stack for each control device has been performed as required in § 63.848(g), including the results of each inspection;

(xii) For a potline equipped with an HF continuous emission monitor,

(i) The average of all tests performed over the most recent 24-month period does not exceed 60 percent of the applicable limit, and

(ii) No more than one monthly performance test in the most recent 24-month period exceeds 75 percent of the applicable limit.

(5) If emissions in excess of the applicable TF limit occur while performing quarterly sampling approved under paragraph (e)(1)(ii) of this section, the owner or operator shall immediately return to the monthly sampling schedule required by paragraph (a) of this section until another request for an alternative sampling frequency is approved by the applicable regulatory authority.

(f) *Monitoring parameters for emission control devices.* The owner or operator shall install, operate, calibrate, and maintain a continuous parameter monitoring system for each emission control device. The owner or operator shall submit for approval by the regulatory authority a description of the parameter(s) to be monitored, the operating limits, and the monitoring frequency to ensure that the control device is being properly operated and maintained. An explanation of the criteria used for selection of the parameter(s), the operating limits, and the monitoring frequency, including how these relate to emission control also shall be submitted to the regulatory authority. Except as provided in paragraph (l) of this section, the following monitoring devices shall be installed:

(1) For dry alumina scrubbers, devices for the measurement of alumina flow and air flow;

(2) For dry coke scrubbers, devices for the measurement of coke flow and air flow;

(3) For wet scrubbers as the primary control system, devices for the measurement of water flow and air flow;

(4) For electrostatic precipitators, devices for the measurement of voltage and secondary current; and

(5) For wet roof scrubbers for secondary emission control:

(i) A device for the measurement of total water flow; and

(ii) The owner or operator shall inspect each control device at least once each operating day to ensure the control device is operating properly and record the results of each inspection.

(g) *Visible emissions.* The owner or operator shall visually inspect the exhaust stack(s) of each control device on a daily basis for evidence of any visible emissions indicating abnormal operation.

(h) *Corrective action.* If a monitoring device for a primary control device measures an operating parameter outside the limit(s) established pursuant to § 63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stack of a control device during a daily inspection, or if a problem is detected during the daily inspection of a wet roof scrubber for potline secondary emission control, the owner or operator shall initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan within 1 hour. Failure to initiate the corrective action procedures within 1 hour or to take the necessary corrective actions to remedy the problem is a violation.

(i) *Exceedances.* If the limit for a given operating parameter associated with monitoring a specific control device is exceeded six times in any semiannual reporting period, then any subsequent exceedance in that reporting period is a violation. For the purpose of determining the number of exceedances, no more than one exceedance shall be attributed in any given 24-hour period.

(j) *Weight of aluminum and green anodes.* The owner or operator of a new or existing potline or anode bake furnace shall install, operate, and maintain a monitoring device to determine the daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.

(k) *Accuracy and calibration.* The owner or operator shall submit recommended accuracy requirements to the regulatory authority for review and approval. All monitoring devices required by this section must be certified by the owner or operator to meet the accuracy requirements and must be calibrated in accordance with the manufacturer's instructions.

(l) *Alternative operating parameters.* The owner or operator may monitor alternative control device operating parameters subject to prior written approval by the applicable regulatory authority.

(m) *Other control systems.* An owner or operator using a control system not identified in this section shall request that the applicable regulatory authority include the recommended parameters for monitoring in the facility's part 70 permit.

§ 63.849 Test methods and procedures.

(a) The owner or operator shall use the following reference methods to determine compliance with the applicable emission limits for TF and POM emissions:

(1) Method 1 in appendix A to part 60 of this chapter for sample and velocity traverses;

(2) Method 2 in appendix A to part 60 of this chapter for velocity and volumetric flow rate;

(3) Method 3 in appendix A to part 60 of this chapter for gas analysis;

(4) Method 13A or Method 13B in appendix A to part 60 of this chapter, or an approved alternative, for the concentration of TF where stack or duct emissions are sampled;

(5) Method 13A or Method 13B and Method 14 or Method 14A in appendix A to part 60 of this chapter or an approved alternative method for the concentration of TF where emissions are sampled from roof monitors not employing wet roof scrubbers;

(6) Method 315 in appendix A to this part or an approved alternative method for the concentration of POM where stack or duct emissions are sampled; and

(7) Method 315 in appendix A to this part and Method 14 in appendix A to part 60 of this chapter or an approved alternative method for the concentration of POM where emissions are sampled from roof monitors not employing wet roof scrubbers.

(b) The owner or operator of a VSS potline or a SWPB potline equipped with wet roof scrubbers for the control of secondary emissions shall use methods that meet the intent of the sampling requirements of Method 14 in appendix A to part 60 of this chapter and that are approved by the State. Sample analysis shall be performed using Method 13A or Method 13B in appendix A to part 60 of this chapter for TF, Method 315 in appendix A to this part for POM, or an approved alternative method.

(c) Except as provided in § 63.845(g)(1), references to "potroom" or "potroom group" in Method 14 in appendix A to part 60 of this chapter shall be interpreted as "potline" for the purposes of this subpart.

(d) For sampling using Method 14 in appendix A to part 60 of this chapter, the owner or operator shall install one Method 14 manifold per potline in a potroom that is representative of the entire potline, and this manifold shall meet the installation requirements specified in section 2.2.1 of Method 14 in appendix A to part 60 of this chapter.

effective upon approval by the applicable regulatory authority.

§ 63.848 Emission monitoring requirements.

(a) *TF emissions from potlines.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor emissions of TF from each potline by conducting monthly performance tests. The owner or operator shall compute and record the monthly average from at least three runs for secondary emissions and the previous 12-month average of all runs for the primary control system to determine compliance with the applicable emission limit. The owner or operator must include all valid runs in the monthly average. The duration of each run for secondary emissions must represent a complete operating cycle.

(b) *POM emissions from Soderberg potlines.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor emissions of POM from each Soderberg (HSS, VSS1, and VSS2) potline every three months. The owner or operator shall compute and record the quarterly (3-month) average from at least one run per month for secondary emissions and the previous 12-month average of all runs for the primary control systems to determine compliance with the applicable emission limit. The owner or operator must include all valid runs in the quarterly (3-month) average. The duration of each run for secondary emissions must represent a complete operating cycle. The primary control system must be sampled over an 8-hour period, unless site-specific factors dictate an alternative sampling time subject to the approval of the regulatory authority.

(c) *TF and POM emissions from anode bake furnaces.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor TF and POM emissions from each anode bake furnace on an annual basis. The owner or operator shall compute and record the annual average of TF and POM emissions from at least three runs to determine compliance with the applicable emission limits. The owner or operator must include all valid runs in the annual average.

(d) *Similar potlines.* As an alternative to monthly monitoring of TF or POM secondary emissions from each potline using the test methods in § 63.849, the owner or operator may perform monthly monitoring of TF or POM secondary emissions from one potline using the test methods in §§ 63.849 (a) or (b) to represent the performance of similar potline(s). The similar potline(s) shall be monitored using an alternative method that meets the requirements of paragraphs (d)(1) through (d)(7) of this section. Two or more potlines are similar if the owner or operator demonstrates that their structure, operability, type of emissions, volume of emissions, and concentration of emissions are substantially equivalent.

(1) To demonstrate (to the satisfaction of the regulatory authority) that the level of emission control performance is the same or better, the owner or operator shall perform an emission test using an alternative monitoring procedure for the similar potline simultaneously with an emission test using the applicable test methods. The results of the emission test using the applicable test methods must be in compliance with the applicable emission limit for existing or new potlines in §§ 63.843 or 63.844. An alternative method:

(i) For TF emissions, must account for or include gaseous fluoride and cannot be based on measurement of particulate matter or particulate fluoride alone; and

(ii) For TF and POM emissions, must meet or exceed Method 14 criteria.

(2) An HF continuous emission monitoring system is an approved alternative for the monitoring of TF secondary emissions.

(3) An owner or operator electing to use an alternative monitoring procedure shall establish an alternative emission limit based on at least nine simultaneous runs using the applicable test methods and the alternative monitoring method. All runs must represent a full process cycle.

(4) The owner or operator shall derive an alternative emission limit for the HF continuous emission monitor or an alternative method using either of the following procedures:

(i) Use the highest value from the alternative method associated with a simultaneous run by the applicable test method that does not exceed the applicable emission limit; or

(ii) Correlate the results of the two methods (the applicable test method results and the alternative monitoring method results) and establish an emission limit for the alternative monitoring system that corresponds to the applicable emission limit.

(5) The owner or operator shall submit the results required in paragraph (d)(4) of this section and all supporting documentation to the applicable regulatory authority for review and approval.

(6) The regulatory authority shall review and approve or disapprove the request for an alternative method and alternative emission limit. The criterion for approval shall be a demonstration (to the satisfaction of the regulatory authority) that the alternative method and alternative emission limit achieve a level of emission control that is the same as or better than the level that would have otherwise been achieved by the applicable method and emission limit.

(7) If the alternative method is approved by the applicable regulatory authority, the owner or operator shall perform monthly emission monitoring using the approved alternative monitoring procedure to demonstrate compliance with the alternative emission limit for each similar potline.

(e) *Reduced sampling frequency.* The owner or operator may submit a written request to the applicable regulatory authority to establish an alternative testing requirement to reduce the sampling of secondary TF emissions from potlines from monthly to quarterly.

(1) In the request, the owner or operator shall provide information and data demonstrating, to the satisfaction of the applicable regulatory authority, that secondary emissions of TF from potlines have low variability during normal operations using the procedures in paragraphs (e)(1)(i) or (e)(1)(ii) of this section.

(i) Submit data from 24 consecutive months of sampling that show the average TF emissions are less than 60 percent of the applicable limit and that no monthly performance test in the 24 months of sampling exceeds 75 percent of the applicable limit; or

(ii) Submit data and a statistical analysis that the regulatory authority may evaluate based on the approach used in "Primary Aluminum: Statistical Analysis of Potline Fluoride Emissions and Alternative Sampling Frequency" (EPA–450–86–012, October 1986), which is available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

(2) An approved alternative requirement must include a test schedule and the method to be used to measure emissions for performance tests.

(3) The owner or operator of a plant that has received approval of an alternative sampling frequency under § 60.194 of this chapter is deemed to have approval of the alternative sampling frequency under this subpart.

(4) If emissions in excess of the applicable TF limit occur while performing quarterly sampling approved under paragraph (e)(1)(i) of this section, the owner or operator shall return to monthly sampling for at least 12 months and may reduce to quarterly sampling when:

P=aluminum production rate, Mg/hr (ton/hr);
K=conversion factor, 10^6 mg/kg (453,600 mg/lb);
1 = subscript for primary control system effluent gas; and
2 = subscript for secondary control system or roof monitor effluent gas.

(2) Compute the emission rate of POM from each potline using Equation 1,
Where:
E_p = emission rate of POM from the potline, kg/mg (lb/ton); and
C_s = concentration of POM, mg/dscm (mg/dscf). POM emission data collected during the installation and startup of a cathode shall not be included in C_s.

(3) Compute the emission rate (E_b) of TF from each anode bake furnace using Equation 2,

$$E_b = \frac{(C_s \times Q_{sd})}{(P_b \times K)} \qquad \text{(Equation 2)}$$

Where:
E_b = emission rate of TF, kg/mg (lb/ton) of green anodes produced;
C_s = concentration of TF, mg/dscm (mg/dscf);
Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr);
P_b = quantity of green anode material placed in the furnace, mg/hr (ton/hr); and
K = conversion factor, 10^6 mg/kg (453,600 mg/lb).

(4) Compute the emission rate of POM from each anode bake furnace using Equation 2,
Where:
C_s = concentration of POM, mg/dscm (mg/dscf).

(5) Determine the weight of the aluminum tapped from the potline and the weight of the green anode material placed in the anode bake furnace using the monitoring devices required in § 63.848(j).

(6) Determine the aluminum production rate (P) by dividing the number of hours in the calendar month into the weight of aluminum tapped from the potline during the calendar month that includes the three runs of a performance test.

(7) Determine the rate of green anode material introduced into the furnace by dividing the number of operating hours in the calendar month into the weight of green anode material used during the calendar month in which the performance test was conducted.

(f) *Paste production plants.* Initial compliance with the standards for existing and new paste production plants in §§ 63.843(b) and 63.844(b) will be demonstrated through site inspection(s) and review of site records by the applicable regulatory authority.

(g) *Pitch storage tanks.* The owner or operator shall demonstrate initial compliance with the standard for pitch storage tanks in § 63.844(d) by preparing a design evaluation or by conducting a performance test. The owner or operator shall submit for approval by the regulatory authority the information specified in paragraph (g)(1) of this section, along with the information specified in paragraph (g)(2) of this section where a design evaluation is performed or the information specified in paragraph (g)(3) of this section where a performance test is conducted.

(1) A description of the parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and

(2) Where a design evaluation is performed, documentation demonstrating that the control device used achieves the required control efficiency during reasonably expected maximum filling rate. The documentation shall include a description of the gas stream that enters the control device, including flow and POM content under varying liquid level conditions, and the information specified in paragraphs (g)(2)(i) through (g)(2)(vi) of this section, as applicable.

(i) If the control device receives vapors, gases, or liquids, other than fuels, from emission points other than pitch storage tanks, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device;

(ii) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760°C (1,400°F) is used to meet the emission reduction requirement specified in § 83.844(d), documentation that those conditions exist is sufficient to meet the requirements of § 83.844(d);

(iii) Except as provided in paragraph (g)(2)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature;

(iv) If the pitch storage tank is vented to the emission control system installed for control of emissions from the paste production plant pursuant to § 63.843(b), documentation of compliance with the requirements of § 63.843(b) is sufficient to meet the requirements of § 63.844(d);

(v) For carbon adsorbers, the design evaluation shall include the affinity of the organic vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, and if applicable, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, the pressure drop shall be included; and

(vi) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(3) If a performance test is conducted, the owner or operator shall determine the control efficiency for POM during tank loading using Method 315 in appendix A to this part. The owner or operator shall include the following information:

(i) Identification of the pitch storage tank and control device for which the performance test will be submitted; and

(ii) Identification of the emission point(s) that share the control device with the pitch storage tank and for which the performance test will be conducted.

(h) *Selection of monitoring parameters.* The owner or operator shall determine the operating limits and monitoring frequency for each control device that is to be monitored as required in § 63.848(f).

(1) For potlines and anode bake furnaces, the owner or operator shall determine upper and/or lower operating limits, as appropriate, for each monitoring device for the emission control system from the values recorded during each of the runs performed during the initial performance test and from historical data from previous performance tests conducted by the methods specified in this subpart.

(2) For a paste production plant, the owner or operator shall specify and provide the basis or rationale for selecting parameters to be monitored and the associated operating limits for the emission control device.

(3) The owner or operator may redetermine the upper and/or lower operating limits, as appropriate, based on historical data or other information and submit an application to the applicable regulatory authority to change the applicable limit(s). The redetermined limits shall become

(2) October 9, 2000, for an existing source, provided the owner or operator demonstrates to the satisfaction of the applicable regulatory authority that additional time is needed to install or modify the emission control equipment;

(3) October 8, 2001, for an existing source that is granted an extension by the regulatory authority under section 112(i)(3)(B) of the Act; or

(4) Upon startup, for an owner or operator of a new or reconstructed source.

(b) *Test plan.* The owner or operator shall prepare a site-specific test plan prior to the initial performance test according to the requirements of § 63.7(c) of this part. The test plan must include procedures for conducting the initial performance test and for subsequent performance tests required in § 63.848 for emission monitoring. In addition to the information required by § 63.7, the test plan shall include:

(1) Procedures to ensure a minimum of three runs are performed annually for the primary control system for each source;

(2) For a source with a single control device exhausted through multiple stacks, procedures to ensure that at least three runs are performed annually by a representative sample of the stacks satisfactory to the applicable regulatory authority;

(3) For multiple control devices on a single source, procedures to ensure that at least one run is performed annually for each control device by a representative sample of the stacks satisfactory to the applicable regulatory authority;

(4) Procedures for sampling single stacks associated with multiple anode bake furnaces;

(5) For plants with roof scrubbers, procedures for rotating sampling among the scrubbers or other procedures to obtain representative samples as approved by the applicable regulatory authority;

(6) For a VSS1 potline, procedures to ensure that one fan (or one scrubber) per potline is sampled for each run;

(7) For a SWPB potline, procedures to ensure that the average of the sampling results for two fans (or two scrubbers) per potline is used for each run; and

(8) Procedures for establishing the frequency of testing to ensure that at least one run is performed before the 15th of the month, at least one run is performed after the 15th of the month, and that there are at least 6 days between two of the runs during the month, or that secondary emissions are measured according to an alternate schedule satisfactory to the applicable regulatory authority.

(c) *Initial performance test.* Following approval of the site-specific test plan, the owner or operator shall conduct an initial performance test during the first month following the compliance date in accordance with the procedures in paragraph (d) of this section. If a performance test has been conducted on the primary control system for potlines or for the anode bake furnace within the 12 months prior to the compliance date, the results of that performance test may be used to determine initial compliance.

(d) *Performance test requirements.* The initial performance test and all subsequent performance tests shall be conducted in accordance with the requirements of the general provisions in subpart A of this part, the approved test plan, and the procedures in this section.

(1) *TF emissions from potlines.* For each potline, the owner or operator shall measure and record the emission rate of TF exiting the outlet of the primary control system for each potline and the rate of secondary emissions exiting through each roof monitor, or for a plant with roof scrubbers, exiting through the scrubbers. Using the equation in paragraph (e)(1) of this section, the owner or operator shall compute and record the average of at least three runs each month for secondary emissions and at least three runs each year for the primary control system to determine compliance with the applicable emission limit. Compliance is demonstrated when the emission rate of TF is equal to or less than the applicable emission limit in §§ 63.843, 63.844, or 63.846.

(2) *POM emissions from Soderberg potlines.* For each Soderberg (HSS, VSS1, and VSS2) potline, the owner or operator shall measure and record the emission rate of POM exiting the primary emission control system and the rate of secondary emissions exiting through each roof monitor, or for a plant with roof scrubbers, exiting through the scrubbers. Using the equation in paragraph (e)(2) of this section, the owner or operator shall compute and record the average of at least three runs each quarter (one run per month) for secondary emissions and at least three runs each year for the primary control system to determine compliance with the applicable emission limit. Compliance is demonstrated when the emission rate of POM is equal to or less than the applicable emission limit in §§ 63.843, 63.844, or 63.846.

(3) *Previous control device tests.* If the owner or operator has performed more than one test of primary emission control device(s) for a potline or for a bake furnace during the previous consecutive 12 months, the average of all runs performed in the previous 12-month period shall be used to determine the contribution from the primary emission control system.

(4) *TF and POM emissions from anode bake furnaces.* For each anode bake furnace, the owner or operator shall measure and record the emission rate of TF and POM exiting the exhaust stacks(s) of the primary emission control system for each anode bake furnace. Using the equations in paragraphs (e)(3) and (e)(4) of this section, the owner or operator shall compute and record the average of at least three runs each year to determine compliance with the applicable emission limits for TF and POM. Compliance is demonstrated when the emission rates of TF and POM are equal to or less than the applicable TF and POM emission limits in §§ 63.843, 63.844, or 63.846.

(e) *Equations.* The owner or operator shall determine compliance with the applicable TF and POM emission limits using the following equations and procedures:

(1) Compute the emission rate (E_p) o TF from each potline using Equation 1

$$E_p = \frac{\left[(C_{s1} \times Q_{sd})_1 + (C_{s2} \times Q_{sd})_2\right]}{(P \times K)} \qquad \text{(Equation 1)}$$

Where

E_p=emission rate of TF from a potline, kg/Mg (lb/ton);

C_{s1}=concentration of TF from the primary control system, mg/dscm (mg/dscf);

Q_{sd}=volumetric flow rate of effluent gas corresponding to the appropriate subscript location, dscm/hr (dscf/hr);

C_{s2}=concentration of TF as measured for roof monitor emissions, mg/dscm (mg/dscf);

emission limit in Table 1 of this subpart (for TF emissions) and/or Table 2 of this subpart (for POM emissions). The emission rate shall be calculated based on the total emissions from all potlines over the period divided by the quantity of aluminum produced during the period, from all potlines comprising the averaging group.

(2) To determine compliance with the applicable emission limit in Table 1 of this subpart for TF emissions, the owner or operator shall determine the monthly average emissions (in lb/ton) from each potline from at least three runs per potline each month for TF secondary emissions using the procedures and methods in §§ 63.847 and 63.849. The owner or operator shall combine the results of secondary TF monthly average emissions with the TF results for the primary control system and divide total emissions by total aluminum production.

(3) To determine compliance with the applicable emission limit in Table 2 of this subpart for POM emissions, the owner or operator shall determine the quarterly average emissions (in lb/ton) from each potline from at least one run each month for POM emissions using the procedures and methods in §§ 63.847 and 63.849. The owner or operator shall combine the results of secondary POM quarterly average emissions with the POM results for the primary control system and divide total emissions by total aluminum production.

(c) *Anode bake furnaces.* The owner or operator may average TF emissions from anode bake furnaces and demonstrate compliance with the limits in Table 3 of this subpart using the procedures in paragraphs (c)(1) and (c)(2) of this section. The owner or operator also may average POM emissions from anode bake furnaces and demonstrate compliance with the limits in Table 3 of this subpart using the procedures in paragraphs (c)(1) and (c)(2) of this section.

(1) Annual emissions of TF and/or POM from a given number of anode bake furnaces making up each averaging group shall not exceed the applicable emission limit in Table 3 of this subpart for any one year; and

(2) To determine compliance with the applicable emission limit in Table 3 of this subpart for anode bake furnaces, the owner or operator shall determine TF and/or POM emissions from the control device for each furnace at least once a year using the procedures and methods in §§ 63.847 and 63.849.

(d) *Implementation plan.* The owner or operator shall develop and submit an implementation plan for emission averaging to the applicable regulatory authority for review and approval according to the following procedures and requirements:

(1) *Deadlines.* The owner or operator must submit the implementation plan no later than 6 months before the date that the facility intends to comply with the emission averaging limits.

(2) *Contents.* The owner or operator shall include the following information in the implementation plan or in the application for an operating permit for all emission sources to be included in an emissions average:

(i) The identification of all emission sources (potlines or anode bake furnaces) in the average;

(ii) The assigned TF or POM emission limit for each averaging group of potlines or anode bake furnaces;

(iii) The specific control technology or pollution prevention measure to be used for each emission source in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple sources, the owner or operator must identify each source;

(iv) The test plan for the measurement of TF or POM emissions in accordance with the requirements in § 63.847(b);

(v) The operating parameters to be monitored for each control system or device and a description of how the operating limits will be determined;

(vi) If the owner or operator requests to monitor an alternative operating parameter pursuant to § 63.848(l):

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the applicable regulatory authority, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and

(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating conditions.

(3) *Approval criteria.* Upon receipt, the regulatory authority shall review and approve or disapprove the plan or permit application according to the following criteria:

(i) Whether the content of the plan includes all of the information specified in paragraph (d)(2) of this section; and

(ii) Whether the plan or permit application presents sufficient information to determine that compliance will be achieved and maintained.

(4) *Prohibitions.* The applicable regulatory authority shall not approve an implementation plan or permit application containing any of the following provisions:

(i) Any averaging between emissions of differing pollutants or between differing sources. Emission averaging shall not be allowed between TF and POM, and emission averaging shall not be allowed between potlines and bake furnaces;

(ii) The inclusion of any emission source other than an existing potline or existing anode bake furnace or the inclusion of any potline or anode bake plant not subject to the same operating permit;

(iii) The inclusion of any potline or anode bake furnace while it is shut down; or

(iv) The inclusion of any periods of startup, shutdown, or malfunction, as described in the startup, shutdown, and malfunction plan required by § 63.850(c), in the emission calculations.

(5) *Term.* Following review, the applicable regulatory authority shall approve the plan or permit application, request changes, or request additional information. Once the applicable regulatory authority receives any additional information requested, the applicable regulatory authority shall approve or disapprove the plan or permit application within 120 days.

(i) The applicable regulatory authority shall approve the plan for the term of the operating permit;

(ii) To revise the plan prior to the end of the permit term, the owner or operator shall submit a request to the applicable regulatory authority; and

(iii) The owner or operator may submit a request to the applicable regulatory authority to implement emission averaging after the applicable compliance date.

(6) *Operation.* While operating under an approved implementation plan, the owner or operator shall monitor the operating parameters of each control system, keep records, and submit periodic reports as required for each source subject to this subpart.

§ 63.847 Compliance provisions.

(a) *Compliance dates.* The owner or operator of a primary aluminum plant shall demonstrate initial compliance with the requirements of this subpart by:

(1) October 7, 1999, for an owner or operator of an existing plant or source;

associated with the modified potroom group, reconstructed potroom group, or new potroom group that exceed the lower emission limit calculated in paragraph (b) of this section, except that emissions less than the upper limit calculated in paragraph (c) of this section will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the potline during the performance test.

(f) *Report.* Within 30 days of any performance test that reveals emissions that fall between the lower limit calculated in paragraph (b) of this section and the upper limit calculated in paragraph (c) of this section, the owner or operator shall submit to the applicable regulatory authority a report indicating whether all necessary control devices were online and operating properly during the performance test, describing the operating and maintenance procedures followed, and setting forth any explanation for the excess emissions.

(g) *Procedures to determine TF emissions.* The owner or operator shall determine TF emissions for the potline using the following procedures:

(1) Determine the emission rate of TF in kg/Mg (lb/ton) from sampling secondary emissions and the primary control system for all new potroom groups, modified potroom groups, and reconstructed potroom groups using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849.

(2) Determine the emission rate of TF in kg/Mg (lb/ton) from sampling secondary emissions and the primary control system for potroom groups or sections of potroom groups within the potline that are not new potroom groups, modified potroom groups, or reconstructed potroom groups according to paragraphs (g)(2)(i) or (g)(2)(ii) of this section.

(i) Determine the mass emission rate of TF in kg/Mg (lb/ton) from at least one potroom group within the potline that is not a new potroom group, modified potroom group, or reconstructed potroom group using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849, or

(ii) Use the results of the testing required by paragraph (g)(1) of this section to represent the entire potline based on a demonstration that the results are representative of the entire potline. Representativeness shall be based on showing that all of the potroom groups associated with the potline are substantially equivalent in terms of their structure, operability, type of emissions, volume of emissions, and concentration of emissions.

(3) Calculate the TF emissions for the potline in kg/Mg (lb/ton) based on the production-weighted average of the TF emission rates from paragraphs (g)(1) and (g)(2) of this section using the following equation:

$$E = f_1 \times E_{PG1} + (1-f_1) \times E_{PL}$$

where

E=the TF emission rate for the entire potline, kg/Mg (lb/ton);

f_1=the fraction of the potline's total aluminum production rate that is contained within all modified potroom groups, reconstructed potroom groups, and new potroom groups;

E_{PG1}=the TF emission rate from paragraph (g)(1) of this section for all modified potroom groups, reconstructed potroom groups, and new potroom groups, kg/Mg (lb/ton); and

E_{PL}=the TF emission rate for the balance of the potline from paragraph (g)(2) of this section, kg/Mg (lb/ton).

Compliance is demonstrated when TF emissions for the potline meet the requirements in paragraph (e) of this section.

(4) As an alternative to sampling as required in paragraphs (g)(1) and (g)(2) of this section, the owner or operator may perform representative sampling of the entire potline subject to the approval of the applicable regulatory authority. Such sampling shall provide coverage by the sampling equipment of both the new, modified, or reconstructed potroom group and the balance of the potline. The coverage for the new, modified, or reconstructed potroom group must meet the criteria specified in the reference methods in § 63.849. TF emissions shall be determined for the potline using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849. Compliance is demonstrated when TF emissions for the potline meet the requirements in paragraph (e) of this section.

(h) *Opacity.* Except as provided in paragraph (i) of this section, the owner or operator shall not discharge or cause to be discharged into the atmosphere from the modified potroom group, reconstructed potroom group, or new potroom group any emissions of gases that exhibit 10 percent opacity or greater.

(i) *Alternative opacity limit.* An alternative opacity limit may be established in place of the opacity limit in paragraph (h) of this section using the following procedures:

(1) If the regulatory authority finds that a potline is in compliance with the applicable TF standard for which performance tests are conducted in accordance with the methods and procedures in § 63.849 but during the time such performance tests are being conducted fails to meet any applicable opacity standard, the regulatory authority shall notify and advise the owner or operator that he/she may petition the regulatory authority within 10 days of receipt of notification to make appropriate adjustment to the opacity standard.

(2) The regulatory authority will grant such a petition upon a demonstration by the owner or operator that the potroom group and associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the regulatory authority; and that the potroom group and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(3) As indicated by the performance and opacity tests, the regulatory authority will establish an opacity standard for any potroom group meeting the requirements in paragraphs (i)(1) and (i)(2) of this section such that the opacity standard could be met by the potroom group at all times during which the potline is meeting the TF emission limit.

(4) The alternative opacity limit established in paragraph (i)(3) of this section shall not be greater than 20 percent opacity.

§ 63.846 Emission averaging.

(a) *General.* The owner or operator of an existing potline or anode bake furnace in a State that does not choose to exclude emission averaging in the approved operating permit program may demonstrate compliance by emission averaging according to the procedures in this section.

(b) *Potlines.* The owner or operator may average TF emissions from potlines and demonstrate compliance with the limits in Table 1 of this subpart using the procedures in paragraphs (b)(1) and (b)(2) of this section. The owner or operator also may average POM emissions from potlines and demonstrate compliance with the limits in Table 2 of this subpart using the procedures in paragraphs (b)(1) and (b)(3) of this section.

(1) Monthly average emissions of TF and/or quarterly average emissions of POM shall not exceed the applicable

§ 63.844 Emission limits for new or reconstructed sources.

(a) *Potlines.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (a)(1) and (a)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.6 kg/Mg (1.2 lb/ton) of aluminum produced; and

(2) *POM limit.* Emissions of POM from Soderberg potlines shall not exceed 0.32 kg/Mg (0.63 lb/ton) of aluminum produced.

(b) *Paste production plants.* The owner or operator shall meet the requirements in § 63.843(b) for existing paste production plants.

(c) *Anode bake furnaces.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (c)(1) and (c)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.01 kg/Mg (0.02 lb/ton) of green anode; and

(2) *POM limit.* Emissions of POM shall not exceed 0.025 kg/Mg (0.05 lb/ton) of green anode.

(d) *Pitch storage tanks.* Each pitch storage tank shall be equipped with an emission control system designed and operated to reduce inlet emissions of POM by 95 percent or greater.

§ 63.845 Incorporation of new source performance standards for potroom groups.

(a) *Applicability.* The provisions in paragraphs (a) through (i) of this section shall apply to any Soderberg, CWPB2, and CWPB3 potline that adds a new potroom group to an existing potline or that is associated with a potroom group that meets the definition of "modified potroom group" or "reconstructed potroom group."

(1) The following shall not, by themselves, be considered to result in a potroom group modification:

(i) Maintenance, repair, and replacement that the applicable regulatory authority determines to be routine for the potroom group;

(ii) An increase in production rate of an existing potroom group, if that increase can be accomplished without a capital expenditure on that potroom group;

(iii) An increase in the hours of operation;

(iv) Use of an alternative fuel or raw material if, prior to the effective date of this subpart, the existing potroom group was designed to accommodate that alternative use;

(v) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system that the applicable regulatory authority determines to be less environmentally beneficial; and

(vi) The relocation or change in ownership of an existing potroom group.

(2) The provisions in paragraphs (a)(2)(i) through (a)(2)(iv) of this section apply when the applicable regulatory authority must determine if a potroom group meets the definition of reconstructed potroom group.

(i) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(ii) If an owner or operator of an existing potroom group proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new potroom group, he/she shall notify the applicable regulatory authority of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(A) Name and address of the owner or operator;

(B) The location of the existing potroom group;

(C) A brief description of the existing potroom group and the components that are to be replaced;

(D) A description of the existing air pollution control equipment and the proposed air pollution control equipment;

(E) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new potroom group;

(F) The estimated life of the existing potroom group after the replacements; and

(G) A discussion of any economic or technical limitations the potroom group may have in complying with the applicable standards of performance after the proposed replacements.

(iii) The applicable regulatory authority will determine, within 30 days of the receipt of the notice required by paragraph (a)(2)(ii) of this section and any additional information he/she may reasonably require, whether the proposed replacement constitutes a reconstructed potroom group.

(iv) The applicable regulatory authority's determination under paragraph (a)(2)(iii) of this section shall be based on:

(A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new potroom group;

(B) The estimated life of the potroom group after the replacements compared to the life of a comparable entirely new potroom group;

(C) The extent to which the components being replaced cause or contribute to the emissions from the potroom group; and

(D) Any economic or technical limitations on compliance with applicable standards of performance that are inherent in the proposed replacements.

(b) *Lower TF emission limit.* The owner or operator shall calculate a lower TF emission limit for any potline associated with the modified potroom group, reconstructed potroom group, or new potroom group using the following equation:

$$L_1 = f_1 \times L_{PG1} + (1 - f_1) \times L_{PL}$$

Where

L_1=the lower TF emission limit in kg/Mg (lb/ton);

f_1=the fraction of the potline's total aluminum production capacity that is contained within all modified potroom groups, reconstructed potroom groups, and new potroom groups;

L_{PG1}=0.95 kg/Mg (1.9 lb/ton) for prebake potlines and 1.0 kg/Mg (2.0 lb/ton) for Soderberg potlines; and

L_{PL}=the TF emission limit from § 63.843(a)(1) for the appropriate potline subcategory that would have otherwise applied to the potline.

(c) *Upper TF emission limit.* The owner or operator shall calculate an upper TF emission limit for any potline associated with the modified potroom group, reconstructed potroom group, or new potroom group using the following equation:

$$L_2 = f_1 \times L_{PG2} + (1 - f_1) \times L_{PL}$$

Where

L_2=the upper TF emission limit in kg/Mg (lb/ton); and

L_{PG2}=1.25 kg/Mg (2.5 lb/ton) for prebake potlines and 1.3 kg/Mg (2.6 lb/ton) for Soderberg potlines.

(d) *Recalculation.* The TF emission limits in paragraphs (b) and (c) of this section shall be recalculated each time a new potroom group is added to the potline and each time an additional potroom group meets the definition of "modified potroom group" or "reconstructed potroom group."

(e) *Emission limitation.* The owner or operator shall not discharge or cause to be discharged into the atmosphere emissions of TF from any potline

pitch that is not part of the paste production plant.

Polycyclic organic matter (POM) means organic matter extractable by methylene chloride as determined by Method 315 in appendix A to this part or by an approved alternative method.

Potline means a single, discrete group of electrolytic reduction cells electrically connected in series, in which alumina is reduced to form aluminum.

Potroom means a building unit that houses a group of electrolytic cells in which aluminum is produced.

Potroom group means an uncontrolled potroom, a potroom that is controlled individually, or a group of potrooms or potroom segments ducted to a common control system.

Prebake process means a method of primary aluminum reduction that uses an anode that was baked in an anode bake furnace, which is introduced into the top of the reduction cell and consumed as part of the reduction process.

Primary aluminum reduction plant means any facility manufacturing aluminum by electrolytic reduction.

Primary control system means the equipment used to capture the gases and particulate matter evacuated directly from the reduction cell and the emission control device(s) used to remove pollutants prior to discharge of the cleaned gas to the atmosphere. A roof scrubber is not part of the primary control system.

Primary emissions means the emissions discharged from the primary control system.

Reconstructed potroom group means an existing potroom group for which the components are replaced to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new potroom group, and for which it is technologically and economically feasible to meet the applicable emission limits for total fluoride set forth in this subpart.

Reconstruction means the replacement of components of a source to such an extent that:

(1) All of the major components of the source are replaced (for example, the major components of a potline include the raw material handling system, reduction cells, superstructure, hooding, ductwork, etc.); and

(2) It is technologically and economically feasible for the reconstructed source to meet the standards for new sources established in this subpart.

Roof monitor means that portion of the roof of a potroom building where gases not captured at the cell exit from the potroom.

Secondary emissions means the fugitive emissions that are not captured and controlled by the primary control system and that escape through the roof monitor or through roof scrubbers.

Side-worked prebake (SWPB) process means a method of primary aluminum reduction using the prebake process, in which the alumina is added along the sides of the reduction cell.

Soderberg process means a method of primary aluminum reduction in which the anode paste mixture is baked in the reduction pot by the heat resulting from the electrolytic process.

Total fluorides (TF) means elemental fluorine and all fluoride compounds as measured by Methods 13A or 13B in appendix A to part 60 of this chapter or by an approved alternative method.

Vertical stud Soderberg (VSS) process means a method of primary aluminum reduction using the Soderberg process, in which the electrical current is introduced to the anode by steel rods (studs) inserted into the top of a monolithic anode.

Vertical stud Soderberg one (VSS1) means all existing vertical stud Soderberg potlines located either at Northwest Aluminum in The Dalles, Oregon, or at Goldendale Aluminum in Goldendale, Washington.

Vertical stud Soderberg two (VSS2) means all existing vertical stud Soderberg potlines located at Columbia Falls Aluminum in Columbia Falls, Montana.

§ 63.843 Emission limits for existing sources.

(a) *Potlines.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the applicable limits in paragraphs (a)(1) and (a)(2) of this section.

(1) *TF limits.* Emissions of TF shall not exceed:

(i) 0.95 kg/Mg (1.9 lb/ton) of aluminum produced for each CWPB1 potline;

(ii) 1.5 kg/Mg (3.0 lb/ton) of aluminum produced for each CWPB2 potline;

(iii) 1.25 kg/Mg (2.5 lb/ton) of aluminum produced for each CWPB3 potline;

(iv) 0.8 kg/Mg (1.6 lb/ton) of aluminum produced for each SWPB potline;

(v) 1.1 kg/Mg (2.2 lb/ton) of aluminum produced for each VSS1 potline;

(vi) 1.35 kg/Mg (2.7 lb/ton) of aluminum produced for each VSS2 potline; and

(vii) 1.35 kg/Mg (2.7 lb/ton) of aluminum produced for each HSS potline.

(2) *POM limits.* Emissions of POM shall not exceed:

(i) 2.35 kg/Mg (4.7 lb/ton) of aluminum produced for each HSS potline;

(ii) 1.2 kg/Mg (2.4 lb/ton) of aluminum produced for each VSS1 potline; and

(iii) 1.8 kg/Mg (3.6 lb/ton) of aluminum produced for each VSS2 potline.

(3) *Change in subcategory.* Any potline, other than a reconstructed potline, that is changed such that its applicable subcategory also changes shall meet the applicable emission limit in this subpart for the original subcategory or the new subcategory, whichever is more stringent.

(b) *Paste production plants.* The owner or operator shall install, operate, and maintain equipment to capture and control POM emissions from each paste production plant.

(1) The emission capture system shall be installed and operated to meet the generally accepted engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Handbook of Recommended Practice" (incorporated by reference in § 63.841 of this part); and

(2) Captured emissions shall be routed through a closed system to a dry coke scrubber; or

(3) The owner or operator may submit a written request for use of an alternative control device to the applicable regulatory authority for review and approval. The request shall contain information and data demonstrating that the alternative control device achieves POM emissions less than 0.011 lb/ton of paste for plants with continuous mixers or POM emissions less than 0.024 lb/ton of paste for plants with batch mixers. The POM emission rate shall be determined by sampling using Method 315 in appendix A to this part.

(c) *Anode bake furnaces.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (c)(1) and (c)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.10 kg/Mg (0.20 lb/ton) of green anode; and

(2) *POM limit.* Emissions of POM shall not exceed 0.09 kg/Mg (0.18 lb/ton) of green anode.

* * * * *

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

7. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

8. Part 63 is amended by adding subpart LL to read as follows:

Subpart LL—National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

Sec.

63.840 Applicability.
63.841 Incorporation by reference.
63.842 Definitions.
63.843 Emission limits for existing sources.
63.844 Emission limits for new or reconstructed sources.
63.845 Incorporation of new source performance standards for potroom groups.
63.846 Emission averaging.
63.847 Compliance provisions.
63.848 Emission monitoring requirements.
63.849 Test methods and procedures.
63.850 Notification, reporting, and recordkeeping requirements.
63.851 Regulatory authority review procedures.
63.852 Applicability of general provisions.
63.853 Delegation of authority.
63.854–63.859 [Reserved]
Table 1 to Subpart LL—Potline TF Limits for Emission Averaging
Table 2 to Subpart LL—Potline POM Limits for Emission Averaging
Table 3 to Subpart LL—Anode Bake Furnace Limits for Emission Averaging

Appendix A to Subpart LL—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart LL

Subpart LL—National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

§ 63.840 Applicability.

(a) Except as provided in paragraph (b) of this section, the requirements of this subpart apply to the owner or operator of each new pitch storage tank and new or existing potline, paste production plant, or anode bake furnace associated with primary aluminum production and located at a major source as defined in § 63.2.

(b) The requirements of this subpart do not apply to any existing anode bake furnace that is not located on the same site as a primary aluminum reduction plant. The owner or operator shall comply with the State MACT determination established by the applicable regulatory authority.

(c) An owner or operator of an affected facility (potroom group or anode bake furnace) under § 60.190 of this chapter may elect to comply with either the requirements of § 63.845 of this subpart or the requirements of subpart S of part 60 of this chapter.

§ 63.841 Incorporation by reference.

(a) The following material is incorporated by reference in the corresponding sections noted. This incorporation by reference was approved by the Director of the Federal Register on October 7, 1997, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of approval, and notice of any change in the materials will be published in the **Federal Register**. Revisions to "Industrial Ventilation: A Manual of Recommended Practice" (22nd ed.) are applicable only after publication of a document in the **Federal Register** to amend subpart LL to require use of the new information.

(1) Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure" of "Industrial Ventilation: A Manual of Recommended Practice," American Conference of Governmental Industrial Hygienists, 22nd edition, 1995, IBR approved for §§ 63.843(b) and 63.844(b); and

(2) ASTM D 2986–95A, Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for section 7.1.1 of Method 315 in appendix A to this part.

(b) The materials incorporated by reference are available for inspection at the Office of the Federal Register, 800 North Capitol Street NW., Suite 700, 7th Floor, Washington, DC, and at the Air and Radiation Docket Center, U.S. EPA, 401 M Street, SW., Washington, DC. The materials also are available for purchase from one of the following addresses:

(1) Customer Service Department, American Conference of Governmental Industrial Hygienists (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, Ohio 45240, telephone number (513) 742–2020; or

(2) American Society for Testing and Materials, 100 Bar Harbour Drive, West Conshohocken, Pennsylvania 19428, telephone number (610) 832–9500.

§ 63.842 Definitions.

Terms used in this subpart are defined in the Clean Air Act as amended (the Act), in § 63.2, or in this section as follows:

Anode bake furnace means an oven in which the formed green anodes are baked for use in a prebake process. This definition includes multiple anode bake furnaces controlled by a common control device (bake furnaces controlled by a common control device are considered to be one source).

Center-worked prebake (CWPB) process means a method of primary aluminum reduction using the prebake process in which the alumina feed is added down the center of the reduction cell.

Center-worked prebake one (CWPB1) means all existing center-worked prebake potlines not defined as center-worked prebake two (CWPB2) or center-worked prebake three (CWPB3) potlines.

Center-worked prebake two (CWPB2) means all existing center-worked prebake potlines located at Alcoa in Rockdale, Texas; Kaiser Aluminum in Mead, Washington; Ormet Corporation in Hannibal, Ohio; Ravenswood Aluminum in Ravenswood, West Virginia; Reynolds Metals in Troutdale, Oregon; and Vanalco Aluminum in Vancouver, Washington.

Center-worked prebake three (CWPB3) means all existing center-worked prebake potlines that produce very high purity aluminum, have a wet scrubber for the primary control system, and are located at the NSA primary aluminum plant in Hawesville, Kentucky.

Continuous parameter monitoring system means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Horizontal stud Soderberg (HSS) process means a method of primary aluminum reduction using the Soderberg process in which the electrical current is introduced to the anode by steel rods (studs) inserted into the side of a monolithic anode.

Modified potroom group means an existing potroom group to which any physical change in, or change in the method of operation of, results in an increase in the amount of total fluoride emitted into the atmosphere by that potroom group.

Paste production plant means the processes whereby calcined petroleum coke, coal tar pitch (hard or liquid), and/or other materials are mixed, transferred, and formed into briquettes or paste for vertical stud Soderberg (VSS) and HSS processes or into green anodes for a prebake process. This definition includes all operations from initial mixing to final forming (i.e., briquettes, paste, green anodes) within the paste plant, including conveyors and units managing heated liquid pitch.

Pitch storage tank means any fixed roof tank that is used to store liquid

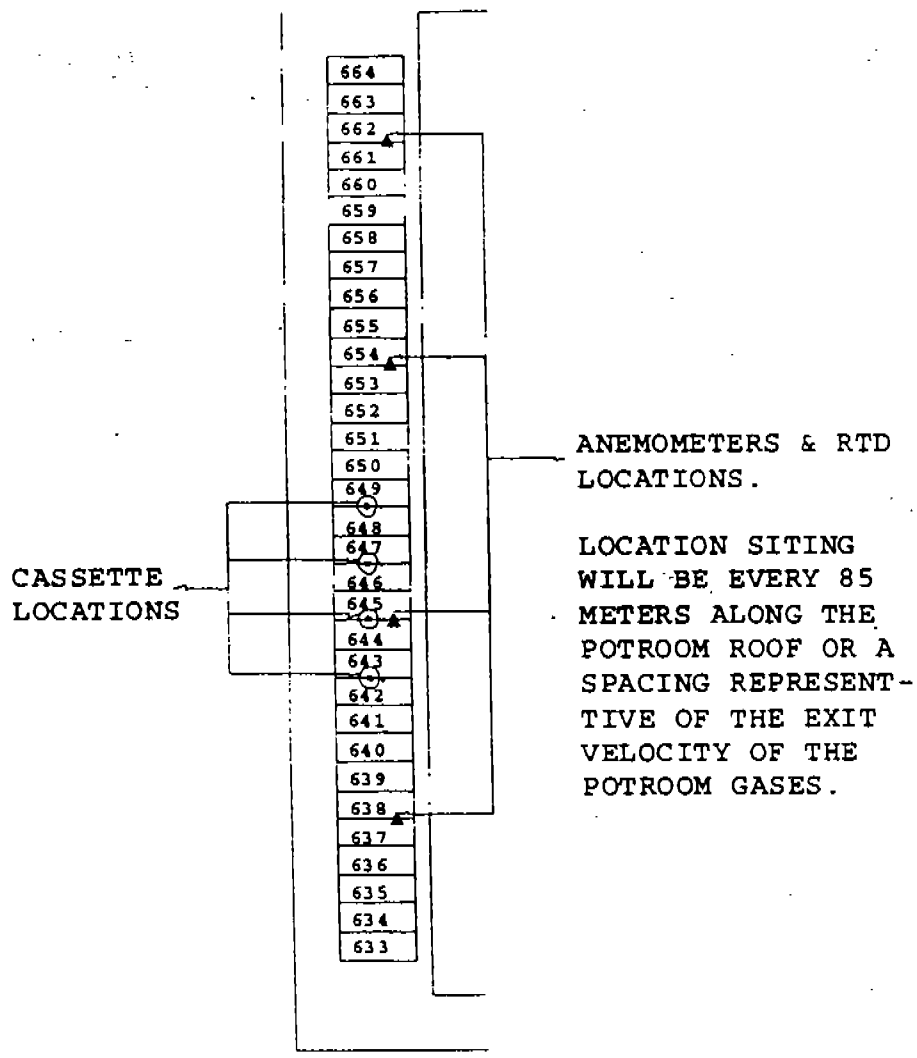


Figure 14A-3. Conceptual side view of positions of cassettes, anemometers, and RTDs in a typical half of a potroom.

Note: This drawing does not reflect other potentially acceptable arrangements.

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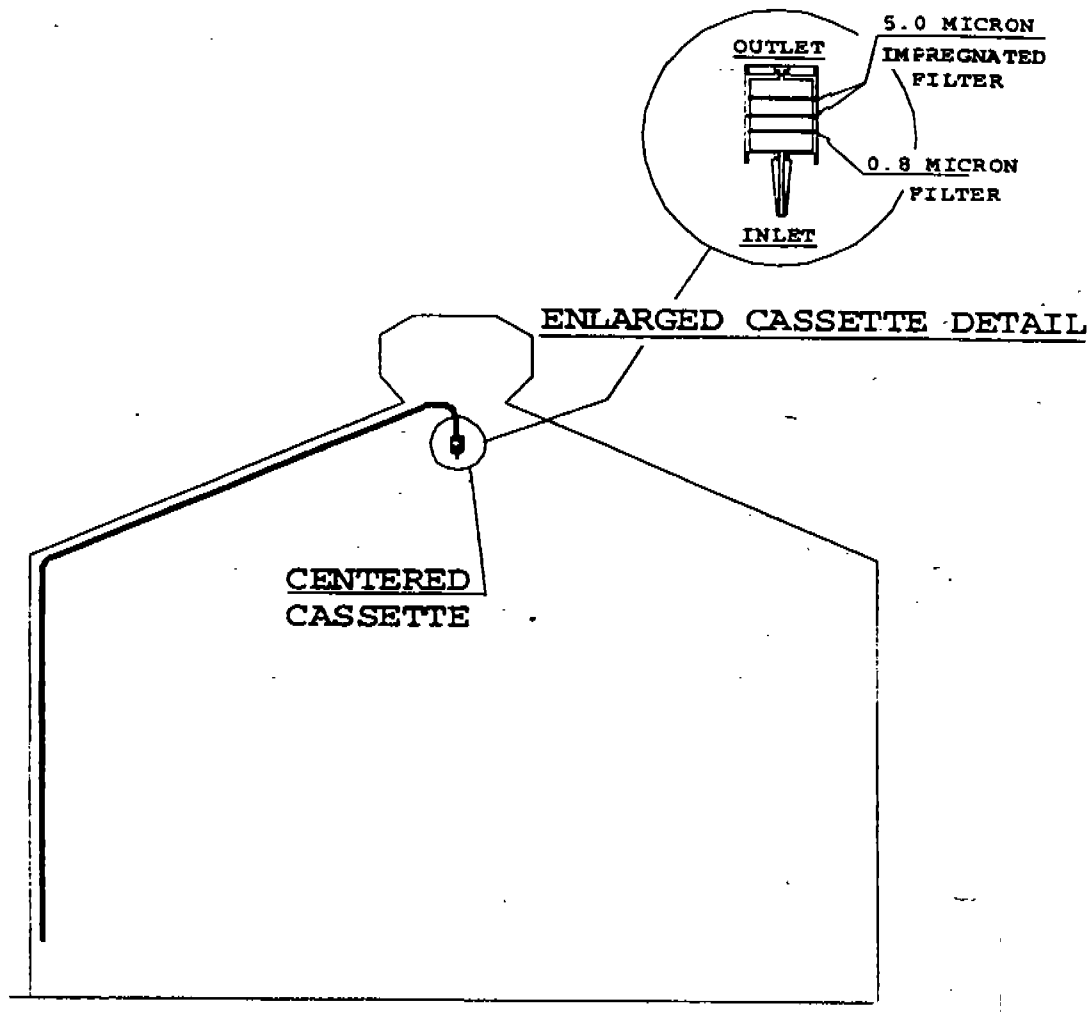
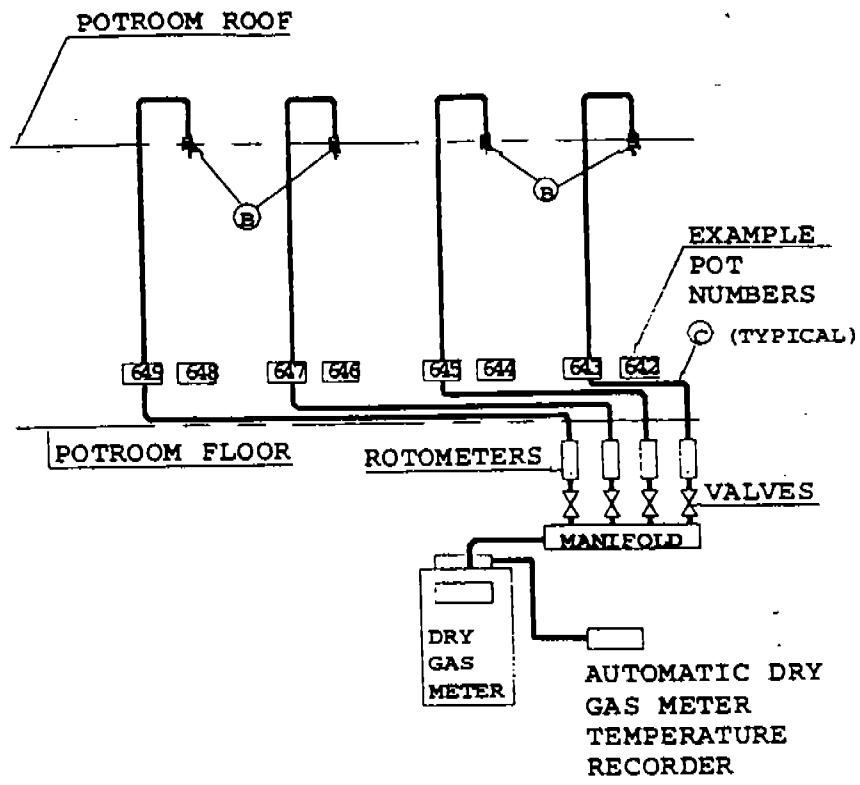


Figure 14A-2. Conceptual end view of cassette placement in a potroom roof.



Ⓑ ALCAN CASSETTE EXAMPLE METHOD SAMPLING POINTS
Ⓒ POLYETHYLENE TUBING ENCLOSED IN CONDUIT

Figure 14A-1. Conceptual side view of arrangement of 4 cassettes for one-half of a potroom.

Note: This drawing does not reflect an equally acceptable arrangement of 8 cassettes in a cassette group located along at least 8 percent of the potroom roof.

$$F_v = 575.40\ ft^3 = \frac{(1{,}500\ \mu g)(8\ cassettes)}{(20.855\ \mu g/ft^3)} \qquad Eq.\ 14A\text{-}4$$

This is a total of 575.40 ft³ for eight cassettes or 71.925 ft³/cassette.

12.3 Calculations of TF emissions from field and laboratory data that would yield a production related emission rate can be calculated as follows:

12.3.1 Obtain a standard cubic feet (scf) value for the volume pulled through the dry gas meter for all cassettes by using the field and calibration data and Equation 5–1 of Method 5 of this appendix.

12.3.2 Derive the average quantity of TF per cassette (in µg TF/cassette) by adding all laboratory data for all cassettes and dividing this value by the total number of cassettes used. Divide this average TF value by the corrected dry gas meter volume for each cassette; this value then becomes TF_{std} (µg/ft³).

12.3.3 Calculate the production-based emission rate (R_e) in lb/ton using Equation 14A–5.

$$R_e = \frac{(TF_{std})(V_r)(A_r)(2.2\times10^{-9}\ lb/\mu g)}{(R_p)} \qquad Eq.\ 14A\text{-}5$$

12.3.4 As an example calculation, assume eight cassettes located in a potline were used to sample for 72 hours during the run. The analysis of all eight cassettes yielded a total of 3,000 µg of TF. The dry gas meter volume was corrected to yield a total of 75 scf per cassette, which yields a value for TF_{std} of 3,000/75=5 µg/ft³. The open area of the roof monitor for the potline (A_r) is 17,400 ft². The exit velocity of the roof monitor gases (V_r) is 250 ft/min. The production rate of aluminum over the previous 720 hours was 5,000 tons, which is 6.94 tons/hr or 0.116 ton/min (R_p). Substituting these values into Equation 14A–5 yields:

$$R_e = \frac{(5\ \mu g/ft^3)(250\ ft/min)(17{,}400\ ft^2)(2.2\times10^{-9}\ lb/\mu g)}{(0.116\ ton/min)} \qquad Eq.\ 14A\text{-}6$$

$$R_e = 0.41\ lb/ton\ of\ aluminum\ produced. \qquad Eq.\ 14A\text{-}7$$

12.4 Corrections to volumes due to leakage. Should the post-test leak check leakage rate exceed 4 percent as described in section 8.3.2 of this method, correct the volume as detailed in Case I in section 6.3 of Method 5 of this appendix.

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method for this technology shall be based on the manufacturer's instructions for equipment operation and shall also include the analysis of five standards with concentrations in the expected range of the actual samples. The results of the analysis of the five standards shall have a coefficient of correlation of at least 0.99. A check standard shall be analyzed as the last sample of the group to determine if instrument drift has occurred. The acceptable result for the check standard is 95 to 105 percent of the standard's true value.

11.2 The secondary analytical method shall be by specific ion electrode if the samples are distilled or if a TISAB IV buffer is used to eliminate aluminum interferences. Five standards with concentrations in the expected range of the actual samples shall be analyzed, and a coefficient of correlation of at least 0.99 is the minimum acceptable limit for linearity. An exception for this limit for linearity is a condition when low-level standards in the range of 0.01 to 0.48 µg fluoride/ml are analyzed. In this situation, a minimum coefficient of correlation of 0.97 is required. TISAB II shall be used for low-level analyses.

12.0 Data Analysis and Calculations.

12.1 Carry out calculations, retaining at least one extra decimal point beyond that of the acquired data. Round off values after the final calculation. Other forms of calculations may be used as long as they give equivalent results.

12.2 Estimating volumes for initial test runs.

$$F_v = \frac{(F_d)(X)}{F_e} \qquad \text{Eq. 14A-1}$$

Where

F_v = Desired volume of dry gas to be sampled, ft³.

F_d = Desired or analytically optimum mass of TF per cassette, micrograms of TF per cassette (µg/cassette).

X = Number of cassettes used.

F_e = Typical concentration of TF in emissions to be sampled, µg/ft³, calculated from Equation 14A–2.

$$F_e = \frac{(R_e)(R_p)(4.536\times10^8\ \mu g/lb)}{(A_r)(V_r)} \qquad \text{Eq. 14A-2}$$

Where

R_e = Typical emission rate from the facility, pounds of TF per ton (lb/ton) of aluminum.

R_p = Typical production rate of the facility, tons of aluminum per minute (ton/min).

V_r = Typical exit velocity of the roof monitor gases, feet per minute (ft/min).

A_r = Open area of the roof monitor, square feet (ft²).

12.2.1 Example calculation. Assume that the typical emission rate (R_e) is 1.0 lb TF/ton of aluminum, the typical roof vent gas exit velocity (V_r) is 250 ft/min, the typical production rate (R_p) is 0.10 ton/min, the known open area for the roof monitor (A_r) is 8,700 ft², and the desired (analytically optimum) mass of TF per cassette is 1,500 µg. First calculate the concentration of TF per cassette (F_e) in µg/ft³ using Equation 14A–2. Then calculate the desired volume of gas to be sampled (F_v) using Equation 14A–1.

$$F_e = 20.855 = \frac{(1.0\ lb/ton)(0.1\ tons/min)(4.536\times10^8\ \mu g/lb)}{(8{,}700\ ft^2)(250\ ft/min)} \qquad \text{Eq. 14A-3}$$

Parameters related to the test run that shall be recorded, either during the test run or after the test run if recording devices are used, include: anemometer data, roof monitor exit gas temperature, dry gas meter temperature, dry gas meter volume, and barometric pressure. At the conclusion of the test run, the cassettes shall be lowered, the dry gas meter turned off, and the volume registered on the dry gas meter recorded. The post-test leak check procedures described in section 8.3.2 of this method shall be performed. All data relevant to the test shall be recorded on a field data sheet and maintained on file.

8.5 Sample recovery.

8.5.1 The cassettes shall be brought to the laboratory with the intake nozzle contents protected with the section of plugged tubing previously described. The exterior of cassettes shall carefully be wiped free of any dust or debris, making sure that any falling dust or debris does not present a potential laboratory contamination problem.

8.5.2 Carefully remove all tape from the cassettes and remove the initial filter, support pad, and all loose solids from the first (intake) section of the cassette. Fold the filter and support pad several times and, along with all loose solids removed from the interior of the first section of the cassette, place them into a nickel crucible. Using water, wash the interior of the nozzle into the same nickel crucible. Add 0.1 gram (g) [±0.1 milligram (mg)] of calcium oxide and a sufficient amount of water to make a loose slurry. Mix the contents of the crucible thoroughly with a Teflon" stirring rod. After rinsing any adhering residue from the stirring rod back into the crucible, place the crucible on a hot plate or in a muffle furnace until all liquid is evaporated and allow the mixture to gradually char for 1 hour.

8.5.3 Transfer the crucible to a cold muffle furnace and ash at 600°C (1,112°F). Remove the crucible after the ashing phase and, after the crucible cools, add 3.0 g (±0.1 g) of NaOH pellets. Place this mixture in a muffle furnace at 600°C (1,112°F) for 3 minutes. Remove the crucible and roll the melt so as to reach all of the ash with the molten NaOH. Let the melt cool to room temperature. Add 10 to 15 ml of water to the crucible and place it on a hot plate at a low temperature setting until the melt is soft or suspended. Transfer the contents of the crucible to a 50-ml volumetric flask. Rinse the crucible with 20 ml of 1:1 perchloric acid or 20 ml of 1:1 sulfuric acid in two (2) 10 ml portions. Pour the acid rinse slowly into the volumetric flask and swirl the flask after each addition. Cool to room temperature. The product of this procedure is particulate fluorides.

8.5.4 Gaseous fluorides can be isolated for analysis by folding the gaseous fluoride filters and support pads to approximately ¼ of their original size and placing them in a 50-ml plastic vial. To the vial add exactly 10 ml of water and leach the sample for a minimum of 1 hour. The leachate from this process yields the gaseous fluorides for analysis.

9.0 Quality Control.

9.1 Laboratory auditing. Laboratory audits of specific and known concentrations of fluoride shall be submitted to the laboratory with each group of samples submitted for analysis. An auditor shall prepare and present the audit samples as a "blind" evaluation of laboratory performance with each group of samples submitted to the laboratory. The audits shall be prepared to represent concentrations of fluoride that could be expected to be in the low, medium and high range of actual results. Average recoveries of all three audits must equal 90 to 110 percent for acceptable results; otherwise, the laboratory must investigate procedures and instruments for potential problems.

Note: The analytical procedure allows for the analysis of individual or combined filters and pads from the cassettes provided that equal volumes (±10 percent) are sampled through each cassette.

10.0 Calibrations.

10.1 Equipment evaluations. To ensure the integrity of this method, periodic calibrations and equipment replacements are necessary.

10.1.1 Metering system. At 30-day intervals the metering system shall be calibrated. Connect the metering system inlet to the outlet of a wet test meter that is accurate to 1 percent. Refer to Figure 5–4 of Method 5 of this appendix. The wet-test meter shall have a capacity of 30 liters/revolution [1 cubic foot (ft^3)/revolution]. A spirometer of 400 liters (14 ft^3) or more capacity, or equivalent, may be used for calibration; however, a wet-test meter is usually more practical. The wet-test meter shall be periodically tested with a spirometer or a liquid displacement meter to ensure the accuracy. Spirometers or wet-test meters of other sizes may be used, provided that the specified accuracies of the procedure are maintained. Run the metering system pump for about 15 min. with the orifice manometer indicating a median reading as expected in field use to allow the pump to warm up and to thoroughly wet the interior of the wet-test meter. Then, at each of a minimum of three orifice manometer settings, pass an exact quantity of gas through the wet-test meter and record the volume indicated by the dry gas meter. Also record the barometric pressure, the temperatures of the wet test meter, the inlet temperatures of the dry gas meter, and the temperatures of the outlet of the dry gas meter. Record all calibration data on a form similar to the one shown in Figure 5–5 of Method 5 of this appendix and calculate Y, the dry gas meter calibration factor, and $\Delta H_@$, the orifice calibration factor at each orifice setting. Allowable tolerances for Y and $\Delta H_@$ are given in Figure 5–6 of Method 5 of this appendix.

10.1.2 Estimating volumes for initial test runs. For a facility's initial test runs, the regulated facility must have a target or desired volume of gases to be sampled and a target range of volumes to use during the calibration of the dry gas meter. Use Equations 14A–1 and 14A–2 in section 12 of this method to derive the target dry gas meter volume (F_v) for these purposes.

10.1.3 Calibration of anemometers and temperature sensing devices. If the standard anemometers in Method 14 of this appendix are used, the calibration and integrity evaluations in sections 10.3.1.1 through 10.3.1.3 of Method 14 of this appendix shall be used as well as the recording device described in section 2.1.3 of Method 14. The calibrations or complete change-outs of anemometers shall take place at a minimum of once per year. The temperature sensing and recording devices shall be calibrated according to the manufacturer's specifications.

10.1.4 Calibration of flowmeters. The calibration of flowmeters is necessary to ensure that an equal volume of sampled gas is entering each of the individual cassettes and that no large differences, which could possibly bias the sample, exist between the cassettes.

10.1.4.1 Variable area, 65 mm flowmeters or equivalent shall be used. These flowmeters can be mounted on a common base for convenience. These flowmeters shall be calibrated by attaching a prepared cassette, complete with filters and pads, to the flowmeter and then to the system manifold. This manifold is an aluminum cylinder with valved inlets for connections to the flowmeters/cassettes and one outlet to a dry gas meter. The connection is then made to the wet-test meter and finally to a dry gas meter. All connections are made with tubing.

10.1.4.2 Turn the dry gas meter on for 15 min. in preparation for the calibration. Turn the dry gas meter off and plug the intake hole of the cassette. Turn the dry gas meter back on to evaluate the entire system for leaks. If the dry gas meter shows a leakage rate of less than 0.02 ft^3/min at 10 in. of Hg vacuum as noted on the dry gas meter, the system is acceptable to further calibration.

10.1.4.3 With the dry gas meter turned on and the flow indicator ball at a selected flow rate, record the exact amount of gas pulled through the flowmeter by taking measurements from the wet test meter after exactly 10 min. Record the room temperature and barometric pressure. Conduct this test for all flowmeters in the system with all flowmeters set at the same indicator ball reading. When all flowmeters have gone through the procedure above, correct the volume pulled through each flowmeter to standard conditions. The acceptable difference between the highest and lowest flowmeter rate is 5 percent. Should one or more flowmeters be outside of the acceptable limit of 5 percent, repeat the calibration procedure at a lower or higher indicator ball reading until all flowmeters show no more than 5 percent difference among them.

10.1.4.4 This flowmeter calibration shall be conducted at least once per year.

10.1.5 Miscellaneous equipment calibrations. Miscellaneous equipment used such as an automatic recorder/ printer used to measure dry gas meter temperatures shall be calibrated according to the manufacturer's specifications in order to maintain the accuracy of the equipment.

11.0 Analytical Procedure.

11.1 The preferred primary analytical determination of the individual isolated samples or the combined particulate and gaseous samples shall be performed by an automated methodology. The analytical

decontaminate. Treat residual chemical burn as thermal burn.

5.3 Sodium Hydroxide (NaOH). Causes severe damage to eyes and skin. Inhalation causes irritation to nose, throat, and lungs. Reacts exothermically with limited amounts of water.

5.4 Perchloric Acid ($HClO_4$). Corrosive to eyes, skin, nose, and throat. Provide ventilation to limit exposure. Very strong oxidizer. Keep separate from water and oxidizable materials to prevent vigorous evolution of heat, spontaneous combustion, or explosion. Heat solutions containing HClO4 only in hoods specifically designed for $HClO_4$.

216.0 Equipment and Supplies.

6.1 Sampling.

6.1.1 Cassette arrangement. The cassette itself is a three-piece, styrene acrylonitrile cassette unit (a Gelman Sciences product), 37 millimeter (mm), with plastic connectors. In the first section (the intake section), an untreated Gelman Sciences 37 mm, 0.8 micrometer (μm) DM–800 metricel membrane filter and cellulose support pad, or equivalent, is situated. In the second and third segments of the cassette there is placed one each of Gelman Sciences 37 mm, 5 μm GLA–5000 low-ash PVC filter with a cellulose support pad or equivalent product. Each of these two filters and support pads shall have been immersed in a solution of 10 percent sodium formate (volume/volume in an ethyl alcohol solution). The impregnated pads shall be placed in the cassette segments while still wet and heated at 50°C (122°F) until the pad is completely dry. It is important to check for a proper fit of the filter and support pad to the cassette segment to ensure that there are no areas where gases could bypass the filter. Once all of the cassette segments have been prepared, the cassette shall be assembled and a plastic plug shall be inserted into the exhaust hole of the cassette. Prior to placing the cassette into service, the space between each segment shall be taped with an appropriately durable tape to prevent the infiltration of gases through the points of connection, and an aluminum nozzle shall be inserted into the intake hole of the cassette. The aluminum nozzle shall have a short section of tubing placed over the opening of the nozzle, with the tubing plugged to prevent dust from entering the nozzle and to prepare the nozzle for the cassette arrangement leak check. An alternate nozzle type can be used if historical results or scientific demonstration of applicability can be shown.

6.1.2 Anemometers and temperature sensing devices. To calculate the mass flow rate of TF from the roof monitor under standard conditions, anemometers that meet the specifications in section 2.1.1 in Method 14 of this appendix or an equivalent device yielding equivalent information shall be used. A recording mechanism capable of accurately recording the exit gas temperature at least every 2 hours shall be used.

6.1.3 Barometer. To correct the volumetric flow from the potline roof monitor to standard conditions, a mercury (Hg), aneroid, or other barometer capable of measuring atmospheric pressure to within 2.5 mm [0.1 inch (in)] Hg shall be used.

Note: The barometric reading may be obtained from a nearby National Weather Service Station. In this case, the station value (which is absolute barometric pressure) shall be requested and an adjustment for elevation differences between the weather station and the sampling point shall be made at a rate of minus 2.5 mm (0.1 in) Hg per 30 meters (m) [100 feet (ft)] elevation increase or plus 2.5 mm (0.1 in) Hg per 30 m (100 ft) elevation decrease.

6.2 Sample recovery.

6.2.1 Hot plate.

6.2.2 Muffle furnace.

6.2.3 Nickel crucible.

6.2.4 Stirring rod. Teflon'.

6.2.5 Volumetric flask. 50-milliliter (ml).

6.2.6 Plastic vial. 50-ml.

6.3 Analysis.

6.3.1 Primary analytical method. An automated analyzer having the following components or equivalent: a multichannel proportioning pump, multiposition sampler, voltage stabilizer, colorimeter, instrument recording device, microdistillation apparatus, flexible Teflon® heating bath, vacuum pump, pulse suppressers and an air flow system.

6.3.2 Secondary analytical method. Specific Ion Electrode (SIE).

7.0 Reagents and Standards.

7.1 Water. Deionized distilled to conform to ASTM Specification D 1193–77, Type 3 (incorporated by reference in § 60.17(a)(22) of this part). The $KMnO_4$ test for oxidizable organic matter may be omitted when high concentrations of organic matter are not expected to be present.

7.2 Calcium oxide.

7.3 Sodium hydroxide (NaOH). Pellets.

7.4 Perchloric acid ($HClO_4$). Mix 1:1 with water. Sulfuric acid (H_2SO_4) may be used in place of $HClO_4$.

7.5 Audit samples. The audit samples discussed in section 9.1 shall be prepared from reagent grade, water soluble stock reagents, or purchased as an aqueous solution from a commercial supplier. If the audit stock solution is purchased from a commercial supplier, the standard solution must be accompanied by a certificate of analysis or an equivalent proof of fluoride concentration.

8.0 Sample Collection and Analysis.

8.1 Preparing cassette arrangement for sampling. The cassettes are initially connected to flexible tubing. The tubing is connected to flowmeters and a manifold system. The manifold system is connected to a dry gas meter (Research Appliance Company model 201009 or equivalent). The length of tubing is managed by pneumatically or electrically operated hoists located in the roof monitor, and the travel of the tubing is controlled by encasing the tubing in aluminum conduit. The tubing is lowered for cassette insertion by operating a control box at floor level. Once the cassette has been securely inserted into the tubing and the leak check performed, the tubing and cassette are raised to the roof monitor level using the floor level control box. Arrangements similar to the one described are acceptable if the scientific sample collection principles are followed.

8.2 Test run sampling period. A test run shall comprise a minimum of a 24-hour sampling event encompassing at least eight cassettes per potline (or four cassettes per potroom group). Monthly compliance shall be based on three test runs during the month. Test runs of greater than 24 hours are allowed; however, three such runs shall be conducted during the month.

8.3 Leak-check procedures.

8.3.1 Pretest leak check. A pretest leak-check is recommended; however, it is not required. To perform a pretest leak-check after the cassettes have been inserted into the tubing, isolate the cassette to be leak-checked by turning the valves on the manifold to stop all flows to the other sampling points connected to the manifold and meter. The cassette, with the plugged tubing section securing the intake of the nozzle, is subjected to the highest vacuum expected during the run. If no leaks are detected, the tubing plug can be briefly removed as the dry gas meter is rapidly turned off.

8.3.2 Post-test leak check. A leak check is required at the conclusion of each test run for each cassette. The leak check shall be performed in accordance with the procedure outlined in section 8.3.1 of this method except that it shall be performed at a vacuum greater than the maximum vacuum reached during the test run. If the leakage rate is found to be no greater than 4 percent of the average sampling rate, the results are acceptable. If the leakage rate is greater than 4 percent of the average sampling rate, either record the leakage rate and correct the sampling volume as discussed in section 12.4 of this method or void the test run if the minimum number of cassettes were used. If the number of cassettes used was greater than the minimum required, discard the leaking cassette and use the remaining cassettes for the emission determination.

8.3.3 Anemometers and temperature sensing device placement. Install the recording mechanism to record the exit gas temperature. Anemometers shall be installed as required in section 6.1.2 of Method 14 of this appendix, except replace the word "manifold" with "cassette group" in section 6.1.2.3. These two different instruments shall be located near each other along the roof monitor. See conceptual configurations in Figures 14A–1, 14A–2, and 14A–3 of this method. Fewer temperature devices than anemometers may be used if at least one temperature device is located within the span of the cassette group. Other anemometer location siting scenarios may be acceptable as long as the exit velocity of the roof monitor gases is representative of the entire section of the potline being sampled.

8.4 Sampling. The actual sample run shall begin with the removal of the tubing and plug from the cassette nozzle. Each cassette is then raised to the roof monitor area, the dry gas meter is turned on, and the flowmeters are set to the calibration point, which allows an equal volume of sampled gas to enter each cassette. The dry gas meter shall be set to a range suitable for the specific potroom type being sampled that will yield valid data known from previous experience or a range determined by the use of the calculation in section 12 of this method.

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

3. The authority for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, 7411, 7413, 7414, 7416, 7429, 7601 and 7602.

§ 60.17 [Amended]

4. Section 60.17(a)(22) of subpart A is amended by adding the phrase "; Method 14A, par. 7.1" to the end of the paragraph.

5. Section 60.190 is amended by revising paragraph (b) and adding new paragraph (c) to read as follows:

§ 60.190 Applicability and designation of affected facility.

* * * * *

(b) Except as provided in paragraph (c) of this section, any affected facility under paragraph (a) of this section that commences construction or modification after October 23, 1974, is subject to the requirements of this subpart.

(c) An owner or operator of an affected facility under paragraph (a) of this section may elect to comply with the requirements of this subpart or the requirements of subpart LL of part 63 of this chapter.

6. Appendix A to part 60 is amended by revising the appendix heading and adding, in numerical order, Method 14A to read as follows:

Appendix A To part 60—Test Methods

* * * * *

Method 14A—Determination of Total Fluoride Emissions from Selected Sources at Primary Aluminum Production Facilities

Note: This method does not include all the specifications (e.g., equipment and supplies) and procedures (e.g., sampling) essential to its performance. Some material is incorporated by reference from other methods in this part. Therefore, to obtain reliable results, persons using this method should have a thorough knowledge of at least the following additional test methods: Method 5, Methods 13A and 13B, and Method 14 of this appendix.

1.0 Scope and Application.

1.1 Analytes.

Analyte	CAS No.	Sensitivity
Total fluorides	None assigned.	Not determined.
Includes hydrogen fluoride.	007664–39–3	Not determined.

1.2 Applicability. This method is applicable for the determination of total fluorides (TF) emissions from sources specified in the applicable regulation. This method was developed by consensus with the Aluminum Association and the U.S. Environmental Protection Agency (EPA).

2.0 Summary of Method.

2.1 Total fluorides, in the form of solid and gaseous fluorides, are withdrawn from the ascending air stream inside of an aluminum reduction potroom and, prior to exiting the potroom roof monitor, into a specific cassette arrangement. The cassettes are connected by tubing to flowmeters and a manifold system that allows for the equal distribution of volume pulled through each cassette, and finally to a dry gas meter. The cassettes have a specific internal arrangement of one unaltered cellulose filter and support pad in the first section of the cassette for solid fluoride retention and two cellulose filters with support pads that are impregnated with sodium formate for the chemical absorption of gaseous fluorides in the following two sections of the cassette. A minimum of eight cassettes shall be used for a potline and shall be strategically located at equal intervals across the potroom roof so as to encompass a minimum of 8 percent of the total length of the potroom. A greater number of cassettes may be used should the regulated facility choose to do so. The mass flow rate of pollutants is determined with anemometers and temperature sensing devices located immediately below the opening of the roof monitor and spaced evenly within the cassette group.

3.0 Definitions.

3.1 Cassette. A segmented, styrene acrylonitrile cassette configuration with three separate segments and a base, for the purpose of this method, to capture and retain fluoride from potroom gases.

3.2 Cassette arrangement. The cassettes, tubing, manifold system, flowmeters, dry gas meter, and any other related equipment associated with the actual extraction of the sample gas stream.

3.3 Cassette group. That section of the potroom roof monitor where a distinct group of cassettes is located.

3.4 Potline. A single, discrete group of electrolytic reduction cells electrically connected in series, in which alumina is reduced to form aluminum.

3.5 Potroom. A building unit that houses a group of electrolytic reduction cells in which aluminum is produced.

3.6 Potroom group. An uncontrolled potroom, a potroom that is controlled individually, or a group of potrooms or potroom segments ducted to a common primary control system.

3.7 Primary control system. The equipment used to capture the gases and particulate matter generated during the reduction process and the emission control device(s) used to remove pollutants prior to discharge of the cleaned gas to the atmosphere.

3.8 Roof monitor. That portion of the roof of a potroom building where gases, not captured at the cell, exit from the potroom.

3.9 Total fluorides (TF). Elemental fluorine and all fluoride compounds as measured by Methods 13A or 13B of this appendix or by an approved alternative method.

4.0 Interferences and Known Limitations.

4.1 There are two principal categories of limitations that must be addressed when using this method. The first category is sampling bias and the second is analytical bias. Biases in sampling can occur when there is an insufficient number of cassettes located along the roof monitor of a potroom or if the distribution of those cassettes is spatially unequal. Known sampling biases also can occur when there are leaks within the cassette arrangement and if anemometers and temperature devices are not providing accurate data. Applicable instruments must be properly calibrated to avoid sampling bias. Analytical biases can occur when instrumentation is not calibrated or fails calibration and the instrument is used out of proper calibration. Additionally, biases can occur in the laboratory if fusion crucibles retain residual fluorides over lengthy periods of use. This condition could result in falsely elevated fluoride values. Maintaining a clean work environment in the laboratory is crucial to producing accurate values.

4.2 Biases during sampling can be avoided by properly spacing the appropriate number of cassettes along the roof monitor, conducting leak checks of the cassette arrangement, calibrating the dry gas meter every 30 days, verifying the accuracy of individual flowmeters (so that there is no more than 5 percent difference in the volume pulled between any two flowmeters), and calibrating or replacing anemometers and temperature sensing devices as necessary to maintain true data generation.

4.3 Analytical biases can be avoided by calibrating instruments according to the manufacturer's specifications prior to conducting any analyses, by performing internal and external audits of up to 10 percent of all samples analyzed, and by rotating individual crucibles as the "blank" crucible to detect any potential residual fluoride carry-over to samples. Should any contamination be discovered in the blank crucible, the crucible shall be thoroughly cleaned to remove any detected residual fluorides and a "blank" analysis conducted again to evaluate the effectiveness of the cleaning. The crucible shall remain in service as long as no detectable residual fluorides are present.

5.0 Safety.

5.1 This method may involve the handling of hazardous materials in the analytical phase. This method does not purport to address all of the potential safety hazards associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

5.2 Corrosive reagents. The following reagents are hazardous. Personal protective equipment and safe procedures are useful in preventing chemical splashes. If contact occurs, immediately flush with copious amounts of water for at least 15 minutes. Remove clothing under shower and

a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. None of the 23 facilities in this industry is classified as a small entity. The EPA has determined that this rule will not have a significant economic impact on a substantial number of small entities.

F. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

G. Paperwork Reduction Act

The information collection requirements for this NESHAP have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq*. An Information Collection Request (ICR) document has been prepared by the EPA (ICR No. 1767.02), and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division, U.S. Environmental Protection Agency (2137), 401 M Street, S.W., Washington, DC 20460, or by calling (202) 260–2740. The information requirements are not effective until OMB approves them.

The information collection requirements include mandatory notifications, records, and reports required by the NESHAP general provisions (40 CFR part 63, subpart A). These information collection requirements are needed to confirm the compliance status of major sources, to identify any nonmajor sources not subject to the standards and any new or reconstructed sources subject to the standards, to confirm that emission control devices are being properly operated and maintained, and to ensure that the standards are being achieved. Based on the recorded and reported information, EPA can decide which plants, records, or processes should be inspected. These recordkeeping and reporting requirements are specifically authorized by section 114 of the Act (42 U.S.C. 7414). All information submitted to the Agency for which a claim of confidentiality is made will be safeguarded according to Agency policies in 40 CFR part 2, subpart B. (See 41 FR 36902, September 1, 1976; 43 FR 39999, September 28, 1978; 43 FR 42251, September 28, 1978; and 44 FR 17674, March 23, 1979.)

The annual public reporting and recordkeeping burden for collecting this information (averaged over the first 3 years after the effective date of the rule) is estimated to total 52,544 hours for the 23 respondents and to average 2,300 hours per respondent (i.e., per plant). Each respondent is required to report semiannually. The annualized cost of monitoring equipment is estimated as $390,000 per year, with an operation and maintenance cost of $39,000 per year (excluding labor hours included in the previous total).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for collecting, validating, and verifying information; process and maintain information and disclose and provide information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search existing data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

H. Clean Air Act

The NESHAP for primary aluminum reduction plants will be reviewed 8 years from the date of promulgation. This review will include an assessment of such factors as residual health risks, any duplication with other air programs, the existence of alternative methods, enforceability, improvements in air emission control technology and health data, and the recordkeeping and reporting requirements.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference.

40 CFR Part 63

Air pollution control, Hazardous substances, Incorporation by reference, Primary aluminum reduction plants, Reporting and recordkeeping requirements.

Dated: September 19, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, parts 9, 60, and 63 of title 40, chapter I of the Code of Federal Regulations are amended as follows:

PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et. seq.*, 1311, 1313d, 1314, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

2. In § 9.1 the table is amended by adding new entries under the indicated heading in numerical order to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
...	...
National Emission Standards for Hazardous Air Pollutants for Source Categories[3]	
...	...
63.846(d)	2060–0360
63.847(b), (g)	2060–0360
63.848(d)(5), (e), (f)(5)(ii), (g), (k), (m)	2060–0360
63.850	2060–0360
...	...

[3] The ICRs referenced in this section of the Table encompass the applicable general provisions contained in 40 CFR part 63, subpart A which are not independent information collection requirements.

tanks are not included as part of the paste production plant.

Response: Based on comments that pitch storage tanks are not a part of the paste production operation, the EPA reexamined this issue and determined that pitch storage tanks not located within the paste production plant should be defined as a separate affected source. Pitch storage tanks located within the boundaries of the paste production plant, such as day tanks or feed tanks that manage heated pitch, are included in the definition of paste production plant and must be controlled as required for the paste plant. An examination of the available data for pitch storage tanks that are not a part of the paste production plant indicated that the MACT floor and MACT for existing sources was no control. However, one plant was found to have installed controls on a recently constructed pitch storage tank. In addition, the EPA found that a new pitch storage tank planned for installation in Canada would be installing a catalytic oxidizer to control pitch fumes with a control efficiency of at least 95 percent. Consequently, EPA determined that new source MACT for pitch storage tanks would require at least 95 percent control of POM, and these provisions were added to the final rule.

There are several types of emission control techniques that can achieve 95 percent control or better, including combustion devices, dry scrubbers, and carbon adsorption. A question arose about the acceptability of vapor balancing, in which emissions displaced from the pitch storage tank during loading are returned to the tank truck or rail car as it is emptied. This technique would be an acceptable alternative if the owner or operator demonstrates (to the satisfaction of the applicable regulatory authority) that emissions from the transport vessel are controlled when it is refilled and that POM emissions from the pitch storage tank are ultimately controlled at 95 percent or better.

VII. Administrative Requirements

A. Docket

The docket is an organized and complete file of information considered by the EPA in the development of a rulemaking. The docket is a dynamic file because information is added throughout the rulemaking development process. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the proposed and promulgated standards and their preambles, the contents of the docket will serve as the record in case of judicial review. [See section 307(d)(7)(A) of the Act.] The official rulemaking record, including all public comments received on the proposed rule, is located at the address in the **ADDRESSES** section at the beginning of this document.

B. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is "significant" and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Although this is a significant regulatory action OMB has waived Executive Order 12866 review because there was no significant negative comment on the proposed rule.

C. Enhancing the Intergovernmental Partnership Under Executive Order 12875

In compliance with Executive Order 12875, the EPA involved State regulatory experts in the development of the rule. The EPA also coordinated with tribal governments having an interest in the rulemaking. State and local governments and tribal governments are not directly affected by the rule, i.e., they are not required to purchase control systems to meet the requirements of the rule. However, State and local governments will be required to implement the rule; i.e., incorporate the rule into permits and enforce the rule. They will collect permit fees that will be used to offset the resource burden of implementing the rule. Comments were solicited from States and tribal governments and have been considered in the development of the final rule.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments; enabling officials of affected small governments to have meaningful and timely input in developing EPA regulatory proposals with significant Federal intergovernmental mandates; and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. The total annualized cost of the final standard is estimated at $40 million per year—well under the $100 million per year threshold. Thus, today's rule is not subject to the requirements of sections 202 and 205 of UMRA.

E. Regulatory Flexibility

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct

method should be included as an approved method to determine compliance for emissions monitoring, as it is approved for demonstrating similar potlines. The final rule should also allow the method to be used in developing correlations of emissions for alternative monitoring devices, such as the HF CEM. Another commenter asked for the results of the investigation of the use of Alcan cassettes as an alternative to Methods 13 and 14, including information on accuracy, precision, and any biases.

Response: The EPA's intent to evaluate and approve the Alcan cassette method as an acceptable alternative to Method 14 was discussed in the proposal preamble. Numerous comments were received supporting the method, and no comments were received that were opposed to the method as an alternative to Methods 13 and 14. The method had been previously approved for sampling and analysis of TF for the NSPS, and additional data from comparison testing (available in the docket) confirmed it to be an acceptable alternative. Consequently, the EPA has approved the Alcan cassette method as an alternative to Method 14 and has included it as Method 14A in appendix A to 40 CFR part 60.

I. Estimates of Costs for Control and Monitoring

Comment: The industry commenters contended the capital costs of the proposed rule are higher than the EPA's estimates and asked that the estimates presented at promulgation be revised to incorporate their higher estimates of cost. The cost estimates submitted by the Aluminum Association included a capital cost estimate of $555 million and a total annual cost of $126 million compared to the EPA cost estimate of $160 million in capital and a total annual cost of $40 million. Another commenter believes the monitoring costs estimates are low and asked for information on the monitoring scenario that was used for costing.

Response: The limited information supplied with the industry's cost estimates suggests that these costs may be overstated; relevant points are discussed below. The industry's report states that the largest component of their capital cost estimate of $555 million is for removing existing primary control systems and installing dry alumina scrubbers, which they say is 60 percent of the total capital cost. The EPA worked closely with the industry to develop the MACT floor, and based on numerous discussions with the industry, only one plant was identified as likely to install new dry alumina scrubbers. This plant estimated a cost of $120 million; however, this total capital investment includes costs for controls that are not directly attributable to the MACT standard (e.g., it includes the cost of sulfur dioxide scrubbers that are required by the State but are not required by the MACT standard). In addition, there is an indication that the company's decision to install dry alumina scrubbers may not have been made only because of the impending MACT standard but also in consideration of State and local agency concerns. Another company that included the capital cost of new dry scrubbers in its estimate submitted by the Aluminum Association has subsequently confirmed that new dry scrubbers will not be installed to meet MACT. Instead, they will upgrade their existing control equipment at a much lower cost.

Included in the industry's estimate are costs for several potlines that have been idled, and it has not been determined when these potlines will operate at capacity. If they are not restarted, it is obvious that large investments to improve emission control will not be made.

Significant cost estimates are included in the industry's estimates for MACT floor potlines, which are lines that by definition are already achieving the MACT level of control (because the proposed emission limits for MACT are based on the floor). Apparently these companies included the routine capital and operating costs currently being incurred or planned for the near future, probably to meet existing State limits, and attributed this cost to MACT. The cost due to MACT is the incremental cost above what would be spent in the absence of MACT and should not include what is being spent to meet existing regulations.

The few details that are available in the industry's report indicate that some of the estimated capital investment is for improvements or modernization of the process that is not necessarily being done only to improve emission control. In addition, companies will save operating expenses through improved efficiency and operation from these improvements, and no credit (cost savings) is identified for these improvements.

The information available for the cost of dry coke scrubbers indicates that the industry's estimate is overstated by a factor of at least two. The EPA estimate is based on the actual installation cost reported by one company and was verified by another company that obtained an actual construction cost estimate prior to installing a new coke scrubber. The source of the industry's estimate is undocumented. In addition, more recent information from a few plants indicates that they may be able to improve the control efficiency of existing control equipment without installing dry coke scrubbers. The EPA cost estimate assumes that all plants without dry coke scrubbers will install one.

J. Exceeding an Operating Parameter Limit

Comment: Several industry commenters stated that an exceedance of an enforceable operating parameter limit for which the owner or operator has submitted a request for redetermination should not count toward the six allowable exceedances or automatically constitute a violation. Another commenter felt that exceedances should be a matter of enforcement discretion and any mention of what would constitute a violation should be deleted from the rule. One commenter asked for EPA's basis in deciding that a violation has occurred only after there have been six exceedances of a monitoring parameter (in any 6-month reporting period).

Response: The proposal preamble discussed at length why any single exceedance of the parametric monitoring limits should not be considered an exceedance of the emission limit and a violation of the standard. However, a limit was placed on the number of exceedances (six) allowed in a 6-month period to provide incentive to correct any problems with control devices promptly and to avoid recurring difficulties with control devices. Consequently, any exceedance of an enforceable operating parameter limit will count toward the six allowable exceedances, or will constitute a violation if a source has already had six exceedances. The fact that a facility has submitted a request for a redetermination of its operating parameter limits is no shield against enforcement of the existing permit limits. This is because the owner or operator could submit requests for redetermination to avoid a violation whenever control device monitoring indicates a problem. While the commenter is correct in pointing out that EPA may exercise prosecutorial discretion, such discretion is independent from the identification of a violation.

K. Pitch Storage Tanks

Comment: Several commenters requested that the proposed rule be clarified to indicate that pitch storage

revised to give the regulatory authority 60 days after the submission is deemed to be complete to approve or disapprove the submission. The 60-day period applies to the facility's test plan used to determine compliance, requests for changes in operating parameter limits, applications for similar potline monitoring, requests for reduced sampling frequency, and requests for alternative test methods.

F. Relationship to Other Rules

Comment: Several commenters asked about the relationship of the NESHAP to other rules. One commenter asked for discussion of how existing new source review (NSR) and prevention of significant deterioration (PSD) rules affect the NESHAP, and another asked for clarification of what TF emission limit would apply in the event of a modification under the NSPS. Another commenter believes that conversion and installation of equipment in order to comply with this rule should not trigger the NSPS. The commenter requested that the language of the preamble and the rule be changed to reflect that modifications made to affected sources to come into compliance with the primary aluminum NESHAP are exempted from NSPS applicability. Several industry commenters recommended that the final rule include a provision acknowledging that the monitoring provisions in the rule, including the approved methods and alternatives, satisfy the monitoring provisions under section 114 of the Act and the title I monitoring requirements for PM emissions. Other commenters asked that certain alternatives allowed by the rule, such as requests to change monitoring parameters or to implement emission averaging, be identified within the rule as "administrative changes" to the operating permit issued under the part 70 permit program.

Response: The NSR and PSD requirements are not changed or directly affected by the provisions in the NESHAP. However, the NESHAP incorporates the NSPS provisions for primary aluminum reduction plants, which will reduce duplicative monitoring, reporting, and recordkeeping requirements while maintaining equivalent stringency in the applicable emission limits. In addition, the incorporation of the NSPS includes language from part 60 that excludes from the definition of "modification" the addition of an emission control system that results in the reduction of air pollutants, as the commenter suggested. As several commenters suggested, the compliance assurance monitoring (CAM) rule would not apply to the sources and pollutants regulated under the NESHAP. Standards promulgated after 1990 are not subject to the CAM under the assumption that the prescribed monitoring in such rules would meet the requirements equivalent to those required for CAM. The EPA determined that it is not appropriate to specify within the NESHAP whether changes to permits should be considered administrative or as permit modifications. This is accomplished more directly through the permit writer, who can incorporate the alternatives allowed by the NESHAP into the permit. By adding the NESHAP provisions to the permit, the flexibility allowed by the NESHAP is maintained with respect to implementation of emission averaging and other provisions. In addition, the source may suggest to the permit writer that certain flexible provisions are important to the source based on the compliance approach that the source anticipates implementing.

G. Reduced Sampling Frequency

Comment: One commenter did not think there is any need for **Federal Register** publication to provide public notification of approval of reduced sampling frequency. Another commenter asked that criteria for qualifying for reduced sampling frequency be included in the rule and suggested using the approaches that had been used in other rules, with reductions in the frequency after demonstrating compliance over some period of time.

Several commenters recommended that monitoring provisions in the final rule be expanded to allow less frequent monitoring for POM upon demonstration of good emission control performance, as is allowed for TF.

State agency commenters supported the concept of reduced sampling if a facility consistently achieves compliance with an emission limit and has low variability. However, the commenters asked that EPA specify a minimum measure of acceptable variability for reduced sampling frequency to ensure consistent evaluations of these requests and to ease the burden on the regulatory authority.

Response: The EPA agrees that the provisions for qualifying for reduced sampling can be improved by making them easier to implement and that there is no need for publication in the **Federal Register**. In addition, if they are structured properly, provisions for reduced sampling frequency can be used to obtain control performance well below the emission limit, which will result in additional emission reductions.

The EPA reviewed the performance of plants that had qualified for reduced sampling under the NSPS and also examined the average performance, variability, and emission limits achieved by the MACT floor plants. Based on this review, a procedure was developed that was designed to ensure that plants that qualified for reduced sampling had low variability, consistently met the limit, and achieved an average long-term performance that was well below the limit. The proposed rule was revised to allow the monthly sampling of a potline's secondary emissions of TF to be reduced to quarterly if: (1) The overall average after 24 consecutive months of sampling was no more than 60 percent of the applicable limit and (2) no monthly average during the 24 consecutive months exceeded 75 percent of the applicable emission limit.

If an exceedance occurs while under the reduced sampling frequency, the plant must return to monthly sampling for at least 12 months. The plant can qualify for a reduction to quarterly sampling again when: (1) The average of all results over the most recent 24-month period is no more than 60 percent of the limit and (2) no more than one monthly average during the 24-month period exceeds 75 percent of the limit.

As an alternative, the facility can petition for reduced sampling based on the statistical approach given in the EPA guidance document, "Primary Aluminum: Statistical Analysis of Potline Fluoride Emissions and Alternative Sampling Frequency" (EPA–450/3–86–012, October 1986). A copy of this document is included in the docket (docket item II–A–10). This document also is available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

Reduced sampling was not considered for POM because the sampling is already reduced relative to sampling for TF. The rule contains provisions for reducing TF sampling of secondary emissions from monthly to quarterly, and it only requires quarterly sampling for POM secondary emissions (and only annual sampling for POM from the primary control system). The quarterly sampling is necessary to ensure compliance and is particularly important for POM because of the potential risk associated with the POM compounds.

H. Approval of Alcan Cassette Method (Method 14A)

Comment: Several commenters stated that the Alcan cassette monitoring

by some commenters or only the higher limits recommended by other commenters. Instead, both sets of limits were incorporated into the NESHAP with the same language as that used in the amended NSPS. In other words, the lower limits apply unless the owner or operator can meet the exemplary operation requirements as stated in the NSPS, in which case the upper limits would apply. This requires that the owner or operator demonstrate that exemplary operation and maintenance procedures were used with respect to the emission control system and that control equipment was operating properly at the potline during the performance test.

Additional insight into proper operation and maintenance is given in the proposal preamble for the amended NSPS (45 FR 44203), which lists these items as basic to good control of emissions from prebake plants:

(1) Hood covers should fit properly and be in good repair:

(2) The hood exhaust rate should be increased for individual pots when hood covers are removed (if there is an adjustable air damper system);

(3) Hood covers should be replaced as soon as possible after each potroom operation;

(4) Dust entrainment should be minimized during materials handling operations and sweeping of the working aisles;

(5) Only tapping crucibles with functional air return systems should be used; and

(6) The primary control system should be regularly inspected and properly maintained.

For horizontal stud Soderberg potlines, Items (4) through (6) apply, but Items (1) through (3) are replaced by the following because of differences in pot design:

(1) Side and end doors should fit properly and be in good repair;

(2) The exhaust rate should be increased for individual pots when a side or end door is open (if there is an adjustable air damper system); and

(3) Side and end doors should be closed as soon as possible after each potroom operation.

The following variations apply to vertical stud Soderberg potlines:

(1) An ore cover should be maintained on the pot;

(2) The collector skirt and burner should be in good repair; and

(3) Tap holes should not be opened too far in advance of the tap.

Another issue was related to the fact that the NSPS limits apply to a potroom group, whereas the NESHAP limits apply to a potline. Because of many variations in the configuration of potrooms and potlines in the industry, limits for both would result in a somewhat confusing situation of duplicative emission limits and other requirements for certain reduction cells and unnecessary requirements associated with monitoring, reporting, and recordkeeping for both potroom groups and the potline. To resolve this issue, a method was devised in the NESHAP to combine the limit for the NSPS potroom group with that for the NESHAP potline based on the production capacity of the reduction cells that would be subject to each set of limits. The result is a single TF emission limit for the entire potline that maintains equivalent stringency, and it has the additional advantage of allowing the use of the NESHAP potline requirements for monitoring, reporting, and recordkeeping to avoid unnecessary duplication.

The opacity issue was resolved by incorporating the 10 percent limit for potroom groups from the NSPS into the NESHAP. However, the provisions in part 60 that allow the development of an alternative opacity limit when the facility demonstrates that the mass emission limits are being met were also included in the NESHAP. The alternative opacity limit cannot exceed 20 percent. Historically, opacity has been measured routinely for the discharge stacks of primary control systems. However, the EPA has no indication that the opacity of a potroom group roof monitor has been measured using Method 9.

The EPA decided that additional provisions for anode bake furnaces were not necessary because the NESHAP requires that existing furnaces be controlled at levels equivalent to what the NSPS would have required for new, modified, or reconstructed furnaces. This ensures that the MACT floor control technology (dry alumina scrubbers) or the equivalent will be installed on all bake furnaces to control emissions. There was no need to incorporate the NSPS opacity limit of 20 percent for bake furnaces because the MACT floor technology will achieve lower opacity levels, the NESHAP monitoring requirements for the control device are more comprehensive, there is no loss in stringency, and most States already have general opacity limits of 20 percent for stationary point sources.

In consolidating the two rules, the EPA decided to use the sampling frequency and monitoring provisions of the NESHAP. They offer several advantages over the NSPS provisions alone, there is no effect on the relative stringency or the emission reductions achieved, and they will reduce unnecessary monitoring, reporting, and recordkeeping. In addition, the NESHAP requires that any new, modified, or reconstructed potroom group be sampled for TF emissions, which is what the NSPS would have required. Sampling can be performed effectively for the potroom group with the addition of new monitoring equipment or the expansion or adaptation of existing monitoring equipment in the same potline if the sampling system is determined to be representative of the entire potline and if the relevant regulatory authority determines that the sampling system meets the requirements of the reference test methods. In addition, the sampling of that potroom group may be used to determine emissions from the total potline if they are representative of the entire potline. To be representative of the entire potline, the sampling system must not cover only or primarily new reduction cells, which would be expected to have better hooding and emission control than older cells.

E. Time Limit for Approval by the Regulatory Authority

Comment: Several industry commenters recommended that the final rule include a time limit for regulatory authority review, approval, and/or action on submissions. Examples include the compliance test plan, the implementation plan for emission averaging, an application to change control device parameter operating limits, requests for alternative monitoring for similar potlines, requests for approval of alternative methods for sampling and analysis, requests for reduced sampling frequency, and requests to modify the startup, shutdown, and malfunction plan. According to the commenters, each submission should be given automatic approval if no action or response is taken by the applicable regulatory authority within some time period (generally within 30 days of receipt).

Response: The proposed rule contained provisions for a time limit of 120 days for regulatory approval or disapproval of the implementation plan for emission averaging, and this provision was kept in the final rule. In addition, the general provisions in subpart A of 40 CFR part 63 allow the owner or operator to revise the startup, shutdown, and malfunction plan without submitting it for approval. The owner or operator must keep the previous (superseded) version and make it available upon request for a period of 5 years after the revision. With respect to other submissions, the rule was

need to be increased as more data are collected. One commenter questioned the achievability of the POM limit for HSS potlines, and another commenter supported the HSS limits and submitted additional data for the MACT floor potlines to show that it had been achieved. One commenter questioned the POM limits for VSS2 potlines because the limits were based on data from VSS1 potlines.

Response: The data for anode bake furnaces support that the proposed emission limits for both new and existing sources are achievable. Opportunities for improved control other than the installation of dry alumina scrubbers are available, and each owner or operator should investigate these opportunities thoroughly. For example, careful cleaning of recycled anodes to remove fluorides has been demonstrated to reduce fluoride emissions from anode bake furnaces. Careful control and optimization of combustion conditions improve destruction of POM compounds and reduce POM emissions.

The EPA believes that the data show that the POM limit is achievable for the HSS subcategory by plants using the MACT floor technology. Note that the control technology used for the primary system for the MACT floor plant is a dry alumina scrubber, whereas the plant concerned about the achievability uses an electrostatic precipitator. Improvements may be needed in the electrostatic precipitator primary control system and in the potline's capture system to reduce fugitive emissions to achieve the same level of control achieved by the MACT floor plant.

The proposed POM limit for the VSS2 subcategory was based on data from VSS1 potlines because there were no valid data available for POM emissions from VSS2 potlines. Following proposal, POM data were collected for the MACT floor VSS2 potline, and a commenter for the company asked that EPA consider their data in establishing the POM limit. The EPA analyzed the new POM data and concluded that the POM limit for the VSS2 subcategory should be reduced from 3.7 lbs/ton to 3.6 lbs/ton. The emission test reports and EPA's analysis are documented in the rulemaking docket. [See Docket Item IV-B–1.] The EPA appreciates the effort of the company to perform emission testing and to provide data that improve the technical basis of the POM limit for VSS2 potlines.

D. Incorporation of the NSPS

Comment: Several commenters recommended that the NSPS for primary aluminum plants (40 CFR part 60, subpart S) be removed and any necessary provisions be incorporated into the NESHAP. These commenters believed that the higher TF limits in the amended NSPS should be incorporated instead of the lower limits in the original NSPS because the amendment concluded that the original emission limits were not achievable 100 percent of the time. In addition, the NESHAP general provisions (40 CFR part 63, subpart A) require that control equipment be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at least to the level required by all relevant standards. Therefore, these commenters concluded that this requirement overlaps the "exemplary operation" requirement of the NSPS, and by complying with the general provisions, a source qualifies for the higher limits in the NSPS. State agency commenters thought that the more stringent limits in the original NSPS should be used for incorporation into the NESHAP.

Some commenters stated that the opacity requirements of the NSPS were a monitoring provision and not an emission limit. They pointed out that the proposed NESHAP contained more provisions than the NSPS to ensure the control equipment was operating properly, such as monitoring the air and alumina flow to the dry alumina scrubbers and a daily visual inspection of the control equipment rather than only a monthly observation of opacity, which the NSPS requires. Consequently, they believed the opacity standard in the NSPS could be removed without any loss of stringency. Another commenter stated that the NSPS opacity limit was not applicable for wet emission control systems because of interferences and observer error and recommended that facilities with wet emission control systems be allowed to develop an alternative opacity limit if they could demonstrate that the mass emission limit for TF was being met. State agency commenters stated that the opacity standard should be retained when the NSPS is incorporated into the NESHAP.

In general, State agency commenters agreed that the NSPS could be incorporated into the NESHAP, but only if all of the NSPS provisions are retained. These include the lower emission limits in the original NSPS, retention of the modification and reconstruction provisions of part 60, and maintenance of the opacity limits.

Response: The EPA had stated in the original proposal when requesting comments on this issue that incorporating the NSPS into the NESHAP should result in a standard that would be no less stringent than if both standards remained in place. Following the receipt of comments and no indication that anyone was opposed to incorporation of the NSPS, EPA conducted additional discussions with all stakeholders. Representatives from each of the 14 States that have primary aluminum reduction plants were contacted and were provided the opportunity to discuss the issues and provide comments. Similar discussions were held with the Aluminum Association and industry representatives, who also provided comments.

Based on these discussions, a general consensus was reached on how the NSPS could be incorporated into the NESHAP. First, the NSPS was amended to allow an affected facility to comply either with the NSPS or with the special provisions incorporated into the NESHAP. Second, the NSPS requirements were included in a separate section of the NESHAP, and these provisions apply only to emissions of TF. They apply only to Soderberg potlines and prebake potlines in the CWPB2 and CWPB3 subcategories because other types of existing potlines are subject to TF emission limits under the NESHAP that are more stringent than the NSPS limits. Anode bake furnaces are not included because the NESHAP limits for existing bake furnaces are equivalent to those in the NSPS, and the NESHAP limits for new bake furnaces are much more stringent than those in the NSPS.

The result of these discussions was general agreement that the definitions of "modification" and "reconstruction" should be incorporated so that any new, modified, or reconstructed potroom group would trigger the NSPS provisions that have been included in the NESHAP. In other words, any potroom group that would have become subject to the NSPS because of the part 60 provisions would become subject to the special provisions incorporated into subpart LL of part 63. This was accomplished by adding definitions for "potroom group modification" and "potroom group reconstruction" that matched the requirements in part 60. The modification would occur if there was an increase in the total or overall TF emissions from the potroom group (i.e., changes that result in a decrease in emissions in one part of the potroom group and an increase in another part of the group are not modifications if total emissions from the group do not increase).

The EPA decided not to incorporate only the lower NSPS limits as suggested

prebake potlines (CWPB2), for potlines producing high-purity aluminum (CWPB3), and for the vertical stud Soderberg potlines (VSS2).

Response: The development of subcategories is discussed in detail in the Basis and Support Document. In general, the subcategories are based primarily on differences in the process operation, process equipment, emissions, and the applicability of control devices.

A distinction was made between the larger and more modern prebake potlines in CWPB1 and the smaller and older potlines in CWPB2. The CWPB2 potlines have somewhat higher emissions than the CWPB1 potlines because they are more difficult to control and there are more opportunities for fugitive emissions to escape. A major factor is that these smaller potlines require more frequent anode changes and more frequent opening of the reduction cells, both of which result in more fugitive emissions' escaping from the cells.

The potlines in the CWPB3 subcategory that produce high-purity aluminum can do so only because they use wet scrubbers as the primary control device and do not return the contaminants removed with the pollution control residue back to the process. In contrast, the potlines in the CWPB1 subcategory use dry alumina scrubbers as the primary control device and return pollution control residue, including contaminants and fluorides, back to the process. If the CWPB3 potlines were forced to install dry alumina scrubbers, an adequate quantity of high-purity aluminum could not be produced and their market would be lost.

A distinction was made between two types of vertical stud Soderberg potlines (VSS1 and VSS2) because of differences in the applicability of control devices. The VSS1 group of potlines uses wet roof scrubbers to control fugitive emissions from the cells, and the VSS2 group of potlines uses work practices and equipment maintenance to control the escape of fugitive emissions from the cells (i.e., they focus on pollution prevention for emission control). A major concern in requiring the installation of wet roof scrubbers on the VSS2 potlines was that other plants with wet roof scrubbers had reported operational problems in cold weather (i.e., freezing conditions), and the VSS2 potlines operate in the cold climate of northern Montana. Consequently, the technology was judged not to be adequately demonstrated for the VSS2 potlines. Another concern was that roof scrubbers could provide a disincentive for the VSS2 potlines to continue their efforts to prevent the escape of emissions because the emissions would be subsequently controlled by the scrubbers. Currently, the VSS2 potlines have much lower levels of fugitive emissions in terms of the quantity that actually escapes from the reduction cells compared to the VSS1 potlines, which rely in large part on the roof scrubbers for additional fugitive emission control.

B. Format of the Standard

Comment: Two State commenters asked that EPA consider developing work practice standards for potlines, and some commenters also suggested that an emission limit be developed for paste plants instead of an equipment standard.

Other commenters supported the development of an equipment standard for paste plants. Commenters also asked that EPA consider alternatives for the paste plant that would allow and encourage pollution prevention, as well as other control alternatives that might be equivalent to or better than the equipment standard that was proposed (dry coke scrubber).

Response: Section 112(h) of the Act only allows development of a design, equipment, work practice, or operational standard when it is not feasible or practicable to establish an emission standard. Consequently, a work practice standard was not developed for potlines because there was an extensive database on TF emissions on which to base an emission standard. An emission standard allows the owner or operator to meet the emission limit using any combination of control techniques, including work practices, upgrading equipment, process modifications, pollution prevention, etc. It also provides flexibility for developing innovative controls or pollution prevention measures in the future that may be more cost effective by not mandating work practice techniques. The owner or operator will find it necessary to have adequate work practices in place to meet the emission limits in the rule; consequently, it is not necessary to develop a work practice standard.

The first choice was also the development of an emission standard for paste production plants; however, there were too few POM data (only two data points) to develop defensible and achievable limits. One reason for this is that the control technology is relatively new, and there were no data collected by EPA test methods prior to this rulemaking. Therefore, the development of a quantitative standard was not feasible or practicable. The problem was also complicated by the numerous variations in the design and operation of paste plants. However, the available information and engineering judgement indicated that the best POM control technology in use for paste plants was the dry coke scrubber, which was determined to represent MACT. For these reasons, an equipment standard requiring the use of a dry coke scrubber or equivalent alternative control for paste production was developed under section 112(h) of the Act.

Comments were received from both the industry and States asking for consideration of control techniques, including pollution prevention, that might provide a level of control equivalent to or better than a dry coke scrubber. After consideration, EPA decided that a streamlined approach could be used to implement more efficiently section 112(h)(3) of the Act, which allows the development of an alternative means of emission limitation if it achieves an emission reduction at least equivalent to that achieved by the design, equipment, work practice, or operational standard. An emission limit for POM in lb/ton of paste was developed from the limited data associated with two of the best controlled plants in the industry. Although the limit may represent a level of emission control more stringent than the equipment standard that was determined to be MACT, an alternative standard in lb/ton of paste will provide opportunity for pollution prevention measures (such as reducing the quantity of POM used in paste production). The alternative standard also provides the opportunity to qualify other types of emission controls that might be developed in the future that are more efficient than the dry coke scrubber.

The alternative limit in lb/ton does not preclude plants from petitioning for other alternative means of emission limitation under section 112(h)(3) of the Act based on demonstrating an equivalent or greater emission reduction. However, it provides one method to implement the provisions for alternative standards more efficiently. As required in section 112(h)(4) of the Act, when EPA has sufficient data to replace both parts of the current standard for paste production plants with a quantitative emission limit, EPA will revise that standard accordingly.

C. Achievability of Emission Limits

Comment: Several commenters expressed concern that the emission limits for anode bake furnaces might not be achievable and requested that the rule acknowledge that these limits may

J. Display of OMB Control Numbers

In a separate rulemaking action taken in conjunction with the final rule adopting a NESHAP for primary aluminum reduction plants, EPA is amending the table of currently approved information collection request (ICR) control numbers issued by the Office of Management and Budget (OMB) for various regulations. This separate amendment updates the table to accurately display those information requirements contained in the NESHAP. This display of the OMB control number and its subsequent codification in the Code of Federal Regulations satisfies the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and OMB's implementing regulations at 5 CFR 1320.

The ICR was previously subject to public notice and comment prior to OMB approval. As a result, EPA finds there is "good cause" under section 553(b)(B) of the Administrative Procedure Act [5 U.S.C. 553(b)(B)] to amend this table without prior notice and comment. Due to the technical nature of the table, further notice and comment would be unnecessary. For the same reasons, EPA also finds that there is good cause under 5 U.S.C. 553(d)(3).

V. Summary of Impacts

Nationwide emissions from primary aluminum potlines are estimated at 6,400 tpy of TF. After implementation of the final standards, these emissions will decrease by almost 50 percent to 3,400 tpy. Polycyclic organic matter emissions will be reduced by about 45 percent, from 3,200 tpy to 1,800 tpy. TF emissions from the anode bake furnaces are estimated at 700 tpy; POM emissions are estimated at 555 tpy. After control of all bake furnaces, TF emissions will be reduced by 97 percent, and POM emissions will be reduced by 84 percent. Polycyclic organic matter emissions from paste production plants, estimated at 147 tpy at baseline, will be reduced by about 130 tpy, to about 16 tpy—an 89 percent reduction from current levels. Emissions of other HAPs included in the TF and POM emissions will also be reduced, as will non-HAP pollutants such as PM. For example, PM emissions will be reduced by 16,000 tpy.

The generation of solid waste and wastewater will be reduced when at least one plant replaces its wet scrubber system with a dry alumina scrubber. The dry alumina scrubber captures fluorides and other pollutants and returns them to the reduction cell. The proposed rule is estimated to have no significant effect on energy consumption.

The total capital cost of the proposed rule is estimated as about $160 million, with a total annualized cost of $40 million per year. As discussed in section VI.I of this document, cost estimates supplied by the industry's trade association were much higher than the EPA estimates. The major cost impacts for potlines are expected to come from the installation of dry alumina scrubbers for the primary control system at one plant and from work practices, operating procedures, maintenance and repair, and equipment modifications at most plants. A few plants may incur capital costs to replace or upgrade hoods or doors and to install automated equipment for improved emission control.

The cost estimates for paste production assume that the 18 plants without dry coke scrubbers for controlling POM emissions will each install one. However, some plants may be able to meet the performance standard with dry alumina scrubbers or other control devices, or they may be able to utilize many of the components of their existing system. The estimated cost for control of anode bake furnaces assumes that the 5 of 17 plants without a dry alumina scrubber must each install one.

Currently, about one-third of existing potlines are sampled for TF regularly. Because of the flexibility provided in the rule, many plants are expected to take advantage of the use of HF CEMs and Alcan cassettes for similar potlines, both of which are much less expensive than manual sampling using Methods 13 and 14. The nationwide capital cost estimate of $7 million for monitoring equipment includes new Method 14 manifolds, HF CEMs, and Alcan cassettes. The total annualized cost of monitoring (including capital recovery) is estimated as about $4 million per year after all plants are subject to the rule. These costs may be reduced significantly as plants qualify for reduced sampling frequency (e.g., quarterly instead of monthly). The CEM will have value as a process monitoring tool in addition to its use for monitoring to determine compliance.

The market price increase calculation indicated that implementing the controls will result in a primary aluminum market price increase of less than 1 percent. As a result of the low market price increase and relatively inelastic demand, the corresponding changes in output, employment, and total revenue were also low (all less than 1 percent). Therefore, the economic impact analysis estimates that the rule will not result in significant economic impacts for the primary aluminum industry.

VI. Summary of Responses to Major Comments

The EPA proposed the NESHAP for primary aluminum reduction plants on September 26, 1996 (61 FR 50586). The proposed regulatory text of the rule, the Basis and Purpose Document, and the Technical Support Document that presented information used in developing the proposed rule were made available to the public for review and comment. A 60-day comment period from September 26, 1996, to November 25, 1996, was provided to accept written comments from the public on the proposed rule. The opportunity for a public hearing was provided to allow interested people to present oral comments to the EPA on the rulemaking. However, the EPA did not receive a request for a public hearing, so a public hearing was not held.

The EPA received a total of 15 comment letters regarding the proposed NESHAP for primary aluminum reduction plants. A copy of each comment letter is available for public inspection in the docket for the rulemaking (Docket No. A–92–60; see the **ADDRESSES** section of this document for information on inspecting the docket). The EPA has had follow-up discussions with various commenters regarding specific issues initially raised in their written comments that were submitted to the Agency during the comment period. Copies of correspondence and other information exchanged between the EPA and the commenters during the post-comment period are available for public inspection in the docket for the rulemaking.

All of the comments received by the EPA were reviewed and carefully considered by the Agency. Changes to the rule were made when the EPA determined it to be appropriate. A summary of responses to selected major comments received on the proposed rule is presented below. Additional discussion of the EPA's responses to public comments is presented in the Background Information Document (see the **ADDRESSES** section of this preamble).

A. Subcategories

Comment: Several commenters supported the subcategories that were developed for potlines, and two commenters questioned the number of and basis for the subcategories. Specific questions were raised about the subcategories for the older vintage

applicable limit. If emissions in excess of the applicable TF limit occur while performing quarterly sampling (under an approved alternative), the owner or operator must return to the monthly sampling schedule until another request for an alternative sampling frequency is approved.

The final standard requires the monitoring of control device parameters. For example, plants with dry alumina scrubbers must perform a daily visual inspection of the stack and install devices to monitor the flow of alumina and air. The control device parameters are evaluated from data collected during the initial performance test and from historical performance tests to determine upper and/or lower limit(s), as appropriate, for each process parameter. The owner or operator may redetermine the upper and/or lower operating limits, as appropriate, based on historical data and other information and submit an application to the regulatory authority to change the applicable limit(s). A corrective action program is triggered if the control device is operating outside of the acceptable range for the specified parameters. Failure to initiate corrective actions within 1 hour after exceeding the limit is a violation. A violation also occurs if the operating limit for a parameter is exceeded more than six times in any 6-month reporting period. For the purpose of determining the number of exceedances, no more than one exceedance will be attributed in any given 24-hour period.

A clarification was made to § 63.848(f) with respect to the selection of monitoring parameters and frequency. Whenever practicable, the EPA expects the owner or operator to install a continuous parameter monitoring system as defined in the general provisions and this subpart. At a minimum, the owner or operator must submit a description of the parameters and a rationale for selecting the operating limits and monitoring frequency. A discussion of how the selected parameters would relate to emission controls must be included.

The owner or operator also must install devices to measure the daily weight of aluminum produced and the weight of anodes placed in the furnace for an operating cycle. The total weight of all anodes placed in the furnace may be measured, or the number of anodes placed in the furnace and a representative weight may be measured to determine the total weight.

G. Test Methods

Section 63.849 of the final rule adds Method 14A to appendix A of 40 CFR part 60 as an approved alternative method for measuring TF from potroom roofs. Minor changes were made to Method 315 (added to appendix A of 40 CFR part 63) as a result of public comment. For example, section 6.1 of Method 315 was revised to acknowledge that the use of grease for sampling train components is not recommended because many greases are soluble in methylene chloride. Section 6.2 of Method 315 was revised to include the use of Teflon® bristle brushes and tetrafluoroethylene (TFE) wash bottles. A Buchner fritted funnel was substituted for Allihin tubes in section 6.3.8 and other sections.

Section 63.849(e) of the final rule was clarified in terms of procedures and criteria to qualify an alternative test method. The alternative method must be evaluated from simultaneous sampling using a reference test method. Approval is granted only if the owner or operator demonstrates that the level of emission control from an alternative method and alternative emission limit is the same as or better than the level that would have otherwise been achieved.

H. Time Limit for Approval or Disapproval of Submissions

The proposed rule was revised to add a new section (§ 63.851) that places a 60-day limit on the amount of time for the regulatory authority to indicate the need for additional time to review the applications and requests for changes allowed under this rule or to approve or disapprove applications and requests for changes allowed under the rule. The 60-day period begins after the owner or operator has been notified that the submission is complete. This provision applies to the compliance test plan, an application to change control device parameter operating limits, requests for alternative monitoring for similar potlines, requests for approval of alternative methods for sampling and analysis, and requests for reduced sampling frequency.

I. Notification, Reporting, and Recordkeeping Requirements

Notification, reporting, and recordkeeping requirements for MACT standards are included in the NESHAP general provisions (40 CFR part 63, subpart A). Section 63.850 of the final standard incorporates all of these provisions, except that the existing performance specifications for CEM are not applicable to an HF CEM because such specifications have not yet been developed for that device.

The notification requirements include one-time notifications of applicability, intent to construct or reconstruct, anticipated startup date, actual startup date, date of performance test, compliance status, compliance approach (if applicable), and the intent to use an HF CEM (if applicable) for each affected source. The notification of special compliance obligations was deleted because it does not apply to this source category. The proposed rule also was revised to indicate that the notification of the intent to use an HF CEM was a one-time event per affected source.

The owner or operator is required to submit a report of performance test results (which can be sent as part of the compliance status notification), an annual summary of all subsequent tests, and semiannual reports of excess emissions, if any excess emissions occurred. If excess emissions are reported, quarterly reports are required until compliance has been demonstrated for 1 year. A startup, shutdown, and malfunction plan also would be required with semiannual reports of events that are not managed according to the plan. The plan must also include the corrective actions to be taken if the limit for a control device's operating parameter is exceeded.

Recordkeeping requirements for all MACT standards are established in § 63.10(b) of the general provisions. In addition to these requirements, the standard requires plants to maintain records of information needed to determine compliance. Section 63.850(e)(4)(ii) of the final rule clarifies that the owner or operator must maintain the daily production rate of green anode material placed in the anode bake furnace (rather than the production rate for each operating cycle). A new recordkeeping requirement was also added in response to public comment. Section 63.850(e)(4)(xv) requires records documenting the portion of TF that is captured and measured as particulate matter and the portion that is captured and measured as gaseous. This requirement provides potentially useful information to EPA and the States at no additional cost.

All records must be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records for the most recent 2 years must be retained onsite; records for the remaining 3 years may be retained offsite but still must be readily available for review. The files may be retained on microfilm, on microfiche, on a computer, or on computer or magnetic disks.

potline during the calendar month that includes the three runs of a performance test. The rate of green anode material introduced into the furnace is determined by dividing the number of operating hours in the calendar month into the weight of green anode material used during the calendar month in which the performance test was conducted.

No changes were made to the proposed performance test provisions for paste production in § 63.847(f) of the final rule. Initial compliance with the equipment standards for new and existing plants is demonstrated through site inspections(s) and review of site records by the applicable regulatory authority.

A new paragraph, § 63.847(g), was added to describe compliance provisions for new pitch storage tanks. The owner or operator may elect one of two methods of demonstrating compliance: (1) Submit a design evaluation documenting that the control device being used achieves the required control efficiency for POM (95 percent or more) during a reasonably expected maximum filling rate; or (2) submit the results of a performance test. Specific information to be included under either method of compliance is described in the rule. The owner or operator also would include a description of the parameters to be monitored to ensure the control device is being properly operated and maintained, an explanation of the criteria used to select that parameter, and the frequency with which monitoring will be performed.

Section 63.846(g) of the proposed rule was renumbered as § 63.847(h) in the final rule to accommodate the addition of the preceding paragraph. Minor changes were made to clarify the wording in paragraph (h), which requires that the owner or operator determine the parametric operating limits and monitoring frequency for each control device. Section 63.847(h)(1) of the final rule clarifies that for potlines and anode bake furnaces, the owner or operator must determine upper and/or lower operating limits, as appropriate, for each monitoring device "for the emission control system" from the values recorded during each of the runs performed during the initial performance test and from historical data from previous performance tests. The wording of § 63.847(h)(2) also was clarified to require the owner or operator of a paste production plant to specify parameters to be monitored and operating limits for the emission control device (rather than the emission capture and control devices). References to the part 70 operating permit were deleted.

F. Emission Monitoring

Few changes were made since the proposal in the emission monitoring requirements of § 63.848. The final standard requires the owner or operator to perform monthly sampling of TF secondary emissions from each potline using Methods 13 and 14 (40 CFR part 60, appendix A) or an approved alternative method. Emissions of POM from Soderberg potlines are monitored by performing quarterly sampling of POM using Method 315 or an approved alternative method. The monthly average for TF and the quarterly average for POM are computed using the results of at least three runs per month for secondary emissions of TF and at least one run per month (three runs per quarter) for POM from Soderberg potlines, the aluminum production rate, and the most recent compliance test for the primary control system. Sections 63.848(a) and (b) clarify that the duration of each run for secondary emissions must cover a complete operating cycle. Under § 63.848(b), the primary control system for POM emissions must be sampled over an 8-hour period, unless site-specific factors dictate an alternative sampling time, subject to the approval of the regulatory authority. Annual sampling of TF using Method 13 and POM (for Soderberg potlines) using Method 315 is required for the primary emission control system for potlines. Annual sampling of TF using Method 13 and POM using Method 315 is required for the anode bake furnace stack.

Section 63.848(d) of the rule provides an alternative to monthly monitoring of TF or POM secondary emissions from each potline by allowing the owner or operator to conduct a monthly performance test for one potline using reference test methods and to monitor similar potline(s) using approved alternative methods. In response to public comment, the criteria for similar potlines were revised to require that their structure, operability, type of emissions, and volume and concentration of emissions be substantially equivalent.

Section 63.848(d) provides that a similar potline is to be monitored using an alternative method meeting the requirements in the rule. An approved alternative may include an HF continuous emission monitor (CEM). Because the Alcan cassette method is included in the final rule as Method 14A, references to this method as an approved alternative for monitoring similar potlines were unnecessary and were deleted from the rule.

To show that another method is an acceptable alternative, the owner or operator must develop a correlation with results from the applicable methods in the rule (such as Methods 13, 14, and 315) to the satisfaction of the regulatory authority. For fluoride measurements, the alternative method must account for or include gaseous fluoride and cannot be based on measurement of particulate matter or particulate fluoride alone because HF, the HAP of interest, is in gaseous form. The final rule also requires the owner or operator to derive an alternative limit for the HF CEM or other alternative monitoring method. The owner or operator must demonstrate that the alternative method and limit will result in a level of emission control that is the same as or better than the level that would have otherwise been achieved. After demonstrating that the potlines are similar, EPA methods must be used to monitor one potline, and the other similar potlines must be monitored using an approved alternative procedure.

Under § 63.848(e) of the final standard, the owner or operator of a plant that demonstrates consistent compliance with an applicable emission limit and low variability may apply for a reduced sampling frequency, such as quarterly sampling instead of monthly sampling. This section of the proposed rule was changed after proposal to provide a simplified procedure to obtain reduced sampling frequency, including removal of the requirement to publish the approval of reduced sampling in the **Federal Register**. This reduced sampling provision was clarified to apply only to the monthly sampling requirement for TF from potroom roofs. If a facility achieves a long-term average over 24 months of sampling that is no more than 60 percent of the applicable limit and no monthly average exceeds 75 percent of the limit, then monthly sampling for TF can be reduced to quarterly sampling.

Proposed provisions governing excess emissions also were revised. Under the final rule, if emissions in excess of the applicable TF limit occur while performing quarterly sampling (under an approved alternative), the owner or operator must return to monthly sampling for at least 12 months and may reduce to quarterly sampling when: (1) The average of all tests performed over the most recent 24-month period does not exceed 60 percent of the applicable limit and (2) no more than one monthly performance test in the most recent 24-month period exceeds 75 percent of the

This standard is not the first NESHAP to include provisions permitting emission averaging. However, the mechanism by which EPA has previously permitted owners and operators to average emissions has been to define the affected source governed by the standard broadly enough such that it includes all emission points to be averaged. Under this model, which was first employed in the Hazardous Organics NESHAP ("HON"), 59 FR 19402, 19425–34, April 22, 1994, compliance by particular units within a broadly defined source is only an element in determining the overall compliance with the standard by the aggregate source. For this type of standard, conformity of the quantitative standard to the MACT floor provision in section 112(d)(3) is determined for the source as a whole, and averaging or trading between discrete emission points within the source presents no potential conflict with the MACT floor provision.

The HON approach to averaging affords substantial flexibility, by permitting averaging of dissimilar emission points and differing pollutants. However, there are also potential disadvantages to this approach to averaging. Heterogeneous emission points are deemed to be part of one affected source, rather than discrete sources that can be subcategorized and regulated in relatively homogeneous groups. New sources often must be defined more narrowly than existing sources in order to ensure that state-of-the-art controls are required for technically discrete new units.

The final primary aluminum NESHAP takes a different approach to averaging from the HON approach. In this standard, owners or operators are permitted to average across sources in determining overall compliance with the standard. In the HON rulemaking, EPA expressed concern that averaging across sources could be incompatible with the MACT floor provisions. However, upon further analysis, EPA has decided that averaging across affected sources is neither expressly permitted nor expressly precluded by the Clean Air Act. Thus, in construing the statute, EPA has focused instead on identifying those circumstances in which averaging across sources would be fully consistent with the overall statutory intent.

In general, EPA has concluded that it is permissible to establish within a NESHAP a unified compliance regimen that permits averaging or trading across affected sources subject to the standard under certain conditions. Averaging across affected sources is permitted only if it can be demonstrated that the total quantity of any particular HAP that may be emitted by that portion of a contiguous major source that is subject to the NESHAP will not be greater under the averaging mechanism than it would be if each individual affected source complied separately with the applicable standard. Under this rigorous test, the practical outcome of averaging is equivalent in every respect to compliance by the discrete sources, and the statutory policy embodied in the MACT floor provisions is therefore fully effectuated. A construction of the Act which permits EPA to establish a unified compliance regimen in these limited circumstances promotes economic efficiency and has no adverse environmental consequences. In a NESHAP incorporating such a unified compliance regimen, EPA would construe compliance with the overall regimen to constitute compliance for each of the affected sources.

Strict limits on the scope and nature of averaging across sources are necessary to ensure that no HAP is emitted by that portion of a major source subject to a NESHAP in quantities that are greater than those that would result from compliance by each discrete affected source within the facility. These limits include: (1) No averaging can be permitted between differing pollutants, (2) no averaging can be permitted between sources that are not part of the same major source, (3) no averaging can be permitted between sources within the same major source that are not subject to the same NESHAP, (4) statistical discounts must be derived and applied to account for the variability in emissions by the sources to be averaged, and (5) no averaging can be permitted between existing sources and new sources.

This NESHAP fully satisfies each of these criteria. Accordingly, EPA has concluded that the averaging of emissions across affected sources permitted by this NESHAP is consistent with the Clean Air Act. In addition, EPA notes that the provision in this NESHAP that requires each facility that intends to utilize emission averaging to submit an implementation plan provides additional assurance that the necessary criteria will be adhered to.

E. Compliance Provisions

Compliance with the standard must be demonstrated at startup for new sources and in 2 to 4 years from the effective date of the final rule for existing sources. All existing plants would be allowed at least 2 years. An extension for a fourth year may be granted by the regulatory authority under section 112(i)(3)(B) of the Act.

Few changes were made to § 63.846 of the proposed rule concerning requirements for performance tests. Following approval of a site-specific test plan, § 63.847 of the final rule requires the owner or operator to conduct an initial performance test during the first month following the compliance date. A clarification was made to § 63.846(d) of the proposed rule (§ 63.847(c) of the final rule) that not all of the primary emission control devices have to be sampled during the first month of compliance. If valid emission test results are available for the control device from tests during the preceding 12 months, those results can be used to determine the contribution of the primary control system to the total emissions for the initial performance test.

Section 63.847(d), which contains instructions for determining compliance, also includes clarifying revisions. Sections 63.847(d)(1) of the final standard clarifies that to determine compliance for TF emissions from potlines, the owner or operator must compute and record the average of at least three runs each month for secondary emissions and at least three runs each year for the primary control device. Section 63.847(d)(2) clarifies that to determine compliance for POM emissions from Soderberg potlines, the average of at least three runs each quarter (one run per month) for secondary emissions and at least three runs each year for the primary control system is required. Compliance with the applicable emission limits for anode bake plants is determined by the average of at least three runs each year. Section 63.847(d)(3) clarifies that the provisions for previous control device tests include anode bake furnaces as well as potlines.

Section 63.847(e) of the final rule also includes minor changes to clarify the equations used to determine compliance. Editorial changes were made to correct misnumbering of Equations 1 and 2. In Equation 1, the definition of Q_{sd} was clarified to read as the volumetric flow rate of effluent gas "corresponding to the appropriate subscript location" with units of dry standard cubic meters per hour (dscm/hr) or dry standard cubic feet per hour (dscf/hr). The instructions for determining the aluminum rate (P) in §§ 63.846(e)(6) and (e)(7) also were revised. Sections 63.847(e)(6) and (e)(7) of the final rule require the owner or operator to determine the aluminum production rate by dividing the number of hours in the calendar month into the weight of aluminum tapped from the

concluded that it was not feasible or practicable to develop a defensible quantitative emission limit because there were too few POM data available. However, the available information and engineering judgement indicated that the best POM control technology in use for paste plants was the dry coke scrubber, which was determined to represent MACT.

The proposed provisions in § 63.843(b)(3) that qualify alternatives to the dry coke scrubber for paste production plants were revised in response to public comments to encourage pollution prevention measures, such as reducing the quantity of POMs used in paste production. The control efficiency standard that was proposed was replaced with POM emission limits for batch and continuous mixers in terms of pounds of POM per ton of paste. With this approach, an affected plant would not be penalized for using pollution prevention measures that reduce uncontrolled emissions. This change will encourage innovative or pollution prevention measures, such as reducing the quantity of POMs used in the paste operation. The alternative limit in lb/ton does not preclude plants from petitioning for other alternative means of emission limitation under section 112(h)(3) of the Act based on demonstrating an equivalent or greater emission reduction. A detailed discussion is provided in section VI.B of this document.

Section 63.844 of the proposed rule was revised to include new paragraph (d) establishing standards for new pitch storage tanks. New paragraph (d) requires that each new pitch storage tank be equipped with an emission control system designed and operated to reduce inlet emissions of POM by 95 percent or greater. Compliance and monitoring provisions are summarized in sections IV.E and IV.F of this document.

C. Incorporation of the NSPS

In response to comments on this issue, the EPA incorporated the provisions of the new source performance standard (NSPS) in subpart S of part 60 into a new section (§ 63.845) of the final rule and added appropriate definitions from the NSPS. Also, the NSPS was amended to allow the owner or operator to comply with either the NSPS or with the special provisions that were incorporated into § 63.845. With this change, any modified, reconstructed, or new potroom group that would have triggered the NSPS may now use the special provisions in the NESHAP to demonstrate compliance. Sampling and monitoring were streamlined by using the MACT requirements and by developing a single emission limit for a potline rather than overlapping limits for both the potline and the affected potroom group. The NSPS opacity limit was also incorporated.

D. Emission Averaging

Only one change was made to the emission limits in § 63.845 of the proposed NESHAP pertaining to emission averaging for potlines and anode bake furnaces. The POM limits for the VSS2 subcategory were reduced based on data collected for the MACT floor potline from that subcategory. The proposed limits are summarized in Tables 3 and 4 of the proposal preamble document (61 FR 50591, September 26, 1996). This section is renumbered as § 63.846 in the final rule.

The final standard contains provisions allowing the owner or operator to demonstrate compliance through averaging emissions of TF from all existing potlines, POM from existing Soderberg potlines, and TF and POM from existing anode bake furnaces (i.e., averaging is not allowed for new sources). Averaging between pollutants (TF and POM) is not allowed. The final standard also limits averaging to like sources (i.e., TF emissions from a potline can be averaged only with TF emissions from another potline at the same plant site). Emission averaging would not be allowed in any State that selects to exclude this option from its approved permitting program.

Monthly TF and quarterly POM limits for each group of potlines (two or more lines) are included in the rule. Under this approach, the owner or operator samples TF and/or POM emissions from at least three runs each month/quarter for each potline in the group to determine the average emissions from each potline. A minor revision was made to the wording in § 63.845(d)(2) of the proposed NESHAP (§ 63.846(d)(2) of the final rule) to clarify that monthly average potline emissions are determined from *each* potline from at least three runs *per potline* each month for TF secondary emissions and/or the quarterly average emissions from at least one run each month for POM emissions using the procedures and methods in §§ 63.847 and 63.849 of the final rule (emphasis added). As proposed, the sum of emissions from each potline is divided by total aluminum production from all of the potlines for the month (or for the quarter for POM) to determine the emissions in lb/ton for comparison to the applicable emission limit.

Section 63.846(d) of the NESHAP describes the requirements for an emission averaging implementation plan. The proposed standard required that unless an operating permit application has been submitted, the owner or operator must develop and submit an implementation plan for emission averaging to the applicable regulatory authority for review and approval. This language was revised to remove the misleading phase, "unless an operating permit application has been submitted" to clarify that each owner or operator desiring to participate in emission averaging must develop and submit an implementation plan. Paragraph (d)(2) of this section clearly states that the owner or operator must include the specified information in an implementation plan or in the application for an operating permit.

The language in § 63.845(d)(1) of the proposed NESHAP pertaining to the deadline for submission of the plan also was revised. Section 63.846(d)(1) of the final rule clarifies that the plan is to be submitted 6 months before the facility intends to comply with the emission averaging limits rather than 6 months before the applicable compliance date.

The content of the implementation plan is described in § 63.846(d)(2) of the final rule. The proposed rule required that this information include the emission sources to be averaged, the applicable limit assigned to each averaging group, the specific control technology or measure to be used for each source in the group, the results of an initial performance test, the operating parameters to be monitored (with additional information if an alternative parameter is monitored), and a demonstration that compliance with each of the applicable limits will be achieved under representative operating conditions. A clarifying change was made in the final rule to delete the requirement for submission of the results of an initial performance test to determine the TF or POM emissions and emission reduction from each source in the averaging group. This provision was replaced with a requirement for a test plan to measure TF or POM emissions in accordance with the performance test requirements in § 63.847. Section 63.847 requires a performance test to be conducted during the first month following the applicable compliance date.

As proposed, the owner or operator may submit a request to revise the plan, or if emission averaging is not selected initially, the owner or operator may submit a request to implement emission averaging after the compliance date.

each category or subcategory of major and area sources. Section 112(d)(1) of the Act provides that the Administrator may distinguish among classes, types, and sizes of sources within a category in establishing such standards. In establishing subcategories, EPA considers factors such as air pollution control engineering differences, process operations (including differences between batch and continuous operations), emission characteristics, control device applicability, and opportunities for pollution prevention.

C. Health Effects of Pollutants

Available emission data, collected in conjunction with development of the standard, show that the pollutants that are listed in section 112(b)(1) and are emitted by primary aluminum plants include HF, a gaseous inorganic compound, and POM. Following is a summary of the potential health effects caused by emission of pollutants that will be reduced by the standard.

Short-term inhalation exposure to gaseous HF and related fluoride compounds can cause severe respiratory damage in humans, including severe irritation and pulmonary edema. Long-term inhalation exposure to low levels of HF by humans has been reported to result in irritation and congestion of the nose, throat, and bronchi while damage to liver, kidney, and lungs has been observed in animals. Occupational studies have not specifically implicated inhaled fluoride as a cause of cancer, and the Agency has not classified HF with respect to potential carcinogenicity.

There is generally a lack of information on human health effects associated with exposures to HF at current ambient air concentrations near primary aluminum plants. In their comments on the proposed rule, the aluminum industry asserted that there was no evidence of adverse effects on human health or the environment from HF emissions from aluminum production at the industry's current level of emission control.

Emission test results reveal that primary aluminum reduction plants emit POM, which includes a combination of PAHs such as anthracene, benzo(a)pyrene, and naphthalene, among others. Several of the PAH compounds, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, are probable human carcinogens. Cancer is the major concern from exposure to these PAHs. Specifically, long-term exposure to benzo(a)pyrene has been reported to result in toxic effects on skin, irritation to eyes, cataracts in humans, and toxic effects on the liver, blood, and the immune system in animal studies. Reproductive and developmental effects from benzo(a)pyrene have also been reported in animal studies.

In addition to HAPs, this final standard also would reduce emissions of particulate matter smaller than 10 microns in diameter (PM_{10}), which are controlled under the National Ambient Air Quality Standards (NAAQS). The health effects of PM_{10} are described in EPA's criteria documents that support the NAAQS. For example, particles addressed by the PM_{10} standard have been associated with aggravation of existing respiratory and cardiovascular disease and increased risk of premature death.

The EPA does recognize that the degree of adverse effects to health can range from mild to severe. The extent and degree to which the health effects may be experienced depends upon: (1) The ambient concentrations observed in the area (e.g., as influenced by emission rates, meteorological conditions, and terrain), (2) the frequency of and duration of exposures, (3) characteristics of exposed individuals (e.g., genetics, age, pre-existing health conditions, and lifestyle), which vary significantly with the population, and (4) pollutant-specific characteristics (e.g., toxicity, half-life in the environment, bioaccumulation, and persistence).

IV. Summary of Final Rule and Changes Since Proposal

Changes have been incorporated into the final NESHAP for primary aluminum reduction plants in response to comments on the proposed rule. The principal changes made since proposal are summarized below.

A. Applicability

As proposed, the final standard applies to emissions of HF, measured using TF as a surrogate, and POM (as measured by methylene chloride extractables) from each affected source associated with primary aluminum reduction and located at a major source.

Under the proposed standard, affected sources included each new and existing potline of reduction cells, anode bake furnace, and paste production plant, except for one off-site anode bake furnace that is subject to the State MACT determination established by the applicable regulatory authority. No changes were made to the final standard affecting the applicability of the rule to these affected sources.

In response to public comments, the applicability of the proposed rule was revised to include new pitch storage tanks. The control technology and standards applicable to this affected source are summarized in section IV.B of this document.

Following proposal, the EPA's Office of Solid Waste (OSW) received information that one primary aluminum plant has recently installed a new process designed to recycle spent potliner from aluminum reduction cells. Spent potliner is listed as a hazardous waste under the Resource Conservation and Recovery Act. This process vitrifies the waste into a glass material and recovers sodium fluoride and calcium fluoride for use in the aluminum production process. Although the process is not defined as an affected source under the final MACT rule, the Office of Air Quality Planning and Standards (OAQPS) and OSW are working in cooperation with the State agency and the plant to evaluate potential air emissions (e.g., emission testing will be performed in the near future) and to determine whether additional emission control requirements beyond those currently required by the State are needed.

B. Emission Limits and Standards

No changes were made to the control options serving as the basis of the proposed standards. The emission control technology selected as the basis of the standards is discussed in section III.C of the proposal preamble document (61 FR 50588, September 26, 1996).

Three changes were made to the emission limits and standards in §§ 63.843 and 63.844 of the proposed rule. The POM emission limit for the VSS2 subcategory was reduced from 3.7 lbs/ton to 3.6 lbs/ton based on data received for the MACT floor potline from that subcategory. Section 63.843(b)(3) of the proposed rule concerning use of an alternative control device for paste production plants was revised to encourage pollution prevention options. Section 63.844 of the proposed rule also was revised to include new paragraph (d) containing provisions for new pitch storage tanks. No other changes were made to the proposed limits and standards for potlines or anode bake furnaces. These limits are summarized in Tables 1 and 2 of the proposal preamble document (61 FR 50588–50589, September 26, 1996).

No changes were made to the proposed equipment standard developed under section 112(h) of the Act that required a dry coke scrubber for the paste production plant. The EPA

C. Health Effects of Pollutants
IV. Summary of Final Rule and Changes Since Proposal
A. Applicability
B. Emission Limits and Standards
C. Incorporation of the NSPS
D. Emission Averaging
E. Compliance Provisions
F. Emission Monitoring
G. Test Methods
H. Time Limit for Approval or Disapproval of Submissions
I. Notification, Reporting, and Recordkeeping Requirements
J. Display of OMB Control Numbers
V. Summary of Impacts
VI. Summary of Responses to Major Comments
A. Subcategories
B. Format of the Standard
C. Achievability of Emission Limits
D. Incorporation of the NSPS
E. Time Limit for Approval by the Regulatory Authority
F. Relationship to Other Rules
G. Reduced Sampling Frequency
H. Approval of Alcan Cassette Method (Method 14A)
I. Estimates of Costs for Control and Monitoring
J. Exceeding an Operating Parameter Limit
K. Pitch Storage Tanks
VII. Administrative Requirements
A. Docket
B. Executive Order 12866
C. Enhancing the Intergovernmental Partnership Under Executive Order 12875
D. Unfunded Mandates Reform Act
E. Regulatory Flexibility
F. Submission to Congress and the General Accounting Office
G. Paperwork Reduction Act
H. Clean Air Act

I. Statutory Authority

The statutory authority for this rule is provided by sections 101, 112, 114, 116, and 301 of the Clean Air Act, as amended; 42 U.S.C., 7401, 7412, 7414, 7416, and 7601.

II. Purpose

The Clean Air Act was created in part "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." [See section 101(b)(1).] Section 112 of the Act establishes a technology-based program to reduce stationary source emissions of HAPs from new and existing sources.

Section 112(d) of the Act requires the regulations to reflect the maximum degree of reduction in emissions of HAPs that is achievable taking into consideration the cost of achieving the emission reduction, any non-air quality health and en- -mental impacts, and energy r iis level of control .ferred to as the maxim control technology (MACT). The goal of the section 112(d) MACT standards is to apply such control technology to reduce emissions and thereby reduce the hazard of HAPs emitted from stationary sources.

This final rule is technology based, i.e., based on MACT. In essence, these MACT standards ensure that all major sources of air toxic emissions achieve the level of control already being achieved by the better controlled and lower emitting sources in each category. This approach provides assurance to citizens that each major source of toxic air pollution will be required to effectively control its emissions. At the same time, this approach provides a level economic playing field, ensuring that facilities that use cleaner processes and good emission controls are not disadvantaged relative to competitors with poorer controls.

III. Background

A. Primary Aluminum Source Category

Section 112(c) of the Act requires the EPA to list each category of major and area sources, as appropriate, emitting one or more of the HAPs listed in section 112(b) of the Act. The term "major source" is defined by the Act to mean:

> * * *Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, in the aggregate 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs.

On July 16, 1992 (57 FR 31576), the EPA published a list of major and area sources for which NESHAP are to be promulgated, and primary aluminum production was one of the 174 categories of sources listed. The listing was based on the Administrator's determination that primary aluminum plants may reasonably be anticipated to emit several of the listed HAPs in sufficient quantity to be designated as major sources. The EPA schedule for promulgation of the MACT standards was published on December 3, 1993 (58 FR 63941), and requires that rules for the primary aluminum source category be promulgated by November 15, 1997.

The primary aluminum source category includes facilities engaged in producing primary aluminum by electrolytically reducing alumina. The NESHAP for primary aluminum production applies to all primary aluminum production plants because all of these sites are major sources.

B. NESHAP for Source Categories

The control of HAPs is achieved through the promulgation of technology-based emission standards under section 112(d) and design, equipment, work practice, or operational standards under section 112(h) for categories of sources that emit HAPs. Emission reductions may be accomplished through the application of measures, processes, methods, systems, or techniques including, but not limited to: (1) Reducing the volume of, or eliminating emissions of, such pollutants through process changes, substitution of materials, or other modifications; (2) enclosing systems or processes to eliminate emissions; (3) collecting, capturing, or treating such pollutants when released from a process, stack, storage, or fugitive emissions point; (4) design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in subsection (h); or (5) a combination of the above. (See section 112(d)(2).)

A statutory minimum or baseline level of HAP emission control that the EPA can select to be MACT for a particular source category is defined under section 112(d)(3) of the Act and is referred to as the "MACT floor." For new sources, the MACT floor is the level of HAP emission control that is achieved in practice by the best controlled similar source. The statute allows standards under a NESHAP for existing sources to be less stringent than standards for new sources. The determination of MACT floor for existing sources depends on the nationwide number of existing sources within the source category. The floor is based on the average emission limitation achieved by the best-performing 12 percent of existing sources for categories and subcategories with 30 or more sources, or the best-performing 5 sources for categories or subcategories with fewer than 30 sources.

Once the MACT floors are determined for new and existing sources in a source category, the EPA must establish standards under a NESHAP that are no less stringent than the applicable MACT floors. The Administrator may promulgate standards that are more stringent than the MACT floor when such standards are determined by the EPA to be achievable taking into consideration the cost of implementing the standards as well as any non-air quality health and environmental impacts and energy requirements.

Section 112(d) of the Act requires EPA to establish emission standards for

Federal Register

Tuesday
October 7, 1997

Part II

Environmental Protection Agency

40 CFR Parts 9, 60, and 63
National Emission Standards for Hazardous Air Pollutants for Source Categories; National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 60, and 63

[IL–64–2–5807; FRL–5898–5]

RIN 2060–AE76

National Emission Standards for Hazardous Air Pollutants for Source Categories; National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for each new or existing potline, paste production plant, and anode bake furnace associated with a primary aluminum reduction plant, and for each new pitch storage tank associated with a primary aluminum production plant. In addition, the new source performance standard for primary aluminum plants is amended and most of the requirements are incorporated in the final national emission standards. This action also adds Method 315 for the measurement of extractable organic matter to appendix A of part 63 and Method 14A for the measurement of total fluoride (TF) to appendix A of part 60.

The major hazardous air pollutants (HAPs) emitted by the facilities covered by this rule include hydrogen fluoride (HF) and polycyclic organic matter (POM). Polycyclic aromatic hydrocarbons (PAHs) are included in the chemical group POM. Polycyclic aromatic hydrocarbons have been reported to produce carcinogenic, reproductive, and developmental effects as well as toxic effects on blood, the liver, eyes, and the immune system. The final rule will result in a 50 percent reduction in fluoride and POM emissions from the current level of 11,000 tons per year (tpy); a substantial reduction in emissions of nonHAP pollutants, such as particulate matter, also will be achieved.

These standards implement section 112(d) of the Clean Air Act as amended (the Act) and are based on the Administrator's determination that primary [illegible]inum plants may rea[illegible]nticipated to emit [illegible]\Ps listed in section [illegible]rom the various [illegible] found within the

EFFECTIVE DATE: October 7, 1997. See the **SUPPLEMENTARY INFORMATION** section concerning judicial review.

The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of October 7, 1997.

ADDRESSES: *Docket.* The docket for this rulemaking containing the information considered by the EPA in development of the final rule is Docket No. A–92–60. This docket is available for public inspection between 8 a.m. and 4 p.m., Monday through Friday except for Federal holidays, at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (6102), 401 M Street SW., Washington, DC 20460; telephone: (202) 260–7548. The docket is located at the above address in Room M–1500, Waterside Mall (ground floor). A reasonable fee may be charged for copying.

Background Information Document. A background information document, titled "National Emission Standards for Hazardous Air Pollutants (NESHAP) for Primary Aluminum Reduction Plants—Background Information for Promulgated Standards, Summary of Public Comments and Responses," has been prepared summarizing the significant public comments made on the proposed rule and the Administrator's response to those comments. This document is available in the docket for this rulemaking and also is available for downloading from the Technology Transfer Network under the Clean Air Act Amendments, Recently Signed Rules.

FOR FURTHER INFORMATION CONTACT: Steve Fruh, Policy, Planning, and Standards Group, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–2837, electronic mail address, "fruh.steve@epamail.epa.gov".

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are those that emit or have the potential to emit HAPs listed in section 112(b) of the Act. Regulated categories and entities include:

Category	Examples of regulated entities
Industry	Primary aluminum reduction plants.
Federal government: Not affected	
State/local/tribal government: Not affected.	

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in § 63.840 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Judicial Review

This NESHAP for primary aluminum reduction plants was proposed on September 26, 1996 (61 FR 50586). This notice promulgating a NESHAP for primary aluminum reduction plants constitutes final administrative action concerning that proposal. Under section 307(b)(1) of the Clean Air Act, judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by December 8, 1997. Under section 307(d)(7)(B) of the Act, only an objection to this rule which was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the Act, the requirements established by today's final action may not be challenged separately in any civil or criminal proceeding brought by EPA to enforce these requirements.

Technology Transfer Network

The Technology Transfer Network is one of the EPA's electronic bulletin boards. The Technology Transfer Network provides information and technology exchange in various areas of air pollution control. The service is free except for the cost of a phone call. Dial (919) 541–5472 for up to a 14,400 bps modem. The Technology Transfer Network is also accessible through the Internet at "http://ttnwww.rtpnc.epa.gov." If more information on the Technology Transfer Network is needed, call the HELP line at (919) 541–5384.

Outline

The following outline is provided to aid in reading this preamble to the final rule.

I. Statutory Authority
II. Purpose
III. Background
A. Primary Aluminum Source Category
B. NESHAP for Source Categories

health and the environment in a way that is consistent with safety concerns.

As mentioned above, EPA has been investigating and will continue to investigate the cause of these incidents. During the one year suspension period, the Agency will provide the public with the results of the investigation. At the conclusion of the one year period, EPA expects to have addressed any safety concerns with the EO NESHAP requirements. If the Agency finds that changes to the EO NESHAP are necessary to address safety concerns, EPA will conduct a rulemaking to promulgate a revised standard and sources will be given adequate opportunity to comply with the revised rule. If, however, EPA concludes that no changes are necessary, EO facilities will be expected to be in compliance with the EO NESHAP by December 6, 1998.

III. Administrative Requirements

A. Paperwork Reduction Act

The information collection requirements of the EO NESHAP were submitted to and approved by the Office of Management and Budget (OMB). A copy of this Information Collection Request (ICR) document (OMB control number 2060–0283) may be obtained from Ms. Sandy Farmer, Information Policy Branch (2136); U.S. EPA; 401 M Street, SW, Washington, DC 20460, or by calling (202) 260–2740.

Today's action has no impact on the information collection burden estimates made previously. Today's action merely suspends the EO NESHAP for one year. This change does not impose new requirements. Consequently, the ICR has not been revised.

B. Executive Order 12866, Unfunded Mandates Reform Act, and Regulatory Flexibility Act

Today's action serves to reduce the burden on certain sources by temporarily suspending the EO NESHAP. Consequently, under Executive Order 12866, this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. Since this action is not subject to notice-and-comment rulemaking requirements under the APA or any other law, it is also not subject to sections 202, 204 or 205 of the Unfunded Mandates Reform Act (UMRA). In addition, since this action does not impose annual costs of $100 million or more and will not significantly or uniquely affect small governments, the Agency has no obligations under section 203 of UMRA. Moreover, since this action is not subject to notice-and-comment requirements under the APA or any other statute as discussed above, it is not subject to section 603 or 604 of the Regulatory Flexibility Act.

C. Submission to Congress and the Comptroller General

EPA submitted a report containing this action and other information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication in today's **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule is effective immediately pursuant to 5 U.S.C. 808(2) because the EPA for good cause finds that notice and comment is impracticable, unnecessary, or contrary to the public interest, for the reasons stated previously.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Ethylene oxide sterilization, Hazardous substances, Reporting and recordkeeping requirements.

Dated: December 4, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, Title 40, Part 63, Subpart O of the Code of Federal Regulations, is hereby suspended until December 6, 1998.

[FR Doc. 97–32328 Filed 12–5–97; 1:16 pm]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 721

[OPPTS–50608E; FRL–5746–2]

RIN 2070–AB27

Polyalkylene Polyamine; Significant New Use Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing a significant new use rule (SNUR) under section 5(a)(2) of the Toxic Substances Control Act (TSCA) for the chemical substance described as polyalkylene polyamine which is the subject of premanufacture notice (PMN) P–89–963. This rule would require certain persons who intend to manufacture, or import this substance for a significant new use to notify EPA at least 90 days before commencing any manufacturing or importing activities for a use designated by this SNUR as a significant new use. The required notice would provide EPA with the opportunity to evaluate the intended use and, if necessary, to prohibit or limit that activity before it can occur.

DATES: This rule is effective January 8, 1998.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Environmental Protection Agency, Rm. E–543B, 401 M St., SW., Washington, DC 20460, telephone: (202) 554–1404, TDD: (202) 554–0551; e-mail: TSCA-Hotline@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:

Electronic Availability: Electronic copies of this document are available from the EPA Home Page at the **Federal Register**-Environmental Documents entry for this document under "**Laws** and Regulations" (http://www.epa.gov/fedrgstr/).

This final SNUR would require persons to notify EPA at least 90 days before commencing the manufacture or import of P–89–963 for the significant new uses designated herein. The required notice would provide EPA with information with which to evaluate an intended use and associated activities.

I. Authority

Section 5(a)(2) of TSCA (15 U.S.C. 2604(a)(2)) authorizes EPA to determine that a use of a chemical substance is a "significant new use." EPA must make this determination by rule after considering all relevant factors, including those listed in section 5(a)(2). Once EPA determines that a use of a chemical substance is a significant new use, section 5(a)(1)(B) of TSCA requires persons to submit a notice to EPA at least 90 days before they manufacture, import, or process the chemical substance for that use. Section 26(c) of TSCA authorizes EPA to take action under section 5(a)(2) with respect to a category of chemical substances.

Persons subject to this SNUR would comply with the same notice requirements and EPA regulatory procedures as submitters of premanufacture notices under section 5(a)(1) of TSCA. In particular, these requirements include the information submission requirements of section 5(b) and (d)(1), the exemptions authorized by section 5(h)(1), (h)(2), (h)(3), and (h)(5), and the regulations at 40 CFR part 720. Once EPA receives a SNUR notice, EPA may take regulatory action under section 5(e), 5(f), 6, or 7 to control the activities for which it has received a SNUR notice. If EPA does not take

investigations, contact Mr. Craig Matthiessen, Chemical Emergency Preparedness and Prevention Office (5101), Office of Solid Waste and Emergency Response, U.S. EPA, 401 M Street, SW, Washington, DC 20460, telephone number (202) 260–9781.

SUPPLEMENTARY INFORMATION: An electronic version of this rule is available for download from the EPA Technology Transfer Network (TTN), a network of electronic bulletin boards developed and operated by the Office of Air Quality Planning and Standards. The TTN provides information and technology exchange in various areas of air pollution control. The service is free, except for the cost of a phone call. Dial (919) 541–5742 for data transfer of up to 14,400 bits per second. If more information on the operation of the TTN is needed, contact the systems operator at (919) 541–5384. The TTN is also available on the Internet (access: http://ttnwww.rtpnc.epa.gov).

The information presented in this preamble is organized as follows:

I. Background and Summary of Action
II. Summary of and Rationale for Suspension of the Rule
III. Administrative Requirements
A. Paperwork Reduction Act
B. Executive Order 12866, Unfunded Mandates Reform Act, and Regulatory Flexibility Act
C. Submission to Congress and the Comptroller General

I. Background and Summary of Action

On December 6, 1994 (59 FR 62585), the EPA promulgated the EO NESHAP which regulates emissions of ethylene oxide from new and existing commercial sterilization and fumigation operations using 1 ton or more of EO per year. The regulated category and entities affected by today's action are the sources described in 40 CFR 63.360. That provision includes commercial operations using ethylene oxide as a sterilant and fumigant in the production of medical equipment and supplies, and in miscellaneous sterilization and fumigation operations at both major and area sources. Note that this description is not intended to be exhaustive but, rather, to provide a guide for readers interested in this compliance extension. To determine whether your facility is affected by today's action, you should carefully examine the applicability criteria in 40 CFR 63.360. If you have questions about the applicability of today's action to a particular entity, consult the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

In July 1997, the Agency learned of reports of explosions at ethylene oxide sterilization and fumigation facilities. EPA does not want matters associated with the December 1997 compliance date to possibly compromise safety. Therefore, the Agency is suspending the EO NESHAP for one year until December 6, 1998.

II. Summary of and Rationale for Suspension of the Rule

As noted above, in July 1997, the Agency learned of reports of explosions at ethylene oxide facilities. Several of these explosions occurred at facilities subject to the EO NESHAP. The precise cause of the explosions is still uncertain at this time. The Agency, however, wishes to adopt a cautious approach in order to assure public and worker safety and, consequently, immediately began conducting a preliminary investigation to determine if the emission control equipment mandated by 40 CFR part 63, subpart O was in any way associated with the cause of the problems at these facilities.

In a July 18, 1997 memorandum, the director of EPA's Office of Air Quality Planning and Standards (OAQPS) asked all Regional Air Division Directors and Regional Air Toxics Coordinators to inform all ethylene oxide facilities of the recent incidents and the potential safety problem. Because subpart O's December 1997 compliance date had not yet been triggered, this memorandum also recommended that, if the owners or operators of the facilities had any safety concern, they should disconnect the control units until the matter could be examined further.

EPA does not know the extent to which the explosions that have occured to date were related to the installation of control equipment to comply with the EO NESHAP. However, the Agency wishes to err, if at all, on the side of safety. Accordingly, the Agency is today suspending the EO NESHAP for one year, until December 6, 1998 pursuant to the authority inherent to EPA's general rulemaking authority under CAA section 301(a), 42 U.S.C. 7601(a).

CAA section 301(a) grants the Administrator of the EPA the authority "to prescribe such regulations as are necessary to carry out his functions under this Act." Given the unique circumstances and uncertainty surrounding the EO NESHAP, as described in this notice, EPA believes that it is necessary to suspend this rule for the safety of the public and workers in and around EO facilities. This action is consistent with the objectives of the Clean Air Act as stated in section 101(b), 42 U.S.C. § 7401(b), "The purposes of this subchapter are * * * to promote the public health and welfare and the productive capacity of its population * * *"

The original EO NESHAP and today's action suspending that rule are promulgated pursuant to CAA section 307(d), 42 U.S.C. 7607(d), which requires that any rule subject to that section be issued only after the public has received notice of, and an opportunity to comment on, the rule. However, section 307(d)(1) exempts from those requirements any rule for which the Agency finds under the Administrative Procedure Act, 5 U.S.C. § 553(b), that providing prior notice-and-comment would be impracticable, unnecessary or contrary to the public interest.

EPA believes the circumstances presented here provide good cause to take this action without prior notice-and-comment. EPA finds that providing prior notice-and-comment would be impracticable and contrary to the public interest based on the potential ongoing danger to public and worker safety posed by the recent incidents at ethylene oxide facilities. There is simply not enough time to provide notice-and-comment procedures before the current compliance date of December 6, 1997 arrives, and until the compliance date is extended, sources are faced with having to install control equipment in time to meet the current compliance date. Only by omitting notice-and-comment from this action can EPA provide sources affected by the EO NESHAP with timely legal relief from the current compliance date, while EPA investigates the situation. Consequently, this action is being promulgated without prior notice-and-comment as provided for in CAA section 307(b)(1) and is immediately effective as provided for in CAA section 112(d)(10).

Nonetheless, EPA is providing 30 days for submission of public comments. EPA will consider all written comments submitted in the allotted time period to determine if any change to this action is necessary.

In addition, the OAQPS Director has requested that the appropriate Regional Offices, in cooperation with the Office of Solid Waste and Emergency Response's Chemical Emergency Preparedness and Prevention Office (CEPPO), and the Regional CEPPO program offices, visit the facilities where the incidents have occurred to gather all relevant information. In suspending the EO NESHAP and directing this investigation effort, the Administrator wishes to remind the public and the regulated community that the role of the EPA has been and continues to be protection of public

ozone. The redesignation request and maintenance plan meet the redesignation requirements in section 107(d)(3)(E) of the Clean Air Act as amended in 1990. The redesignation meets the Federal requirements of section 182(a)(1) of the Clean Air Act as a revision to the Indiana ozone State Implementation Plan.

* * * * *

PART 81—[AMENDED]

1. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

2. In § 81.315 the ozone table is amended by revising the entry for "Evansville Area: Vanderburgh County" to read as follows:

§ 81.315 Indiana.

* * * * *

INDIANA—OZONE

Designated areas	Designation		Classification	
	Date	Type	Date	Type
*	*	*	*	*
Evansville area: Vanderburgh County.	December 9, 1997	Attainment.		
*	*	*	*	*

[1] This date is November 15, 1990, unless otherwise noted.

* * * * *

[FR Doc. 97–32188 Filed 12–8–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5933–6]

RIN 2060–AC28

National Emission Standards for Hazardous Air Pollutants for Ethylene Oxide Commercial Sterilization and Fumigation Operations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final rule.

SUMMARY: Today's action suspends, on an interim final basis, the National Emission Standards for Hazardous Air Pollutants for Ethylene Oxide Commercial Sterilization and Fumigation Operations (EO NESHAP). The suspension allows affected sources subject to the EO NESHAP to defer compliance with the NESHAP for one year until December 6, 1998. This action does not change the level of the standards or the intent of the NESHAP promulgated in 1994.

DATES: This action is effective December 4, 1997.

Under section 307(b)(1) of the Clean Air Act (Act), judicial review of this final action is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this interim final rule. Under section 307(b)(2) of the Act, the requirements that are the subject of today's document may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

ADDRESSES: Docket. Docket No. A–88–03, category VIII Amendments, containing information considered by the EPA in developing this rule, is available for public inspection and copying between 8:00 a.m. and 5:30 p.m., Monday through Friday, except for Federal holidays, at the EPA's Air and Radiation Docket and Information Center, room M1500, U.S. EPA, 401 M Street, SW, Washington, DC 20460; telephone (202) 260–7548. A reasonable fee may be charged for copying. This docket also contains information considered by the EPA in proposing and promulgating the original EO NESHAP.

FOR FURTHER INFORMATION CONTACT: For information concerning applicability and rule determinations, contact the appropriate EPA regional or Office of Enforcement and Compliance Assurance (OECA) representative:

Region I: Greg Roscoe, Air Programs Enforcement Office Chief, U.S. EPA, Region I, JFK Federal Building (SEA), Boston, MA 02203, Telephone number (617) 565–3221

Region II: Kenneth Eng, Air Compliance Branch Chief, U.S. EPA, Region II, 290 Broadway, New York, NY 10007, Telephone number (212) 637–4080, Fax number (212) 637–3998

Region III: Walter K. Wilkie, U.S. EPA, Region III (3AT12), 841 Chestnut Building, Philadelphia, PA 19107, Telephone number (215) 566–2150, Fax number (215) 566–2114

Region IV: Lee Page, U.S. EPA, Region IV (AR–4), 100 Alabama Street, SW, Atlanta, GA 30303–3104, Telephone number (404) 562–9131, Fax number (404) 562–9095

Region V: Howard Caine (AE–17J), U.S. EPA, Region V, 77 W. Jackson Blvd., Chicago, IL 60604, Telephone number (312) 353–9685, Fax number (312) 353–8289

Region VI: Sandra A. Cotter (6EN–AT), U.S. EPA, Region VI (6PD–R), 1445 Ross Avenue, Dallas, TX 75202–2733, Telephone number (214) 665–7347, Fax number (214) 665–7446

Region VII: Bill Peterson, U.S. EPA, Region VII, 726 Minnesota Avenue, Kansas City, KS 66101, Telephone number (913) 551–7881

Region VIII: Heather Rooney, U.S. EPA, Region VIII (8ART–AP), 999 18th Street, Suite 500, Denver, CO 80202–2405, Telephone number (303) 312–6971, Fax number (303) 312–6826

Region IX: Christine Vineyard, U.S. EPA, Region IX (Air–4), 75 Hawthorne Street, San Francisco, CA 94105, Telephone number (415) 744–1197

Region X: Chris Hall, Office of Air Quality (OAQ–107), U.S. EPA, Region X, 1200 Sixth Avenue, Seattle, WA 98101–9797, Telephone number (206) 553–1949 or (800) 424–4372 x1949

OECA: Julie Tankersley, U.S. EPA, OECA (2223A), 401 M Street, SW, Washington, DC 20460, Telephone number (202) 564–7002, Fax number (202) 564–0050.

For information concerning the analyses performed in developing this interim final rule, contact Mr. David Markwordt, Policy, Planning and Standards Group, Emission Standards Division (MD–13), Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, NC 27711, telephone number (919) 541–0837 or fax number (919) 541–0942. For information concerning the accident

Future rulemaking and guidance on EPA's transition policy (policy addressing the transition from the application of the one-hour ozone standard to the eight-hour ozone standard) will address the implications of this standard revocation for the area's maintenance plan and other ozone-related emission control requirements.

V. Conclusions

None of the public comments reviewed here warrants reversal of EPA's proposed approval of the redesignation of Vanderburgh County to attainment of the one-hour ozone standard and approval of the State's maintenance plan for this area as a SIP revision. Monitoring of ozone for the 1995 through 1997 period in Vanderburgh County and its adjoining Posey and Warrick Counties shows no violations of the one-hour ozone standard, demonstrating that this area has attained the one-hour ozone standard.

As noted above, on July 18, 1997 the EPA promulgated a revised eight-hour standard for ozone. The current rulemaking makes no judgments regarding the attainment of the revised ozone standard in the Evansville area. The attainment status of this area relative to the new ozone standard will be addressed in a future rulemaking.

VI. Final Rulemaking Action

EPA is approving the ozone redesignation request and the ozone maintenance plan submitted by Indiana on November 4, 1993 as they apply to Vanderburgh County. EPA is, therefore, redesignating Vanderburgh County to attainment of the one-hour ozone standard. The EPA has completed its analysis of the redesignation request and SIP revision request based on a review of the materials presented and in consideration of the current, 1995 through 1997, ozone data in the area, including ozone monitoring data in Posey, Vanderburgh, and Warrick Counties.

In taking this action, the EPA has taken into consideration all relevant public comments on the March 14, 1997 proposed rulemaking. None of the public comments were found to form the basis for a reversal of the proposed approval.

Nothing in this action should be construed as permitting or allowing or establishing a precedent for any future request for revision to any SIP. Each request for revision to the SIP shall be considered separately in light of specific technical, economic, and environmental factors and in relation to relevant statutory and regulatory requirements.

VII. Administrative Requirements

A. Executive Order 12866

The Office of Management and Budget has exempted this regulatory action from Executive Order 12866 review.

B. Regulatory Flexibility

Under the Regulatory Flexibility Act, 5 U.S.C. 600 *et seq.*, EPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities. 5 U.S.C. sections 603 and 604. Alternatively, EPA may certify that the rule will not have a significant impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

Redesignation of an area to attainment under section 107(d)(3)(E) of the Act does not impose any new requirements on small entities. Redesignation is an action that affects the status of a geographical area and does not impose any regulatory requirements on sources. EPA certifies that the approval of the redesignation request will not affect a substantial number of small entities.

C. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to the private sector, of $100 million or more. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

EPA has determined that the approval action promulgated here does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This Federal action approves preexisting requirements under State or local law, and imposes no new requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

D. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

E. Petitions for Judicial Review

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by February 9, 1998. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See Section 307(b)(2)).

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Hydrocarbons, Intergovernmental relations, Ozone, Volatile Organic Compounds, and Nitrogen dioxide.

40 CFR Part 81

Air pollution control, National parks, Wilderness areas.

Dated: December 2, 1997.

David A. Ullrich,

Acting Regional Administrator.

Chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. Section 52.777 is amended by adding paragraph (s) to read as follows:

§ 52.777 Control Strategy: Photochemical oxidants (hydrocarbons).

* * * * *

(s) Approval—On November 4, 1993, the State of Indiana submitted a maintenance plan and a request that Vanderburgh County be redesignated to attainment of the one-hour National Ambient Air Quality Standard for

consecutive clean years of CO data. This proposed finding was based on air quality data showing violations of the CO NAAQS at three monitoring sites during 1995, with the number of readings exceeding the 8 hour standard totaling 19. For the specific data considered by EPA in making this proposed finding, see 62 FR 42719.

E. Reclassification to a Serious Nonattainment Area

EPA has the responsibility, pursuant to sections 179(c) and 186(b)(2) of the CAA, for determining whether the Fairbanks North Star Borough CO nonattainment area attained the CO NAAQS by December 31, 1995. Under section 186(b)(2)(A), if EPA finds that the area has not attained the CO NAAQS, the area is reclassified as serious by operation of law. There were 26 CO exceedances recorded in the years 1994–1995. Additional control strategies are needed to further reduce CO concentrations in order to attain the CO standard. Pursuant to section 186(b)(2)(B) of the Act, EPA is publishing this notice to identify the Fairbanks area as failing to attain the standard and therefore reclassified as serious by operation of law.

II. Response to Comments on Proposed Finding

During the public comment period on EPA's proposed finding, EPA received several comments. Below is EPA's response to all substantive comments received.

Air Quality Monitoring Data

A commenter represented an association which had undertaken a detailed review of the air quality monitoring data from a variety of areas around the country using the Aerometric Information Retrieval System data base. Specifically, the report alleged that the Fairbanks North Star Borough Air Quality Division does not monitor the ambient air temperature within their CO monitor instrument enclosures to ensure that the station temperature remained within the 20–30 degree C range specified by the EPA reference method designation for the TECO 48 CO analyzers used at the sites where exceedances were recorded. Thus, the report concluded, these exceedances were measured by equipment that was being operated under untested specifications for which the analyzer has not been certified and are therefore open to question.

Response: EPA Region 10 prepared a report dated August 27, 1997 (located in our docket), regarding the quality of CO monitoring data collected in Fairbanks for the time period 1994 through 1996. The study focused on time periods when CO exceedances occurred (27 times at three sites in Fairbanks during the time period 1994 through 1996). The evaluation relied upon EPA monitoring guidelines in 40 CFR Part 58, the Quality Assurance Handbook for Air Pollution Measurement Systems—Volume II: Ambient Air Specific Methods (Red book), and manufacturer recommended operations guidelines for CO analyzers. CO monitoring data, precision, and accuracy data used in EPA's analysis were extracted from the EPA Aerometric Information Retrieval System. Zero, span checks, audit results, site logs, and strip charts were obtained from ADEC and the local air pollution control agencies in Fairbanks. Specifications for the operation of individual CO analyzers were obtained from the instrument manufacturers and from the EPA list of air monitoring reference and equivalent methods.

The analysis revealed that ADEC and the Fairbanks North Star Borough have closely followed EPA regulations and guidelines in the collection and quality assurance of CO monitoring data. While the building environment where the monitors were located was not monitored 24 hours a day for every day of the year to show the area was always controlled to 20°–30° C, the analysis showed that:

(a) all monitors were operated indoors.

(b) all buildings containing monitors controlled their indoor temperatures to values within the specified 20°–30° during the workday.

(c) ADEC's quality assurance program verified that monitors were operating properly during periods of standard exceedances. The strip chart data used to identify any suspect behavior of the analyzers was investigated. No "drift" or "cycling" of readings were found on the strip charts. The strip charts showed that the instruments were operating properly at all times during periods of standard exceedances.

(d) ADEC configured their CO monitors to show that both precision and accuracy checks exceeded required frequencies for all sites in Fairbanks for the entire time period of 1994–1996.

(e) At least eight exceedances were recorded in Fairbanks during 8 hour periods when the buildings in which the monitors were located were being heated to employee "comfort" temperatures (usually at the low end of the 20°–30° range).

(f) No exceedances of the 8 hour NAAQS occurred on weekends during this time period.

For these reasons, EPA has concluded that it is very unlikely that enclosure temperature has caused CO levels in Fairbanks to be "over measured" to the extent that a violation of the 8 hour NAAQS could not be confidently demonstrated. EPA's view is that ADEC's data is of high quality and clearly shows repeated exceedances of the CO NAAQS. EPA has no reason to question any of the CO exceedances measured during the 1994 through 1996 time period. Questions have arisen that monitor readings could have been influenced by temperature fluctuations in the buildings where the instruments were operated. Although no daily temperatures were measured in the rooms where monitors were housed, information from the building managers shows that temperatures were maintained at a comfort level for workers in all of the buildings where monitors were housed. The indoor temperatures were well within the range of temperatures that the instrument manufacturers recommend for operation of CO monitors. Also, outside temperatures in Fairbanks were considerably above normal during times of standard exceedances which would minimize a lowering of temperatures indoors even if thermostats were lowered. In addition, no CO exceedances occurred on weekends when thermostats in some buildings could be lowered slightly. For these reasons it is unlikely that CO exceedances were influenced by fluctuations in building temperatures.

Unique Weather Conditions

Several commenters felt that Fairbanks should be given an allowance or exemption from the serious status because of the severity and consistency of its cold weather, as well as the intensity and regularity of its temperature inversions.

Response: EPA prepared a report, dated August 27, 1997, and which is part of the docket, showing CO violations and outside temperature data by monitor location for all the dates exceedances were recorded during 1995. Fairbanks outside temperatures in 1995 were considerably above normal during times of CO air quality standard exceedances (i.e., highs recorded at +44, +34, +32, +30, +29, etc.). Thus, CO exceedances occur in Fairbanks at varying degrees of winter temperatures, not just very low winter temperatures.

Stagnation and inversions are frequent climatological occurrences that must be considered in evaluating whether a control program is adequate to attain and maintain the NAAQS. Meteorological events such as these are

§ 63.1311 Compliance schedule and relationship to existing applicable rules.

* * * * *

(b) New affected sources that commence construction or reconstruction after March 29, 1995, shall be in compliance with this subpart upon initial start-up or February 27, 1998, whichever is later, as provided in § 63.6(b), except that new affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is poly(ethylene terephthalate) (PET) shall be in compliance with § 63.1331 upon initial start-up or by September 12, 1999, whichever is later.

* * * * *

(d) Except as provided for in paragraphs (d)(1) through (d)(6) of this section, existing affected sources shall be in compliance with § 63.1331 no later than February 27, 1998 unless a request for a compliance extension is granted pursuant to section 112(i)(3)(B) of the Act, as discussed in § 63.182(a)(6).

(1) Compliance with the compressor provisions of § 63.164 shall occur no later than February 27, 1998 for any compressor meeting one or more of the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section if the work can be accomplished without a process unit shutdown, as defined in § 63.161:

* * * * *

[FR Doc. 98–4940 Filed 2–26–98; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[AK 17–1705; FRL–5971–4]

Clean Air Act Reclassification; Fairbanks, Alaska Nonattainment Area; Carbon Monoxide

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: In this document EPA is making a final finding that the Fairbanks North Star Borough, Alaska, carbon monoxide (CO) nonattainment area has not attained the CO national ambient air quality standards (NAAQS) by December 31, 1995, the Clean Air Act (CAA) mandated attainment date for moderate nonattainment areas. This finding is based on EPA's review of monitored air quality data for compliance with the CO NAAQS. As a result of this finding, the Fairbanks North Star Borough CO nonattainment area is reclassified as a serious CO nonattainment area by operation of law. As a result of the reclassification, the State is to submit within 18 months from the effective date of this action a new State Implementation Plan (SIP) demonstrating attainment of the CO NAAQS as expeditiously as practical but no later than December 31, 2000, the CAA attainment date for serious areas.

EFFECTIVE DATE: This action is effective March 30, 1998.

FOR FURTHER INFORMATION CONTACT: Ms. Montel Livingston, Office of Air Quality, U.S. Environmental Protection Agency, Region 10, Seattle, Washington, (206) 553–0180.

SUPPLEMENTARY INFORMATION:

I. Background

A. CAA Requirements and EPA Actions Concerning Designation and Classifications

The Clean Air Act Amendments of 1990 (CAA) were enacted on November 15, 1990. Under section 107(d)(1)(C) of the CAA, each CO area designated nonattainment prior to enactment of the 1990 Amendments, such as the Fairbanks North Star Borough nonattainment area, was designated nonattainment by operation of law upon enactment of the 1990 Amendments. Under section 186(a) of the CAA, each CO area designated nonattainment under section 107(d) was also classified by operation of law as either "moderate" or "serious" depending on the severity of the area's air quality problem. CO areas with design values between 9.1 and 16.4 parts per million (ppm), such as the Fairbanks nonattainment area, were classified as moderate. These nonattainment designations and classifications were codified in 40 CFR part 81. See 56 FR 56694 (November 6, 1991).

States containing areas that were classified as moderate nonattainment by operation of law under section 107(d) were required to submit SIPs designed to attain the CO NAAQS as expeditiously as practicable but no later than December 31, 1995.[1]

B. Effect of Reclassification

CO nonattainment areas reclassified as serious are required to submit, within 18 months of the area's reclassification, SIP revisions providing for attainment of the CO NAAQS as expeditiously as practicable but no later than December 31, 2000. In addition, the State must submit a SIP revision that includes: (1) a forecast of vehicle miles traveled (VMT) for each year before the attainment year and provisions for annual updates of these forecasts; (2) adopted contingency measures; and (3) adopted transportation control measures and strategies to offset any growth in CO emissions from growth in VMT or number of vehicle trips. See CAA sections 187(a)(7), 187(a)(2)(A), 187(a)(3), 187(b)(2), and 187(b)(1). Finally, upon the effective date of this reclassification, contingency measures in the moderate area plan for the Fairbanks nonattainment area must be implemented.

C. Attainment Determinations for CO Nonattainment Areas

EPA makes attainment determinations for CO nonattainment areas based upon whether an area has two years (or eight consecutive quarters) of clean air quality data.[2] Section 179(c)(1) of the CAA states that the attainment determination must be based upon an area's "air quality as of the attainment date."

EPA determines a CO nonattainment area's air quality status in accordance with 40 CFR 50.8 and EPA policy.[3] EPA has promulgated two NAAQS for CO: an 8-hour average concentration and a 1-hour average concentration. Because there were no violations of the 1-hour standard in the Fairbanks nonattainment area, this document addresses only the air quality status of the Fairbanks nonattainment area with respect to the 8-hour standard. The 8-hour CO NAAQS requires that not more than one non-overlapping 8-hour average in any consecutive two-year period per monitoring site can exceed 9.0 ppm (values below 9.5 are rounded down to 9.0 and they are not considered exceedances). The second exceedance of the 8-hour CO NAAQS at a given monitoring site within the same two-year period constitutes a violation of the CO NAAQS.

D. Proposed Finding of Failure to Attain

On August 8, 1997 EPA proposed to find that the Fairbanks North Star Borough CO nonattainment area had failed to attain the CO NAAQS by the applicable attainment date. 62 FR 42717. Fairbanks did not have two

[1] The moderate area SIP requirements are set forth in section 187(a) of the CAA and differ depending on whether the area's design value is below or above 12.7 ppm. The Fairbanks area has a design value below 12.7 ppm. 40 CFR 81.302.

[2] See generally memorandum from Sally L. Shaver, Director, Air Quality Strategies and Standards Division, EPA, to Regional Air Office Directors, entitled "Criteria for Granting Attainment Date Extensions, Making Attainment Determinations, and Determinations of Failure to Attain the NAAQS for Moderate CO Nonattainment Areas," October 23, 1995 (Shaver memorandum).

[3] See memorandum from William G. Laxton, Director, Technical Support Division, entitled "Ozone and Carbon Monoxide Design Value Calculations", June 18, 1990. See also Shaver memorandum.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[FRL–5963–8] 12/24/97

Technical Amendments to National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins; Correction of Effective Date Under Congressional Review Act (CRA)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correction of effective date under CRA.

SUMMARY: On September 12, 1996 (61 FR 48207), the Environmental Protection Agency published in the **Federal Register** a final rule promulgating national emission standards for hazardous air pollutants (NESHAP) from existing and new plant sites that emit organic hazardous air pollutants (HAP) identified on the EPA's list of 189 HAP during manufacture of Group IV polymers and resins. The September 12, 1996, document stated the rule would be effective September 12, 1996. On January 14, 1997, and June 6, 1997, EPA amended this rule to change some of the compliance dates. This document corrects the effective date of the rule to February 27, 1998 to be consistent with sections 801 and 808 of the Congressional Review Act (CRA), enacted as part of the Small Business Regulatory Enforcement Fairness Act, 5 U.S.C. 801 and 808, and amends certain compliance dates.

EFFECTIVE DATE: This rule is effective on February 27, 1998.

FOR FURTHER INFORMATION CONTACT: Tom Eagles, OAR, at (202) 260–9766

SUPPLEMENTARY INFORMATION:

I. Background

Section 801 of the CRA precludes a rule from taking effect until the agency promulgating the rule submits a rule report, which includes a copy of the rule, to each House of Congress and to the Comptroller General of the General Accounting Office (GAO). EPA recently discovered that it had inadvertently failed to submit the above rule as required; thus, although the rule was promulgated September 12, 1996, by operation of law, the rule did not take effect on September 12, 1996, as stated therein. The two documents of January 14, 1997, and June 6, 1997, however, were submitted to Congress and GAO as required under CRA. Now that EPA has discovered its error, the rule is being submitted to both Houses of Congress and the GAO. This document amends the effective date of the rule consistent with the provisions of the CRA.

Certain compliance dates in the September 12, 1996, final rule were amended in a direct final rule published January 14, 1997 (62 FR 1835) which was effective on March 5, 1997, and by a direct final rule published June 6, 1997, (62 FR 30993) which was effective on July 27, 1997. Because of the change in the effective date of the September 12, 1996, final rule made in this document, the compliance dates for new affected sources in 40 CFR 63.1311(b), and existing affected sources in 40 CFR 63.1311(d) and (d)(1), are being amended to be the effective date of this amendment. Except to the extent compliance dates are amended by this document, the compliance dates in the September 12, 1996, final rule, as amended by the January 14, 1997, and June 6, 1997, direct final rules, remain unchanged.

Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, an agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for making today's rule final without prior proposal and opportunity for comment because EPA merely is correcting the effective date and compliance dates of the promulgated rule to be consistent with the congressional review requirements of the Congressional Review Act as a matter of law and has no discretion in this matter, and because EPA must amend certain compliance dates as a result of the amended effective date. Thus, notice and public procedure are unnecessary. The Agency finds that this constitutes good cause under 5 U.S.C. 553(b)(B). Moreover, since today's action does not create any new regulatory requirements and affected parties have known of the underlying rule since September 12, 1996, EPA finds that good cause exists to provide for an immediate effective date pursuant to 5 U.S.C. 553(d)(3) and 808(2).

II. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), or require prior consultation with State officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the September 12, 1996, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on February 27, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule and related compliance dates; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended dates. Pursuant to section 307(b)(1) of the Clean Air Act, challenges to this amendment must be brought within 60 days of publication of the amendment.

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: February 6, 1998.

Carol Browner,

Administrator.

For reasons set out in the preamble, part 63 of title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. Section 63.1311 is amended by revising paragraphs (b), (d) introductory text, and (d)(1) introductory text to read as follows:

adequately decide, based on prevailing ice conditions, whether to transit, taking into account individual vessel handling characteristics and specifications. If necessary to enhance safety, however, the Captain of the Port Baltimore may still impose restrictions on individual vessels on a case-by-case basis. This change will also make procedures in the COTP Baltimore zone consistent with other zones' ice season procedures.

The Captain of the Port Baltimore plans to establish a hot line that mariners can call for information about ice conditions and recommendations about which channels to transit. Because the ice season varies with the weather, Activities Baltimore will announce by Broadcast Notice to Mariners and publication in Local Notice to Mariners the start of the hot line and the phone number to call. The information about the hot line will be announced at least four times daily, and the broadcasts will continue throughout the ice season.

Discussion of Rules

This direct final rule removes the regulation in 33 CFR 165.503 that established a Regulated Navigation Area in the Chesapeake Bay during the ice season, typically between December and March of each year.

Regulatory Evaluation

This rule is not a significant regulatory action under section 3(f) of Executive Order 12866 and does not require an assessment of potential costs and benefits under section 6(a)(3) of that order. If has not been reviewed by the Office of Management and Budget under that order. It is not significant under the regulatory policies and procedures of the Department of Transportation (DOT) (44 FR 11040; February 26, 1979). The Coast Guard expects the economic impact of this rule to be so minimal that a full Regulatory Evaluation under paragraph 10e of the regulatory policies and procedures of DOT is unnecessary.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), the Coast Guard must consider the economic impact on small entities of a rule for which a general notice of proposed rulemaking is required. "Small entities" may include (1) small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields and (2) governmental jurisdictions with populations of less than 50,000.

This direct final rule removes a regulation that imposed restrictions on vessels identified in 33 CFR 165.510(c) that transited in the described Regulated Navigation Area between December and March. Therefore, the Coast Guard finds that this rule will not have a significant economic impact on a substantial number of small entities. Any comments submitted in response to this finding will be evaluated under the criteria described earlier in the preamble for comments.

Collection of Information

This rule contains no collection-of-information requirements under the Paperwork Reduction Act (44 U.S.C. 3501–3520).

Federalism

The Coast Guard has analyzed this rule under the principles and criteria contained in Executive Order 12612 and has determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Environment

The Coast Guard considered the environmental impact of this rule and concluded that, under paragraph 2.B.2 of Commandant Instruction M16475.lB, (as revised by 59 FR 38654, July 29, 1994), this rule is categorically excluded from further environmental documentation. A "Categorical Exclusion Determination" is available in the docket for inspection or copying where indicated under **ADDRESSES**.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reports and recordkeeping requirements, Security measures, Waterways.

Regulations

For the reasons set out in the preamble, the Coast Guard amends 33 CFR Part 165 as follows:

PART 165—[AMENDED]

1. The authority citation for Part 165 continues to read as follows:

Authority: 33 U.S.C. 1231; 33 U.S.C. 191; 33 CFR 1.05–1(g), 6.04–1, 6.04–6 and 160.5; 49 CFR 1.46.

§ 165.503 [Removed]

2. Remove § 165.503.

Dated: February 11, 1998.

Roger T. Rufe, Jr.,

Vice Admiral, U.S. Coast Guard, Commander, Fifth Coast Guard District.

[FR Doc. 98–5105 Filed 2–26–98; 8:45 am]

BILLING CODE 4910–14–M

POSTAL SERVICE

39 CFR Part 222

Delegations of Authority

AGENCY: Postal Service.

ACTION: Final rule.

SUMMARY: This rule amends Postal Service regulations on delegation of authority to bring this regulation in line with the Postal Service's current Human Resources organizational structure.

EFFECTIVE DATE: March 30, 1998.

FOR FURTHER INFORMATION CONTACT: Beth Campbell, Employment and Placement Specialist, Human Resources, (202) 268–3973.

SUPPLEMENTARY INFORMATION: Amendment of § 222.5(a)(7) is needed to identify delegation level consistent with the Human Resources organizational structure.

The Manager, Selection, Evaluation, and Recognition is making this revision. This is a change in agency rules of organization that does not substantially affect any rights or obligations of private parties. Therefore, it is appropriate for their adoption by the Postal Service to become effective immediately.

List of Subjects in 39 CFR Part 222

Authority delegations (Government agencies).

Accordingly, the Postal Service adopts this amendment to 39 CFR part 222 as specifically set forth below:

PART 222—[AMENDED]

1. The authority citation for part 222 continues to read as follows:

Authority: 39 U.S.C. 203, 204, 401(2), 402, 403, 404, 409; Inspector General Act of 1978, as amended (Pub. L. No. 95–452, as amended), 5 U.S.C. App. 3.

§ 222.5 [AMENDED]

2. Section 222.5(a)(7) is amended by striking "EAS–16 and above" and inserting "EAS–15 and above".

Stanley F. Mires,

Chief Counsel, Legislative.

[FR Doc. 98–5012 Filed 2–26–98; 8:45 am]

BILLING CODE 7710–12–P

(3) The source emits no more than 4.5 Mg (5 tons) of any one HAP per rolling 12-month period and no more than 11.4 Mg (12.5 tons) of any combination of HAP per rolling 12-month period, and at least 90 percent of the plantwide emissions per rolling 12-month period are associated with the manufacture of wood furniture or wood furniture components.

* * * * *

3. Section 63.801 is amended by revising the definitions for "certified product data sheet," "coating," and "VHAP of potential concern" to read as follows:

§ 63.801 Definitions.

* * * * *

Certified product data sheet(CPDS) means documentation furnished by coating or adhesive suppliers or an outside laboratory that provides:

(1) The VHAP content of a finishing material, contact adhesive, or solvent, by percent weight, measured using the EPA Method 311 (as promulgated in this subpart), or an equivalent or alternative method (or formulation data if the coating meets the criteria specified in § 63.805(a));

(2) The solids content of a finishing material or contact adhesive by percent weight, determined using data from the EPA Method 24, or an alternative or equivalent method (or formulation data if the coating meets the criteria specified in § 63.805 (a)); and

(3) The density, measured by EPA Method 24 or an alternative or equivalent method. Therefore, the reportable VHAP content shall represent the maximum aggregate emissions potential of the finishing material, adhesive, or solvent in concentrations greater than or equal to 1.0 percent by weight or 0.1 percent for VHAP that are carcinogens, as defined by the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR part 1910), as formulated. Only VHAP present in concentrations greater than or equal to 1.0 percent by weight, or 0.1 percent for VHAP that are carcinogens, must be reported on the CPDS. The purpose of the CPDS is to assist the affected source in demonstrating compliance with the emission limitations presented in § 63.802.* * *

* * * * *

Coating means a protective, decorative, or functional film applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, enamels, inks, and temporary protective coatings. Aerosol spray paints used for touch-up and repair are not considered coatings under this subpart.

* * * * *

VHAP of potential concern means any VHAP from the nonthreshold, high concern, or unrankable list in Table 6 of this subpart.

* * * * *

4. Table 3 to subpart JJ is amended by revising the last line under item (b) and footnote b as follows:

TABLE 3—SUMMARY OF EMISSION LIMITS

* * * * *

(b) * * *

—thinners (maximum percent VHAP allowable); or * * *

* * * * *

[b] Washcoats, basecoats, and enamels must comply with the limits presented in this table if they are purchased premade, that is, if they are not formulated on site by thinning other finishing materials. If they are formulated onsite, they must be formulated using compliant finishing materials, i.e., those that meet the limits specified in this table, and thinners containing no more than 3.0 percent VHAP by weight.

* * * * *

[FR Doc. 97–14446 Filed 6–2–97; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[FRL–5834–4]

Regulations of Fuels and Fuel Additives: Extension of the Reformulated Gasoline Program to the Phoenix, Arizona Moderate Ozone Nonattainment Area

AGENCY: Environmental Protection Agency ("EPA").

ACTION: Final rule.

SUMMARY: Under section 211(k)(6) of the Clean Air Act, as amended ("Act" or "CAA"), the Administrator of EPA must require the sale of reformulated gasoline ("RFG") in an ozone nonattainment area classified as Marginal, Moderate, Serious, or Severe upon the application of the governor of the state in which the nonattainment area is located. As requested by the Governor of Arizona, today's action extends the requirement to sell RFG to the Phoenix, Arizona moderate ozone nonattainment area, effective July 3, 1997 for all persons other than retailers and wholesale purchaser-consumers (*i.e.*, refiners, importers, and distributors), and August 4, 1997 for retailers and wholesale purchaser-consumers. As of the implementation date for retailers and wholesale purchaser-consumers, the Phoenix ozone nonattainment area will be a covered area for all purposes in the federal RFG program. The federal Phase I RFG program provides reductions in ozone-forming volatile organic compounds ("VOC") emissions and air toxics, and prohibits increase in oxides of nitrogen ("NO_X") emissions. Reductions in VOCs are environmentally significant because of the associated reductions in ozone formation. Exposure to ground-level ozone (or smog) can cause respiratory problems, chest pain, and coughing and may worsen bronchitis, emphysema, and asthma.

DATES: This final rule is effective July 3, 1997.

ADDRESSES: Materials relevant to the final rule have been placed in Docket A–97–02. The docket is located at the Air Docket Section, Mail Code 6102, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, in room M–1500 Waterside Mall. Documents may be inspected on business days from 8:00 a.m. to 5:30 p.m. A reasonable fee may be charged for copying docket material. An identical docket is also located in EPA's Region IX office in Docket A–AZ–97. The docket is located at 75 Hawthorne Street, AIR–2, 17th Floor, San Francisco, California 94105. Documents may be inspected from 9:00 a.m. to noon and from 1:00—4:00 p.m. A reasonable fee may be charged for copying docket material.

FOR FURTHER INFORMATION CONTACT: Janice Raburn at U.S. Environmental Protection Agency Office of Air and Radiation, 401 M Street, SW (6406J), Washington, DC 20460, (202) 233–9856.

SUPPLEMENTARY INFORMATION:

Availability on the TTNBBS

The preamble, regulatory language and regulatory support document are also available electronically from the EPA Internet Web site and via dial-up modem on the Technology Transfer Network (TTN), which is an electronic bulletin board system (BBS) operated by EPA's Office of Air Quality Planning and Standards. Both services are free of charge, except for your existing cost of Internet connectivity or the cost of the phone call to TTN. Users are able to access and download files on their first call using a personal computer per the following information. The official **Federal Register** version is made available on the day of publication on the primary Internet sites listed below. The EPA Office of Mobile Sources also publishes these notices on the

planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this action is not a "significant regulatory action" within the meaning of the Executive Order, because it only provides technical corrections to the existing NESHAP.

D. Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. This correction notice makes clarifying amendments to the Wood Furniture Manufacturing Operations NESHAP, including applicability, definitions, and summary table corrections. These amendments will not place any additional requirements on any entity affected by this rule, including small entities. Therefore, these amendments will not have a significant impact on a substantial number of small entities. Consequently, a regulatory flexibility analysis is not required and has not been prepared.

E. Regulatory Review

In accordance with sections 112(d)(6) and 112(f)(2) of the CAA, this regulation will be reviewed within 8 years of the date of promulgation. This review may include an assessment of such factors as evaluation of the residual health risk, any overlap with other programs, the existence of alternative methods of control, enforceability, improvements in emission control technology and health data, and recordkeeping and reporting requirements.

F. Unfunded Mandates Act

The economic impact analysis performed for the original rule showed that the economic impacts from implementation of the promulgated standards would not be "significant" as defined in Executive Order 12866. No changes are being made in these amendments that would increase the economic impacts. The EPA prepared the following statement of the impact of the original rule in response to the requirements of the Unfunded Mandates Reform Act.

There are no Federal funds available to assist State, local, and Tribal governments in meeting these costs. There are important benefits from volatile organic compounds and HAP emission reductions because these compounds have significant, adverse impacts on human health and welfare, and on the environment. The rule does not have any disproportionate budgetary effects on any particular region of the nation, State, local, or Tribal government, or urban, rural, or other type of community. On the contrary, the rule will result in only a minimal increase in the average product rates (less than 1 percent). Moreover, the rule will not have a material effect on the national economy.

Throughout the regulatory negotiation process prior to issuing the final rule on December 7, 1995, the EPA provided numerous opportunities for consultations with interested parties (e.g., public comment period; opportunity for a public hearing (none was requested); meetings with industry, trade associations, State and local air pollution control agency representatives, environmental groups, State, local, and Tribal governments, and concerned citizens). Although small governments are not significantly or uniquely affected by this rule, these procedures, as well as additional public conferences and meetings, gave small governments an opportunity to give meaningful and timely input and obtain information, education, and advice on compliance.

Prior to the promulgation of the rule in 1995, the EPA considered several regulatory options. The final rule represents the least costly and least burdensome alternatives currently available for achieving the objectives of section 112 of the CAA. All of the regulatory options selected are based on pollution prevention measures. Finally, after careful consideration of the costs, the environmental impacts, and the comments, the EPA decided that the MACT floor was the appropriate level of control for this regulation.

G. Submission to Congress and the General Accounting Office

Under 5 U.S.C. § 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major" rule as defined by 5 U.S.C. § 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements, Wood furniture manufacturing.

Dated: May 19, 1997.

Richard D. Wilson,

Acting Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart JJ—National Emission Standards for Wood Furniture Manufacturing Operations

2. Section 63.800 is amended by revising paragraph (a) and the first sentence of paragraphs (b) introductory text and (b)(3) to read as follows:

§ 63.800 Applicability.

(a) The affected source to which this subpart applies is each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63, subpart A, § 63.2. The owner or operator of a source that meets the definition for an incidental wood furniture manufacturer shall maintain purchase or usage records demonstrating that the source meets the definition in § 63.801 of this subpart, but the source shall not be subject to any other provisions of this subpart.

(b) A source that complies with the limits and criteria specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section is an area source for the purposes of this subpart and is not subject to any other provision of this rule, provided that: In the case of paragraphs (b)(1) and (b)(2), finishing materials, adhesives, cleaning solvents and washoff solvents used for wood furniture or wood furniture component manufacturing operations account for at least 90 percent of annual HAP emissions at the plant site, and if the plant site has HAP emissions that do not originate from the listed materials, the owner or operator shall keep any records necessary to demonstrate that the 90 percent criterion is being met. * * *

* * * * * * *

A. Applicability.
B. Definitions.
C. Tables.
III. Administrative Requirements.
A. Docket.
B. Paperwork Reduction Act.
C. Executive Order 12866.
D. Regulatory Flexibility Act.
E. Regulatory Review.
F. Unfunded Mandates Act.
G. Submission to Congress and the General Accounting Office.

I. Background

On December 7, 1995 (60 FR 62930), the EPA promulgated the NESHAP for Wood Furniture Manufacturing Operations. These standards were codified as subpart JJ in 40 CFR Part 63. This action contains corrections to the final standards. These corrections clarify the applicability of the final rule and several definitions, and correct cross-references and table entries.

By issuing these corrections directly as a final rule, the EPA is foregoing the issuance of a Notice of Proposed Rulemaking (NPRM) and the opportunity for public comment. Such a curtailed procedure is permitted by section 553(b) of the Administrative Procedure Act, 5 U.S.C. § 553(b), and section 307(d) of the Clean Air Act (CAA), 42 U.S.C. § 7607(d), when issuance of a proposal and public comments would be impracticable, unnecessary, or contrary to the public interest. The EPA is publishing this action without prior proposal because these are non-controversial changes that clarify and correct the final rule. The EPA finds that this constitutes good cause under 5 U.S.C. § 553(b) for a determination that the issuance of an NPRM is unnecessary. Moreover, since today's action does not create any new regulatory requirements, the EPA finds that good cause exists to provide for an immediate effective date.

II. Summary of and Rationale for Rule Corrections

A. Applicability

Paragraph (a) of section 63.800 of 40 CFR Part 63, subpart JJ is revised by replacing the word "criteria" with "definition," and the phrase "incidental furniture manufacturer" with "incidental wood furniture manufacturer." These changes are being made to correct editorial errors in order to clarify the applicability of the final rule.

Paragraph (b) of section 63.800 of 40 CFR Part 63, subpart JJ is revised by replacing the phrase "finishing materials, adhesives, cleaning solvents and washoff solvents" with "finishing materials, adhesives, cleaning solvents and washoff solvents used for wood furniture and wood furniture component manufacturing operations." This change is being made in response to comments from small metal furniture manufacturers who use many of these same materials to manufacture both metal and wood furniture. The change clarifies the EPA's intent that this provision be used for determining what percentage of a facility's hazardous air pollutant (HAP) emissions are generated by these listed materials used in making wood furniture and wood furniture components. Facilities qualify for an exemption from the requirements of the wood furniture NESHAP if their usage of these materials for wood furniture or wood furniture components manufacturing operations is below the cutoff levels and at least 90 percent of their annual HAP emissions are from materials used in wood furniture or wood furniture components manufacturing.

Paragraph (b)(3) of 40 CFR Part 63, subpart JJ, section 63.800 is revised to replace the phrase "uses materials containing no more than" with "emits no more than." The criterion in this paragraph for area source designation under this subpart is the amount of HAP emitted annually, not the amount used annually.

B. Definitions

The EPA has determined that several definitions should be revised either to correct errors that were in section 63.801, or to reflect additional information submitted to the EPA after promulgation of the final rule, or to further clarify issues that have been raised since promulgation of the final rule.

The EPA has revised the definition of "certified product data sheet (CPDS)" by adding the concentration levels at which volatile hazardous air pollutants (VHAP) compounds must be reported. This change is in response to concerns raised by industry suppliers. This revision will allow suppliers furnishing CPDS to the industry to easily identify which VHAP compounds must be reported on the CPDS.

The EPA has revised the definition of "coating" by adding a sentence that states, "Aerosol spray paints used for touchup and repair are not considered coatings under this subpart." This change clarifies the EPA's intent not to regulate these types of coatings at this time due to their low usage for touch up and repairs in wood furniture manufacturing operations. In addition, there is concern from industry representatives that it would be difficult to purchase or reformulate aerosol spray paints that meet the limits specified in the standards.

The reference to Table b in the definition of "VHAP of potential concern" under section 63.801 of this subpart has been corrected. The definition references "Table b of this subpart," but should reference "Table 6 of this subpart."

C. Tables

Two entries in Table 3 "Summary of Emission Limits" have been revised. Under the Finishing Operations listing, the term VHAP has replaced the term HAP both in item (b) and also in footnote b to Table 3. This change was made because the percent component of VHAP is the component of interest for this NESHAP.

III. Administrative Requirements

A. Docket

The docket is an organized and complete file of all of the information submitted to, or otherwise considered by, the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public to readily identify and locate documents to enable them to participate effectively in the rulemaking process. The contents of the docket serve as the record in case of judicial review (except for interagency review materials) (section 307(d)(7)(A) of the CAA, 42 U.S.C. § 7607(d)(7)(A)).

B. Paperwork Reduction Act

There are no additional information collection requirements contained in this correction to the final rule. Therefore, approval under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, is not required.

C. Executive Order 12866

Under Executive Order 12866, the EPA is required to determine whether a regulation is "significant" and therefore subject to Office of Management and Budget review and the requirements of this Executive Order to prepare a regulatory impact analysis. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may (1) have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or

D. Submission to Congress and the General Accounting Office

Under section 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a major rule as defined by section 804(2).

E. Petitions for Judicial Review

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 4, 1997. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2)).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Hydrocarbons, Incorporation by reference, Intergovernmental relations, Ozone, Reporting and recordkeeping requirements.

Authority: 42 U.S.C. 7401–7671q.

Dated: May 7, 1997.

Valdas V. Adamkus,

Regional Administrator.

For the reasons stated in the preamble, part 52, chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

1. The authority citation for Part 52 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

2. Section 52.770 is amended by adding paragraph (c)(120) to read as follows:

§ 52.770 Identification of Plan.

* * * * *

(c) * * *

(120) On August 26, 1996, Indiana submitted a rule requiring an oxides of nitrogen (NO_X) reasonably available control technology (RACT) rule for the Clark and Floyd Counties moderate ozone nonattainment area as a revision to the State Implementation Plan.

(i) Incorporation by reference. 326 Indiana Administrative Code 10: Nitrogen Oxides Rules. Rule 1: Nitrogen Oxides Control in Clark and Floyd Counties. Section 1: Applicability, Section 2: Definitions, Section 3: Requirements, Section 4: Emission limits, Section 5: Compliance procedures, Section 6: Emissions monitoring, and Section 7: Certification, record keeping, and reports. Adopted by the Indiana Air Pollution Control Board February 7, 1996. Filed with the Secretary of State May 13, 1996. Published at Indiana Register, Volume 19, Number 10, July 1, 1996. Effective June 12, 1996.

3. Section 52.777 is amended by adding paragraph (p) to read as follows:

§ 52.777 Control strategy: Photochemical oxidants (hydrocarbon).

* * *

(p) On August 26, 1996, Indiana submitted a rule for the purpose of meeting oxides of nitrogen (NO_X) reasonably available control technology (RACT) requirements under section 182(f) of the Clean Air Act (Act) for the Clark and Floyd Counties moderate ozone nonattainment area. The rule's NO_X control requirements meets RACT for major sources of portland cement kilns, electric utility boilers, and industrial, commercial, or institutional boilers. In addition, on April 30, 1997, Indiana certified to the satisfaction of the United States Environmental Protection Agency that, to the best of the State's knowledge, there are no remaining major sources of NO_X in Clark and Floyd Counties which need RACT rules. Indiana, therefore, has satisfied the NO_X RACT requirements under section 182(f) of the Act for the Clark and Floyd Counties ozone nonattainment area.

[FR Doc. 97–14437 Filed 6–2–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5833–6]

National Emission Standards for Hazardous Air Pollutants; Final Standards for Hazardous Air Pollutant Emissions From Wood Furniture Manufacturing Operations; Correction

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correction.

SUMMARY: This action corrects errors and clarifies regulatory text in the National Emission Standards for Hazardous Air Pollutants; Final Standards for Hazardous Air Pollutant Emissions from Wood Furniture Manufacturing Operations which was promulgated in the **Federal Register** on December 7, 1995 (60 FR 62930).

EFFECTIVE DATE: June 3, 1997.

FOR FURTHER INFORMATION CONTACT: For information concerning today's notice, contact Mr. Paul Almodovar, Coatings and Consumer Products Group, Emission Standards Division (MD–13), U.S. EPA, Research Triangle Park, NC 27711; telephone (919) 541–0283. For information regarding the applicability of this action to a particular entity, contact Mr. Robert Marshall, Manufacturing Branch, Office of Compliance, (2223A), U.S. EPA, 401 M Street, SW, Washington, DC 20460; telephone (202) 564–7021.

SUPPLEMENTARY INFORMATION:

Regulated Entities. Entities potentially affected by this action are owners or operators of facilities that are engaged, either in part or in whole, in wood furniture manufacturing operations and that are major sources as defined in 40 CFR Part 63, subpart A, section 63.2. Regulated categories include:

Category	Examples of regulated entities
Industry	Facilities which are major sources of hazardous air pollutants and manufacture wood furniture or wood furniture components.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities that the EPA is now aware potentially could be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility (company, business, organization, etc.) is regulated by this action, you should carefully examine the applicability criteria in section 63.800 of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing Operations that was promulgated in the **Federal Register** on December 7, 1995 (60 FR 62930) and codified at 40 CFR Part 63, subpart JJ. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

The information presented below is organized as follows:

I. Background.
II. Summary of and Rationale for Rule Corrections.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–300495; FRL–5719–3]

RIN 2070–AB78

Bifenthrin; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes time-limited tolerances for residues of the pesticide bifenthrin in or on the raw agricultural commodity crop group, cucurbits (Crop Group 9 - cucumbers, melons, and squash), and in or on the raw agricultural commodity raspberries, in connection with EPA's granting of emergency exemptions under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of bifenthrin on cucurbits in California, Arizona, and Texas; and use of bifenthrin on raspberries in Oregon and Washington. This regulation establishes maximum permissible levels for residues of bifenthrin on these commodities pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996. These tolerances will expire and are revoked on April 30, 1998 (cucurbits) and September 30, 1997 (raspberries).

DATES: This regulation becomes effective June 6, 1997. Objections and requests for hearings must be received by EPA on August 5, 1997.

ADDRESSES: Written objections and hearing requests, identified by the docket control number, [OPP–300495], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing requests shall be labeled "Tolerance Petition Fees" and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the document control number, [OPP], should be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing. requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA.

A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP–300495]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

FOR FURTHER INFORMATION CONTACT: By mail: Andrea Beard, Registration Division (7505W), Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail: Sixth Floor, Crystal Station #1, 2800 Jefferson Davis Highway, Arlington, VA 22202. (703) 308–8791, e-mail: beard.andrea@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing tolerances for residues of the pesticide ((2-methyl [1,1'-biphenyl]-3-yl) methyl-3-(2-chloro-3,3,3,-trifluoro-1-propenyl) -2,2-dimethylcyclopropanecarboxylate), also referred to in this document as bifenthrin, in or on cucurbits at 1.0 ppm, and in or on raspberries at 3.0 ppm. These tolerances will expire and be revoked on April 30, 1998 (cucurbits) and September 30, 1997 (raspberries). EPA will publish documents in the **Federal Register** to remove the revoked tolerances from the Code of Federal Regulations.

I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104–170) was signed into law August 3, 1996. FQPA amends both the FFDCA, 21 U.S.C. 301 et seq., and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 et seq. Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under a new section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996) (FRL–5572–9).

New section 408(b)(2)(A)(i) allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is "safe." Section 408(b)(2)(A)(ii) defines "safe" to mean that "there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information." This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to "ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue...."

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that "emergency conditions exist which require such exemption". This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166. Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without providing notice or period for public comment.

Because decisions on section 18-related tolerances must proceed before EPA reaches closure on several policy issues relating to interpretation and implementation of the FQPA, EPA does not intend for its actions on such tolerances to set binding precedents for the application of section 408 and the new safety standard to other tolerances and exemptions.

II. Emergency Exemptions for Bifenthrin and FFDCA Tolerances

Bifenthrin on cucurbits. From November 1996 - January 1997, requests were received from the California Department of Pesticide Regulation, and the Arizona and Texas Departments of Agriculture, (hereafter referred to as the Applicants) for specific exemptions under FIFRA section 18 for the use of

Therefore, this direct final rule was classified "non-significant" under Executive Order 12866 and was not required to be reviewed by OMB.

C. Regulatory Flexibility

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant impact on a substantial number of small entities because the temporary compliance extension would not impose any economic burden on any regulated entities.

D. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205, the EPA must select the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that this direct final rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

E. Submission to Congress and the General Accounting Office

Under Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996, the EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of this direct final rule in the **Federal Register**. This is not a "major rule" as defined by Subtitle E.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: May 30, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, part 63 of Chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 et. seq.

Subpart JJJ—National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins.

2. Section 63.1311 is amended by revising paragraphs (b) and (d) introductory text and by adding paragraph (d)(6) to read as follows:

§ 63.1311 Compliance schedule and relationship to existing applicable rules.

* * * * *

(b) New affected sources that commence construction or reconstruction after March 29, 1995 shall be in compliance with this subpart upon initial start-up or September 12, 1996, whichever is later, as provided in § 63.6(b), except that new affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET shall be in compliance with § 63.1331 upon initial start-up or September 12, 1999, whichever is later.

* * * * *

(d) Except as provided for in paragraphs (d)(1) through (d)(6) of this section, existing affected sources shall be in compliance with § 63.1331 no later than July 31, 1997 unless a request for a compliance extension is granted pursuant to Section 112(i)(3)(B) of the Act, as discussed in § 63.182(a)(6).

* * * * *

(6) Notwithstanding paragraphs (d)(1) through (d)(4) of this section, existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET shall be in compliance with § 63.1331 no later than September 12, 1999.

* * * * *

[FR Doc. 97–14860 Filed 6–5–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

Approval of Section 112(l) Program of Delegation; Indiana

[IN74–2; FRL5833–3]

AGENCY: Environmental Protection Agency.

ACTION: Final rule; removal.

SUMMARY: On April 1, 1997 (62 FR 15404), the Environmental Protection Agency (EPA) approved a delegation of the Federal air toxics program contained within title 40 of the Code of Federal Regulations parts 61 and 63 to the Indiana Department of Environmental Management (IDEM) through a direct final rule procedure. The USEPA is removing this final rule due to the adverse comment received on this action. In a subsequent final rule EPA will summarize and respond to the comments received and announce final rulemaking action on this requested program delegation.

DATES: The direct final rule published at 62 FR 15404 is removed effective June 6, 1997.

ADDRESSES: Copies of the documents relevant to this action are available for public inspection during normal business hours at the following location: U.S. Environmental Protection Agency, Region 5, Regulation Development Branch, 77 West Jackson Boulevard, Chicago, Illinois 60604.

FOR FURTHER INFORMATION CONTACT: Sam Portanova, Permits and Grants Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604. Telephone: (312) 886–3189.

List of Subjects in 40 CFR Part 63

Environmental protection, Administration practice and procedure, Air pollution control, Hazardous substances, Intergovernmental relations.

Dated: June 20, 1997.

Gail Ginsberg,

Acting Regional Administrator.

[FR Doc. 97–14560 Filed 6–5–97; 8:45 am]

BILLING CODE 6560–50–P

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities regulated by the NESHAP addressed in this direct final rule. If you have questions regarding the applicability of the NESHAP addressed in this direct final rule to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

The information presented in this preamble is organized as follows:

I. Background and Rationale
II. Authority for Temporary Extension of the Compliance Date and Reconsideration
III. Impacts
IV. Administrative Requirements

I. Background and Rationale

On September 12, 1996, the EPA promulgated 40 CFR part 63, subpart JJJ—Group IV Polymers and Resins NESHAP (61 FR 48208). 40 CFR 63.1331 establishes standards for equipment leaks based on the equipment leaks provisions from the Hazardous Organic NESHAP, 40 CFR part 63, subpart H. The final rule required existing sources to comply with 40 CFR 63.1331 beginning March 12, 1997 (*see* 40 CFR 63.1311(d)). On January 14, 1997, EPA extended the compliance date for 40 CFR 63.1331 from March 12, 1997 to July 31, 1997.

A petition has been submitted to the EPA by two PET manufacturers requesting reconsideration of the technical basis for estimates of emissions, emission reductions, and costs for equipment leaks emission control at PET affected sources. The petition summarizes new information claimed by the petitioners to "confirm the petitioners' comments made during the public comment period questioning the validity of EPA's predictions of the costs and cost-effectiveness of the leak detection and repair program." This new information, which the EPA did not have prior to promulgation of the final rule, includes data related to emissions and costs and has led the EPA to accept the petitioner's request to reconsider the equipment leak provisions of the rule applicable to PET affected sources. A second petition was subsequently filed by a third PET manufacturer requesting the same relief. For these reasons, the EPA is providing a temporary extension of the compliance date associated with the provisions of 40 CFR 63.1331 that regulate equipment leaks for PET affected sources until such time as the EPA is able to fully evaluate the petition for reconsideration and take any curative regulatory action necessary. This temporary extension applies to affected sources in the following regulated subcategories: (1) PET using a batch dimethyl terephthalate process; (2) PET using a continuous dimethyl terephthalate process; (3) PET using a batch terephthalic acid process; and (4) PET using a continuous terephthalic acid process. It does not affect any other provisions of the rule or any other source categories or subcategories.

By this action the EPA is providing, pursuant to Clean Air Act section 301(a)(1), a temporary extension of the compliance dates specified in 40 CFR 63.1311(b) and (d), only as necessary to complete reconsideration and potential revision of the rule. The EPA intends to complete its reconsideration of the rule and, following the notice and comment procedures of Clean Air Act section 307(d), take appropriate action as expeditiously as practical. The EPA does not believe this temporary extension will, as a practical matter, impact the overall effectiveness of the rule. The EPA will seek to ensure that the affected parties are not unduly prejudiced by the EPA's reconsideration. The compliance date will only be extended until the effective date of the EPA's final action following reconsideration of the rule. In no event will the extension last beyond September 12, 1999 which is the latest compliance date permitted by section 112 of the Clean Air Act (in the absence of a one year extension).

II. Authority for Temporary Extension of the Compliance Date and Reconsideration

The temporary extension of the compliance dates specified in 40 CFR 63.1311 (b) and (d) for PET affected sources is being undertaken pursuant to Clean Air Act section 301(a)(1). Reconsideration is being undertaken pursuant to Clean Air Act section 307(d)(7)(B). Reconsideration is appropriate if the grounds for an objection arose after the period for public comment and if the objection is of central relevance to the outcome of the rule.

The grounds for reconsideration of this rule arose after the public comment period. The emissions and cost data which serve as the basis for the summary of data provided by the petitioners became available after the close of the comment period on the rule. Therefore, the EPA is temporarily extending the compliance date specified in 40 CFR 63.1311 (b) and (d) for PET affected sources in order to allow time to reconsider the provisions of 40 CFR 63.1331 as these provisions pertain to PET affected sources.

III. Impacts

The extension on the compliance date for equipment leaks at PET affected sources will not affect the eventual annual estimated emissions reduction or the control cost for the rule.

IV. Administrative Requirements

A. Paperwork Reduction Act

For the Group IV Polymers and Resins NESHAP, the information collection requirements were submitted to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*. The OMB approved the information collection requirements and assigned OMB control number 2060–0351. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. The EPA has amended 40 CFR part 9, section 9.1, to indicate the information collection requirements contained in the Group IV Polymers and Resins NESHAP.

This action has no impact on the information collection burden estimates made previously. Therefore, the ICR has not been revised.

B. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether the regulatory action is "significant" and therefore, subject to OMB review and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The direct final rule will provide a temporary extension of the compliance dates specified in 40 CFR 63.1311 (b) and (d) for PET affected sources. The direct final rule does not add any additional control requirements.

.23(4)(a)2, (4)(b)3, (5)(a–b), (8); 335–3–6–.24(1)(a), (2); 335–3–6–.27(4); 335–3–6–.28(3), (4), (5)(a), (5)(f), (6), (7)(c–d); 335–3–6–.29(3)(a), (3)(a)3, 3(e), (4), (5), (6)(c–d); 335–3–6–.30(2)(d), (3), (4), (4)(c), (5)(a), (5)(c–d), (7); 335–3–6–.32(1)(a), (1)(a)7(b–c), (2)(a), (2)(a)2(b–c), (3)(a), (3)(a)2(b–c), (4)(a), (4)(a)3(b–d), (6)(a), (6)(b–c), (7)(a), (7)(b–c), (8)(a), (8)(b–c), (9)(a), (10)(a), (10)(b), (10)(c–d), (11)(a), (11)(b), (11)(c), (11)(d–e), (12)(a), (12)(b–d); 335–3–6–.33(3)(a–b), (4), (5), (6), (6)(b)3; 335–3–6–.34(5)(b–c); 335–3–6–.36(1)(a), (1)(b), (2)(a), (2)(a)4–6, (2)(c), (3)(a), (3)(b), (4)(a), (4)(c–e), (5), (6)(a)1–2, (6)(b); 335–3–6–.37(1)(c)3, (3)(a), (3)(b)1–2, (5)(a), (6)(a), (7)(a), (7)(c), (7)(d), (8)(a), (10)(a), (11)(a), (11)(d), (12)(a), (13)(a), (13)(a)11–16, (13)(a)20–22, (13)(b)1–2, (13)(c)1, (13)(c)3, (13)(c)3(i–iv), (13)(d)(4–5); 335–3–6–.39(4)(b); 335–3–6–.40; 335–3–6–.41(3)(a), (4)(a–b), (5)(a)2, (5)(b), (6); 335–3–6–.43(4), (6)(f–g); 335–3–6–.44(4)(a)2–3, (4)(b)3, (5)(a–c), (8); 335–3–6–.45(4)(a), (4)(a)1(I–III), (4)(a)3, (4)(b–c), (4)(d); 335–3–6–.46; 335–3–6–.47(1), (3)(a–c), (4)(d), (5)(a–b), (10)(a)7, (11)(c); 335–3–6–.48(1), (3); 335–3–6–.49(1), (5)(a); 335–3–6–.50(1); 335–3–6–.53(13); 335–3–8–.02(1); 335–3–9–.01(3); 335–3–12–.02(2); 335–3–13–.02(3); 335–3–13.03(3); 335–3–13–.04(3); 335–3–13–.05(3); 335–3–13–.06(3); 335–3–14–.01(1)(b–c), (1)(e), (1)(g), (1)(k), (1)(k)1–5, (6)(a), (6)(b), (6)(b)1, (6)(b)3, (6)(c), (7)(a)2, (7)(c–d); 335–3–14–.02(1)(a), (4)(b–c), (4)(e)1, (4)(e)4, (5)(a–c); 335–3–14–.03(1)(g)1–3, (1)(h)2(V), (2)(a), (2)(a)4(V), (2)(a)6(i–ii), (2)(a)7, (2)(a)7(i–ii), (2)(a)7(I), (2)(a)(7)(II)(iii), (2)(b–c), (2)(f–g); 335–3–14–.04(2), (2)(a)1(i–iii), (2)(b)1, (2)(c)2(i), (2)(c)4, (2)(c)6(i–ii), (2)(f), (2)(i), (2)(i)1, (2)(m)1, (2)(m)1(i), (2)(n)2, (2)(u)1, (2)(u)4, (2)(w)3, (6)5(b), (8)(a–d), (8)(e–f), (8)(g–h), (8)(h)3, (8)(k), (8)(l), (11)(a), (12)(a)(6–8), (12)(c), (13)(a), (15)(c), (15)(f–h), (17)(c), (18)(a), (18)(b)2–3, (18)(c), (18)(d), (19)(a), (19)(c); 335–3–14–.05(2)(c)1(ii), (2)(l), (3), (3)(c), (4)(c), (4)(c)2, (4)(d), (5–6), (6)(c), (7)(a), (9)(c)2, (9)(d), (11), (12)(a), (13)(b)7; 335–3–15–.01(b), (d–f), (h); 335–3–15–.02(3–4), (7)(c), (8)(f), (8)(h)2, (8)(h)4(i), (8)(h)4(iv), (9)(a)4(iv)1–3, (9)(a)4(iv)(V), (9)(a)6(i–ii), (9)(a)7, (9)(a)7(i–ii), (9)(a)7(ii)(I), (9)(a)7(iii), (9)(b–c), (9)(f–g); 335–3–15–.04(1)(a–d), (1)(e), (1)(g–h), (2)(a)(3)(c), (4)(a–b); and 335–3–15–.05(a) were adopted on October 15, 1996.

(ii) *Other material.* None.

[FR Doc. 97–14851 Filed 6–5–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5836–6]

RIN 2060–AE37

National Emission Standards for Hazardous Air Pollutants Emissions: Group IV Polymers and Resins

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule; extension of compliance.

SUMMARY: This action provides a temporary extension of the compliance dates specified in 40 CFR 63.1311(b) and (d) for poly(ethylene terephthalate) (PET) affected sources and announces the reconsideration of the equipment leak provisions contained in 40 CFR 63.1331 as these provisions pertain to PET affected sources. The EPA is providing this temporary extension only as necessary to complete reconsideration and any necessary revision to the rule. The EPA is providing this temporary extension pursuant to Clean Air Act section 301(a)(1).

DATES: The direct final rule will be effective July 27, 1997. However, if significant adverse comments on any portion of the direct final rule are received by July 7, 1997 then the EPA will publish a timely withdrawal of the direct final rule, and all public comments received will be addressed in a subsequent final rule. For additional information concerning comments, see the parallel proposal notice found in the Proposed Rules Section of this **Federal Register.**

ADDRESSES: *Comments.* Comments should be submitted (in duplicate, if possible) to: Air and Radiation Docket and Information Center (6102), Attention Docket Number A–92–45 (see docket section below), Room M–1500, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460. The EPA requests that a separate copy also be sent to the contact person listed under **FOR FURTHER INFORMATION CONTACT.** Comments and data may also be submitted electronically by following the instructions provided in the **SUPPLEMENTARY INFORMATION** section. No Confidential Business Information (CBI) should be submitted through electronic mail.

Docket. The official record for this rulemaking has been established under docket number A–92–45 (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments and data, which does not include any information claimed as CBI, is available for inspection between 8 a.m. and 4 p.m., Monday through Friday, excluding legal holidays. The official rulemaking record is located at the address in the **ADDRESSES** section. Alternatively, a docket index, as well as individual items contained within the docket, may be obtained by calling (202) 260–7548 or (202) 260–7549. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Rosensteel, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5608.

SUPPLEMENTARY INFORMATION:

Electronic Filing

Electronic comments and data can be sent directly to EPA at: a-and-r-docket@epamail.epa.gov. Electronic comments and data must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on diskette in WordPerfect 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number A–92–45. Electronic comments may be filed online at many Federal Depository Libraries.

Electronic Availability

This document is available in docket number A–92–45 or by request from the EPA's Air and Radiation Docket and Information Center (see **ADDRESSES**), and is available for downloading from the Technology Transfer Network (TTN), the EPA's electronic bulletin board system. The TTN provides information and technology exchange in various areas of emissions control. The service is free, except for the cost of a telephone call. Dial (919) 541–5742 for up to a 14,000 baud per second modem. For further information, contact the TTN HELP line at (919) 541–5348, from 1:00 p.m. to 5:00 p.m., Monday through Friday, or access the TTN web site at: http://ttnwww.rtpnc.epa.gov.

Regulated entities

Regulated categories and entities include:

Category	Examples of regulated entities
Industry	Facilities that produce PET.

propane gas delivery, and they provided some cost and safety data to support their views. A significant number of commenters to the IFR also raised identical issues, and several provided cost and safety data. These same issues were among the topics raised by participants in the public meeting and the two public workshops.

RSPA did not respond to the petitions for reconsideration prior to the close of the comment period in order not to prejudge the additional attendance requirement issue before all interested parties had an opportunity to comment on the IFR requirements. Because of the fast-approaching expiration date of the IFR, the need to take further regulatory action to ensure an acceptable level of safety is maintained during the delivery of liquefied compressed gases, and the identical nature of the issues raised by petitioners and commenters alike, RSPA finds that it is impracticable to issue a decision on the petitions for reconsideration prior to issuance of a final rule in RSPA docket HM–225. Consequently, RSPA will address the issues raised by petitioners and commenters regarding the IFR requirements in a final rule that it intends to issue prior to the expiration date of the IFR. Shortly thereafter, RSPA intends to issue a notice of proposed rulemaking to address broader issues raised during the course of this rulemaking, including the "unobstructed view" requirement in 49 CFR 177.834(l) and the need for hose maintenance requirements.

RSPA is issuing this document in accordance with 49 CFR 106.37(b).

Issued in Washington, DC on June 3, 1997.

Alan I. Roberts,

Associate Administrator for Hazardous Materials Safety.

[FR Doc. 97–14900 Filed 6–6–97; 8:45 am]

BILLING CODE 4910–60–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

Radio Broadcasting Services; Various Locations

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission, on its own motion, editorially amends the Table of FM Allotments to specify the actual classes of channels allotted to various communities. The changes in channel classifications have been authorized in response to applications filed by licensees and permittees operating on these channels. This action is taken pursuant to *Revision of Section 73.3573(a)(1) of the Commission's Rules Concerning the Lower Classification of an FM Allotment*, 4 FCC Rcd 2413 (1989), and the *Amendment of the Commission's Rules to permit FM Channel and Class Modifications [Upgrades] by Applications*, 8 FCC Rcd 4735 (1993).

EFFECTIVE DATE: June 9, 1997.

FOR FURTHER INFORMATION CONTACT: Kathleen Scheuerle, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, adopted May 21, 1997, and released May 30, 1997. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Center (Room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Services, Inc., 2100 M Street, NW., Suite 140, Washington, DC. 20037, (202) 857–3800.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of title 47 of the Code of Federal Regulations is amended as follows:

PART 73—[AMENDED]

1. The authority citation for part 73 continues to read as follows:

Authority: Secs. 303, 48 Stat., as amended, 1082; 47 U.S.C. 154, as amended.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under Colorado, is amended by removing Channel 295A and adding Channel 293C1 at La Junta, and by removing Channel 276C2 and adding Channel 276C1 at Limon.

3. Section 73.202(b), the Table of FM Allotments under Georgia, is amended by removing Channel 226C3 and adding Channel 226A at Warrenton.

4. Section 73.202(b), the Table of FM Allotments under Iowa, is amended by removing Channel 249A and adding Channel 249C3 at Ottumwa.

5. Section 73.202(b), the Table of FM Allotments under Nebraska, is amended by removing Channel 224A and adding Channel 224C2 at Albion.

6. Section 73.202(b), the Table of FM Allotments under Oklahoma, is amended by removing Channel 265C2 and adding Channel 265C3 at Sulphur.

7. Section 73.202(b), the Table of FM Allotments under South Dakota, is amended by removing Channel 244C1 and adding Channel 244C2 at Hot Springs.

8. Section 73.202(b), the Table of FM Allotments under Texas, is amended by removing Channel 232A and adding Channel 232C2 at Comanche, and by removing Channel 257C3 and adding Channel 257C2 at Linden.

9. Section 73.202(b), the Table of FM Allotments under Washington, is amended by removing Channel 271A and adding Channel 271C3 at Elma, and by removing Channel 270C3 and adding Channel 270C2 at Medical Lake.

10. Section 73.202(b), the Table of FM Allotments under Wyoming, is amended by removing Channel 288A and adding Channel 288C3 at Laramie.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 97–14800 Filed 6–6–97; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Part 195

[Docket No. PS–117; Amdt. 195–57]

RIN 2137–AC87

Low-Stress Hazardous Liquid Pipelines Serving Plants and Terminals

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Direct final rule.

SUMMARY: This final rule excludes from RSPA's safety regulations for hazardous liquid [1] pipelines (1) low-stress pipelines [2] regulated for safety by the U.S. Coast Guard; and (2) low-stress pipelines less than 1 mile long that serve certain plants and transportation terminals without crossing an offshore area or a waterway currently used for commercial navigation. RSPA previously stayed enforcement of the regulations against these pipelines to mitigate compliance difficulties that did not appear warranted by risk. The rule change conforms the regulations with this enforcement policy.

DATES: This direct final rule is effective October 7, 1997. If RSPA does not receive any adverse comment or notice

[1] "Hazardous liquid" means petroleum, petroleum products, or anhydrous ammonia.

[2] "Low-stress pipeline" means a hazardous liquid pipeline that is operated in its entirety at a stress level of 20 percent or less of the specified minimum yield strength (SMYS) of the line pipe.

G. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) of the Administrative Procedures Act (APA), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. §804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, air pollution control, Hazardous substances, Reporting and recordkeeping requirements, Wood furniture manufacturing.

Dated: May 30, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

1. The authority citation for Part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart JJ—National Emissions Standards for Wood Furniture Manufacturing Operations

2. § 63.801 is amended by revising the definition for "wood furniture component" to read as follows:

§ 63.801 Definitions.

* * * * *

Wood furniture component means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However, foam seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operation are excluded from this definition.

* * * * *

[FR Doc. 97–14988 Filed 6–6–97; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Part 171

[Docket No. RSPA–97–2133 (HM–225)]

Petitions for Reconsideration of Interim Final Rule: Cargo Tank Motor Vehicles in Liquefied Compressed Gas Service

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Deferral of decision on petitions for reconsideration of interim final rule; notice of meeting.

SUMMARY: RSPA is deferring action on a decision with respect to two petitions for reconsideration of the interim final rule issued in RSPA Docket HM–225 on February 19, 1997, regarding cargo tank motor vehicles in liquefied compressed gas service, until the agency issues a final rule in that docket. Specifically, the petitions for reconsideration raise issues identical to those raised by commenters to the interim final rule. RSPA is deferring action on the petitions for reconsideration in order to avoid prejudging issues that are more appropriate for resolution in the final rule. RSPA will address the issues raised by petitioners and commenters in a final rule, which it intends to issue prior to August 15, 1997, the expiration date of the interim final rule.

RSPA is also holding a public meeting on June 23, 1997, in Washington, DC, at the request of several interested parties, to discuss the interim final rule requirements and long-term solutions to the cargo tank emergency discharge control system issue.

DATES: The public meeting will be held on June 23, 1997, from 9 a.m. to 4 p.m.

ADDRESSES: The meeting will be held at the U.S. Department of Transportation (Room 2230, Nassif Building), 400 7th Street, S.W., Washington, D.C. 20590–0001.

FOR FURTHER INFORMATION CONTACT: Nancy E. Machado, Office of the Chief Counsel, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, S.W., Washington D.C. 20590–0001, telephone 202–366–4400.

SUPPLEMENTARY INFORMATION: On February 19, 1997, RSPA published an emergency interim final rule (IFR) in RSPA Docket HM–225 (62 FR 7638, Feb. 19, 1997). The IFR amended the Hazardous Materials Regulations (HMR), 49 CFR parts 171–180, to specify the conditions under which certain cargo tank motor vehicles may continue to be used on an interim basis, even if not equipped with emergency discharge control systems required by the HMR. The IFR specifically addresses MC 330, MC 331 and certain non-specification cargo tank motor vehicles used to deliver propane and other liquefied compressed gases.

The IFR was issued after the discovery of a safety deficiency affecting many of the cargo tank motor vehicles at issue and RSPA's denial of two emergency petitions for exemption from the HMR's emergency discharge control requirements. The IFR was intended as an alternative means of compliance with the HMR requirements. The intended effect of the IFR was to ensure, on an interim basis, an acceptable level of safety for delivery of liquefied compressed gases while a permanent solution to the problem was developed and implemented.

In the IFR, RSPA gave notice of a public meeting and two public workshops scheduled to gather information and allow comment on the IFR requirements. In the IFR, RSPA also solicited comments and data on the costs and effectiveness of alternative means of achieving a level of safety for the long term comparable to that provided by the current HMR requirements. Also, RSPA solicited comments on the costs and benefits of the interim measures adopted under the IFR. During the comment period, which closed on April 21, 1997, RSPA received over 40 comments from industry.

Also, on March 21, 1997, RSPA received a petition for reconsideration of the IFR from the National Propane Gas Association, on behalf of its members, and a petition for reconsideration jointly filed by Ferrellgas, L.P., Suburban Propane, L.P., AmeriGas Propane, L.P., Agway Petroleum Corporation and Cornerstone Propane Partners, L.P. Petitioners specifically request that RSPA reconsider the additional attendance requirement, which they believe effectively mandates that two or more attendants travel to and be present during the unloading of propane gas from a cargo tank motor vehicle. They assert that the high cost of compliance with the additional requirement is not supported by the safety record for

definition. The following is the revised definition for wood furniture component:

Wood furniture component means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However, foam seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operation are excluded from this definition.

The EPA is currently developing a separate NESHAP for foam fabricators which will cover facilities that manufacture foam seat cushions at foam fabricating plants for a variety of industries, including wood furniture manufacturers. To avoid duplicative requirements for such facilities, these foam seat cushions are no longer covered by this subpart. This will ensure that these facilities would not be subject to one set of requirements for seat cushions sold to the wood furniture industry and a different set of requirements for seat cushions sold to other industries. However, wood furniture manufacturing facilities that manufacture their foam seat cushions on-site or perform other upholstery operations still will be subject to the emission limits for the application of contact adhesives included in this subpart.

III. Administrative Requirements

A. Docket

Docket A–93–10 is an organized and complete file of all of the information submitted to, or otherwise considered by, the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public to readily identify and locate documents to enable them to participate effectively in the rulemaking process. The contents of the docket serves as the record in case of judicial review (except for interagency review materials) (§ 307(d)(7)(A) of the CAA, 42 U.S.C. 7607(d)(7)(A)).

B. Paperwork Reduction Act

There are no additional information collection requirements contained in these amendments to the final rule. Therefore, approval under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, is not required.

C. Executive Order 12866

Under Executive Order 12866, the EPA is required to determine whether a regulation is "significant" and therefore subject to Office of Management and Budget review and the requirements of this Executive Order to prepare a regulatory impact analysis. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may (1) have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this action is not a "significant regulatory action" within the meaning of the Executive Order.

D. Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis for this final rule. EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. This notice makes clarifying amendments to the Wood Furniture Manufacturing Operations NESHAP, including applicability and definitions. These amendments will not place any additional requirements on any entity affected by this rule, including small entities. Therefore, these amendments will not have a significant impact on a substantial number of small entities.

E. Regulatory Review

In accordance with sections 112(d)(6) and 112(f)(2) of the CAA, 42 U.S.C. 7412(d)(6) and 7412(f)(2), this regulation will be reviewed within 8 years of the date of promulgation. This review may include an assessment of such factors as evaluation of the residual health risk, any overlap with other programs, the existence of alternative methods of control, enforceability, improvements in emission control technology and health data, and recordkeeping and reporting requirements.

F. Unfunded Mandates Act

The economic impact analysis performed for the original rule showed that the economic impacts from implementation of the promulgated standards would not be "significant" as defined in Executive Order 12866. No changes are being made in these amendments that would increase the economic impacts. The EPA prepared the following statement of the impact of the original rule in response to the requirements of the Unfunded Mandates Reform Act.

There are no Federal funds available to assist State, local, and Tribal governments in meeting these costs. There are important benefits from volatile organic compounds and hazardous air pollutant emission reductions because these compounds have significant adverse impacts on human health and welfare and on the environment. The rule does not have any disproportionate budgetary effects on any particular region of the nation, State, local, or Tribal government, or urban, rural, or other type of community. On the contrary, the rule will result in only a minimal increase in the average product rates (less than 1 percent). Moreover, the rule will not have a material effect on the national economy.

Throughout the regulatory negotiation process prior to issuing the final rule on December 7, 1995, the EPA provided numerous opportunities for consultations with interested parties (e.g., public comment period; opportunity for a public hearing [none was requested]; meetings with industry, trade associations, State and local air pollution control agency representatives, environmental groups, State, local, and Tribal governments, and concerned citizens). Although small governments are not significantly or uniquely affected by this rule, these procedures, as well as additional public conferences and meetings, gave small governments an opportunity to give meaningful and timely input and obtain information, education, and advice on compliance.

Prior to the promulgation of the rule in 1995, the EPA considered several regulatory options. The final rule represents the least costly and least burdensome alternatives currently available for achieving the objectives of section 112 of the CAA. All of the regulatory options selected are based on pollution prevention measures. Finally, after careful consideration of the costs, the environmental impacts, and the comments, the EPA decided that the MACT floor was the appropriate level of control for this regulation.

(2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.

(j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

[FR Doc. 97–14856 Filed 6–6–97; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5836–8]

National Emission Standards for Hazardous Air Pollutants; Final Standards for Hazardous Air Pollutant Emissions From Wood Furniture Manufacturing Operations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: On December 7, 1995 (60 FR 62930), the EPA promulgated National Emission Standards for Hazardous Air Pollutants; Final Standards for Hazardous Air Pollutant Emissions from Wood Furniture Manufacturing Operations under section 112 of the Clean Air Act (CAA), 42 U.S.C. 7412. The national emission standards for hazardous air pollutants (NESHAP) requires existing and new major sources to control emissions using maximum achievable control technology (MACT) to control hazardous air pollutants. This action revises the definition of wood furniture component in the NESHAP to exclude foam seat cushions not made at a wood furniture manufacturing facility from this definition. The revisions clarify the applicability of the final rule to eliminate potential overlapping requirements with other NESHAP.

DATES: The direct final rule will be effective August 8, 1997 unless significant adverse comments are received by July 9, 1997. If the effective date is delayed, timely notice will be published in the **Federal Register**.

ADDRESSES: Interested parties may submit written comments (in duplicate, if possible) on the proposed changes to the NESHAP to: Air and Radiation Docket and Information Center (6102), Attention, Docket No. A–93–10, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. If a public hearing is held, it will be held at the EPA's Office of Administration Auditorium, Research Triangle Park, North Carolina.

FOR FURTHER INFORMATION CONTACT: For information concerning the standards and the proposed changes, contact Mr. Paul Almodóvar, Coatings and Consumer Products Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone (919) 541–0283. For information regarding the applicability of this action to a particular entity, contact Mr. Robert Marshall, Manufacturing Branch, Office of Compliance, (2223A), U.S. EPA, 401 M Street, SW, Washington, DC 20460; telephone (202) 564–7021.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are owners or operators of facilities that are engaged, either in part or in whole, in wood furniture manufacturing operations and that are major sources as defined in 40 CFR Part 63, subpart A, section 63.2. Regulated categories include:

Category	Examples of regulated entities
Industry	Facilities which are manor sources of hazardous air pollutants and manufacture wood furniture or wood furniture components.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities that EPA is now aware potentially could be regulated by this action. Other types of entities not listed in the table also could be regulated. To determine whether your facility [company, business, organization, etc.] is regulated by this action, you should carefully examine the applicability criteria in section 63.800 of the NESHAP for Wood Furniture Manufacturing Operations that was promulgated in the **Federal Register** on December 7, 1995 (60 FR 62930) and codified at 40 CFR part 63, subpart JJ. If you have questions regarding the applicability of this action to a particular entity, consult Mr. Robert Marshall at the address listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Any significant and timely adverse comments received on any portion of this direct final rule will be addressed in a subsequent final rule based on the proposed rule contained in the Proposed Rules Section of this **Federal Register** that is identical to this direct final rule. If no significant and timely adverse comments are received on this direct final rule, then the direct final rule will become effective August 8, 1997 and no further action will be taken on the parallel proposal published today.

The information presented below is organized as follows:

I. Background
II. Summary of and Rationale for Rule Changes
III. Administrative Requirements
A. Docket
B. Paperwork Reduction Act
C. Executive Order 12866
D. Regulatory Flexibility Act
E. Regulatory Review
F. Unfunded Mandates Act
G. Submission to Congress and the General Accounting Office

I. Background

On December 7, 1995 (60 FR 62930), the EPA promulgated the NESHAP for Wood Furniture Manufacturing Operations. These standards were codified as subpart JJ in 40 CFR part 63. These standards established emission limits for, among other things, coating and gluing of wood furniture and wood furniture components. Wood furniture components were defined to include "seat cushions," some of which are made of foam and are manufactured and glued to the wood furniture at the wood furniture manufacturing facility. Others are manufactured off-site at a foam fabrication facility, and provided to the wood furniture manufacturing facility to include with the final wood furniture product.

This action clarifies the applicability of the final rule by revising the definition of "wood furniture component" to exclude from this definition, seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operations. The manufacture of these foam seat cushions will be subject to a different NESHAP as discussed in more detail below.

II. Summary of and Rationale for Rule Changes

The EPA has revised the definition of "wood furniture component" in the Wood Furniture Manufacturing NESHAP to exclude foam seat cushions not made at a wood furniture manufacturing facility from this

intended to be opened or activated in a manner that exposes the contents to human contact. Products that qualify for this exemption must fully comply with all other CRP effectiveness, compatibility, and durability standards as well as all other requirements of 40 CFR part 157. CRP certification for products relying on this exemption must specify that the package does not comply with the senior and younger adult effectiveness specifications per this exemption. This exemption becomes effective on June 13, 1997 and expires on June 13, 2002.

List of Subjects in 40 CFR Part 157

Administrative practice and procedure, Infants and children, Packaging and containers, Pesticides and pest, Reporting and recordkeeping requirements.

Dated: June 4, 1997.

James Jones,

Acting Director, Registration Division, Office of Pesticide Programs.

[FR Doc. 97–15565 Filed 6–12–97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–300494; FRL–5718–8]

RIN 2070–AB78

Propiconazole; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes time-limited tolerances for combined residues of the pesticide propiconazole in on or the raw agricultural commodities dry beans, dry bean forage and dry bean hay in connection with EPA's granting of emergency exemptions under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of propiconazole on dry beans in Minnesota, North Dakota, Nebraska, Colorado and Kansas. These tolerances will expire and are revoked on December 31, 1998.

DATES: This regulation becomes effective June 13, 1997. Objections and requests for hearings must be received by EPA on or before August 12, 1997.

ADDRESSES: Written objections and hearing requests, identified by the docket control number, [OPP–300494], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing requests shall be labeled "Tolerance Petition Fees" and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the document control number, [OPP–300494], must also be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA. A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Such copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP–300494]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

FOR FURTHER INFORMATION CONTACT: By mail: Olga Odiott, Registration Division (7505W), Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460. Office location, telephone number, and e-mail: Sixth Floor, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA 22202. (703) 308-9363, e-mail: odiott.olga@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing tolerances for the combined residues of the pesticide propiconazole (1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole)and its metabolites determined as 2,4-dichlorobenzoic acid (DCBA) and expressed as parent compound, in or on dry beans at 0.5 part per million (ppm), in or on dry bean forage at 8.0 ppm, and in or on dry bean hay at 8.0 ppm. These tolerances will expire and be revoked by EPA on December 31, 1998. After December 31, 1998, EPA will publish a document in the **Federal Register** to remove the revoked tolerance from the Code of Federal Regulations.

I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104-170) was signed into law August 3, 1996. FQPA amends both the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 301 *et seq.*, and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.* Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996) (FRL–5572–9).

New section 408(b)(2)(A)(I)of the FFDCA allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is "safe." Section 408(b)(2)(A)(ii) defines "safe" to mean that "there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information." This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to "ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue...."

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that "emergency conditions exist which require such exemption." This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166. Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without

(ii) A record of the total hydrocarbon concentration, in 3-hour block averages, for those periods when the total hydrocarbon concentration being monitored pursuant to § 63.548(j)(2) exceeds the relevant limits established in § 63.543 (c), (d), and (e).

(4) The reports shall contain a summary of the records maintained as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a), including an explanation of the periods when the procedures were not followed and the corrective actions taken.

(5) The reports shall contain an identification of the periods when the pressure drop and water flow rate of wet scrubbers used to control process fugitive sources dropped below the levels established in § 63.548(i), and an explanation of the corrective actions taken.

(6) The reports shall contain a summary of the fugitive dust control measures performed during the required reporting period, including an explanation of the periods when the procedures outlined in the standard operating procedures manual pursuant to § 63.545(a) were not followed and the corrective actions taken. The reports shall not contain copies of the daily records required to demonstrate compliance with the requirements of the standard operating procedures manuals required under §§ 63.545(a) and 63.548(a).

[FR Doc. 97–15570 Filed 6–12–97; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 157

[OPP–250123; FRL–5720–5]

Ant or Roach Insecticide Bait Stations; Exemption From Adult Portion of Child-Resistant Testing Specifications

AGENCY: Environmental Protection Agency (EPA).

ACTION: Rule related notice.

SUMMARY: This document grants a 5–year exemption from the senior-adult test and younger-adult test effectiveness specifications, described in 16 CFR 1700.15(b)(2) (Ease of adult opening), for prefilled, nonrefillable ant or roach insecticide bait stations not designed or intended to be opened or activated in a manner that exposes the contents to human contact. Products qualifying for this exemption must still fully comply with all other child-resistant packaging (CRP) effectiveness, compatibility, and durability standards, as well as all other requirements of 40 CFR part 157. CRP certification for products relying on this exemption must specify that the package does not comply with the senior and younger adult effectiveness specifications per this exemption. This exemption was requested by S.C. Johnson & Son, Inc., which argued that a package that does not require opening or activation to put into use should not require adult ease of opening testing.

DATES: This exemption becomes effective on June 13, 1997 and expires on June 13, 2002.

FOR FURTHER INFORMATION CONTACT: Rosalind L. Gross, Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, Telephone number: (703) 308-7368, e-mail: gross.rosalind@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: S.C. Johnson & Son, Inc. requested an exemption from the senior-adult test and younger-adult test effectiveness specifications, described in 16 CFR 1700.15(b)(2) (Ease of adult opening), for prefilled, nonrefillable ant or roach insecticide bait stations that are not designed or intended to be opened or activated in a manner that exposes the contents to human contact.

I. Background

FIFRA 25(c)(3) requires EPA's CRP standards to be consistent with those of the Consumer Product Safety Commission (CPSC). EPA's CRP regulations at 40 CFR 157.32 require that CRP for pesticides meet the CPSC packaging standards (effectiveness specifications) and testing procedures set forth in 16 CFR 1700.15(b) and 17000.20. The CPSC Poison Prevention Packaging Standards in 16 CFR 1700.15(b) provide that CRP, when tested by the method described in 16 CFR 1700.20, shall meet certain child-resistant test, senior-adult test, and younger-adult test effectiveness specifications. In 16 CFR 1700.15(b)(2), the senior-adult test and younger-adult test effectiveness specifications are discussed with reference to the senior-adult panel test of 16 CFR 1700.20(a)(3) and the younger-adult panel test of 16 CFR 1700.20(a)(4), respectively.

The EPA CRP regulations provide that exemptions from compliance may be requested on a case-by-case basis for specific products based on technical factors (40 CFR 157.24(b)(3)). The regulations further provide that any such exemption decision will be published in the **Federal Register**, will be for a specified length of time, and will be applicable to any product with substantially similar composition and intended uses.

II. Requested Grounds for Exemption

As support for its exemption request, S.C. Johnson & Son, Inc. advanced the following arguments:

The purpose of adult testing is to ensure that CRP is not difficult for adults to use properly. If CRP is difficult for adults to open, the concern arises that the package may be disabled or left unsecured to eliminate the difficulty of reopening it. Under such circumstances the contents would be accessible to children. In the case of prefilled, nonrefillable ant or roach insecticide bait stations not designed or intended to be opened, this concern does not arise. There is no risk that an adult will disable or fail to resecure a difficult to open package, because the packages need not be opened or activated in order to function properly. As there is no concern that an adult will disable or fail to resecure such a package, there is also no concern that the contents of disabled or unsecured packages will be accessible to children. Instead, from a child safety standpoint, the only relevant question regarding such packages is whether they can prevent a child from gaining access to the bait.

III. Agency Determination

The Agency has considered the S.C. Johnson & Son, Inc. exemption request and the basis therefore and agrees that it is unnecessary to test the ability of a senior-adult or younger-adult to open and properly resecure a package not designed or intended to be opened or activated. No benefits in terms of improved child safety would be gained by such testing. Therefore, the Agency hereby grants a 5–year exemption from the senior-adult test and younger-adult test effectiveness specifications, described in 16 CFR 1700.15(b)(2) for prefilled, nonrefillable ant or roach insecticide bait stations not designed or intended to be opened or activated in a manner that exposes the contents to human contact. The Agency has authority under 40 CFR 157.24(b)(3) to grant an exemption from any CRP requirement, including the testing requirements, based on technical considerations.

IV. Exemption

A 5–year exemption is granted from the senior-adult test and younger-adult test effectiveness specifications, described in 16 CFR 1700.15(b)(2), for prefilled, nonrefillable ant or roach insecticide bait stations not designed

10 shall be used to conduct the evaluation. The temperature monitoring device shall meet the following performance and equipment specifications:

(A) The recorder response range must include zero and 1.5 times the average temperature identified in paragraph (j)(1)(iii) of this section.

(B) The monitoring system calibration drift shall not exceed 2 percent of 1.5 times the average temperature identified in paragraph (j)(1)(iii) of this section.

(C) The monitoring system relative accuracy shall not exceed 20 percent.

(D) The reference method shall be an National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or an alternate reference, subject to the approval of the Administrator.

(iii) The owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace subject to the total hydrocarbon emission standards shall monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams every 15 minutes during the total hydrocarbon compliance test and determine an arithmetic average for the recorded temperature measurements.

(iv) To remain in compliance with the standards for total hydrocarbons, the owner or operator must maintain an afterburner or combined exhaust temperature such that the average temperature in any 3-hour period does not fall more than 28 °C (50 °F) below the average established in paragraph (j)(1)(iii) of this section. An average temperature in any 3-hour period that falls more than 28 °C (50 °F) below the average established in paragraph (j)(1)(iii) of this section, shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543 (c), (d), or (e).

(2) *Continuous Monitoring of Total Hydrocarbon Emissions.* (i) The owner or operator of a secondary lead smelter shall install, operate, and maintain a total hydrocarbon continuous monitoring system and comply with all of the requirements for continuous monitoring systems found in subpart A, General Provisions.

(ii) Prior to or in conjunction with the initial compliance test to determine compliance with § 63.543 (c), (d), or (e), the owner or operator shall conduct a performance evaluation for the total hydrocarbon continuous monitoring system according to § 63.8(e) of the General Provisions. The monitor shall meet the performance specifications of Performance Specification 8, 40 CFR Part 60, Appendix B.

(iii) Allowing the 3-hour average total hydrocarbon concentration to exceed the applicable total hydrocarbon emission limit under § 63.543 shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543 (c), (d), or (e).

§ 63.549 Notification requirements.

(a) The owner or operator of a secondary lead smelter shall comply with all of the notification requirements of § 63.9 of subpart A, General Provisions.

(b) The owner or operator of a secondary lead smelter shall submit the fugitive dust control standard operating procedures manual required under § 63.545(a) and the standard operating procedures manual for baghouses required under § 63.548(a) to the Administrator or delegated authority along with a notification that the smelter is seeking review and approval of these plans and procedures. Owners or operators of existing secondary lead smelters shall submit this notification no later than July 23, 1997. The owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall submit this notification no later than 180 days before startup of the constructed or reconstructed secondary lead smelter, but no sooner than June 13, 1997. An affected source that has received a construction permit from the Administrator or delegated authority on or before June 23, 1995, shall submit this notification no later than July 23, 1997.

§ 63.550 Recordkeeping and reporting requirements.

(a) The owner or operator of a secondary lead smelter shall comply with all of the recordkeeping requirements under § 63.10 of the General Provisions. In addition, each owner or operator of a secondary lead smelter shall maintain for a period of 5 years, records of the information listed in paragraphs (a)(1) through (a)(6) of this section.

(1) An identification of the date and time of all bag leak detection system alarms, their cause, and an explanation of the corrective actions taken.

(2) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standards under § 63.543 (c), (d), or (e) by employing the method allowed in § 63.548(j)(1), the records shall include the output from the continuous temperature monitor, an identification of periods when the 3-hour average temperature fell below the minimum established under § 63.548(j)(1), and an explanation of the corrective actions taken.

(3) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standard under § 63.543 (c), (d), or (e) by employing the method allowed in § 63.548(j)(2), the records shall include the output from the total hydrocarbon continuous monitoring system, an identification of the periods when the 3-hour average total hydrocarbon concentration exceeded the applicable standard and an explanation of the corrective actions taken.

(4) Any recordkeeping required as part of the practices described in the standard operating procedures manual required under § 63.545(a) for the control of fugitive dust emissions.

(5) Any recordkeeping required as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a).

(6) Records of the pressure drop and water flow rate for wet scrubbers used to control metal hazardous air pollutant emissions from process fugitive sources.

(b) The owner or operator of a secondary lead smelter shall comply with all of the reporting requirements under § 63.10 of the General Provisions. The submittal of reports shall be no less frequent than specified under § 63.10(e)(3) of the General Provisions. Once a source reports a violation of the standard or excess emissions, the source shall follow the reporting format required under § 63.10(e)(3) until a request to reduce reporting frequency is approved.

(c) In addition to the information required under § 63.10 of the General Provisions, reports required under paragraph (b) of this section shall include the information specified in paragraphs (c)(1) through (c)(6) of this section.

(1) The reports shall include records of all alarms from the bag leak detection system specified in § 63.548(e).

(2) The reports shall include a description of the procedures taken following each bag leak detection system alarm pursuant to § 63.548(f) (1) and (2).

(3) The reports shall include the information specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section, consistent with the monitoring option selected under § 63.548(h).

(i) A record of the temperature monitor output, in 3-hour block averages, for those periods when the temperature monitored pursuant to § 63.548(j)(1) fell below the level established in § 63.548(j)(1).

through visual inspection, vibration detectors, or equivalent means.

(9) Except as provided in paragraphs (g) and (h) of this section, continuous operation of a bag leak detection system.

(d) The procedures specified in the standard operating procedures manual for maintenance shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(e) The bag leak detection system required by paragraph (a)(9) of this section, shall meet the specifications and requirements of paragraphs (e)(1) through (e)(8) of this section.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligram per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings.

(3) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loadings is detected over a preset level.

(4) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(6) Following initial adjustment, the owner or operator shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the approved SOP required under paragraph (a) of this section. In no event shall the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.

(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector must be installed downstream of the baghouse and upstream of any wet acid gas scrubber.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f) The standard operating procedures manual required by paragraph (a) of this section shall include a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan shall include, at a minimum, the procedures used to determine and record the time and cause of the alarm as well as the corrective actions taken to correct the control device malfunction or minimize emissions as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(2) The cause of the alarm must be alleviated by taking the necessary corrective action(s) which may include, but not be limited to, paragraphs (f)(2)(i) through (f)(2)(vi) of this section.

(i) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(g) Baghouses equipped with HEPA filters as a secondary filter used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in § 63.543, 63.544, or 63.545 are exempt from the requirement in § 63.548(c)(9) of this section to be equipped with a bag leak detector. The owner or operator of an affected source that uses a HEPA filter shall monitor and record the pressure drop across the HEPA filter system daily. If the pressure drop is outside the limit(s) specified by the filter manufacturer, the owner or operator must take appropriate corrective measures, which may include but not be limited to those given in paragraphs (g)(1) through (g)(4) of this section.

(1) Inspecting the filter and filter housing for air leaks and torn or broken filters.

(2) Replacing defective filter media, or otherwise repairing the control device.

(3) Sealing off a defective control device by routing air to other control devices.

(4) Shutting down the process producing the particulate emissions.

(h) Baghouses that are used exclusively for the control of fugitive dust emissions from any source subject to the lead emissions standard in § 63.545 are exempt from the requirement in § 63.548(c)(9) of this section to be equipped with a bag leak detector.

(i) The owner or operator of a secondary lead smelter that uses a wet scrubber to control particulate matter and metal hazardous air pollutant emissions from a process fugitive source shall monitor and record the pressure drop and water flow rate of the wet scrubber during the initial test to demonstrate compliance with the lead emission limit under § 63.544(c) and (d). Thereafter, the owner or operator shall monitor and record the pressure drop and water flow rate at least once every hour and shall maintain the pressure drop and water flow rate no lower than 30 percent below the pressure drop and water flow rate measured during the initial compliance test.

(j) The owner or operator of a blast furnace or collocated blast furnace and reverberatory furnace subject to the total hydrocarbon standards in § 63.543 (c), (d), or (e), must comply with the requirements of either paragraph (j)(1) or (j)(2) of this section, to demonstrate continuous compliance with the total hydrocarbon emission standards.

(1) *Continuous Temperature Monitoring.* (i) The owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace subject to the total hydrocarbon emission standards in § 63.543 (c), (d), or (e) shall install, calibrate, maintain, and continuously operate a device to monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams consistent with the requirements for continuous monitoring systems in subpart A, General Provisions.

(ii) Prior to or in conjunction with the initial compliance test to determine compliance with § 63.543 (c), (d), or (e), the owner or operator shall conduct a performance evaluation for the temperature monitoring device according to § 63.8(e) of the General Provisions. The definitions, installation specifications, test procedures, and data reduction procedures for determining calibration drift, relative accuracy, and reporting described in Performance Specification 2, 40 CFR Part 60, Appendix B, Sections 2, 3, 5, 7, 8, 9, and

(5) Method 25A shall be used to measure total hydrocarbon emissions to determine compliance under § 63.543 (c), (d), (e), and (g). The minimum sampling time shall be 1 hour for each run. A minimum of three runs shall be performed. A 1-hour average total hydrocarbon concentration shall be determined for each run and the average of the three 1-hour averages shall be used to determine compliance. The total hydrocarbon emissions concentrations for determining compliance under § 63.543(c), (d), and (e) shall be expressed as propane and shall be corrected to 4 percent carbon dioxide, as described in paragraph (c) of this section.

(c) For the purposes of determining compliance with the emission limits under § 63.543 (c), (d), and (e), the measured total hydrocarbon concentrations shall be corrected to 4 percent carbon dioxide as listed in paragraphs (c)(1) through (c)(2) of this section in the following manner:

(1) If the measured percent carbon dioxide is greater than 0.4 percent in each compliance test, the correction factor shall be determined by using equation (1).

$$F = \frac{4.0}{CO_2} \qquad (1)$$

where:

F = correction factor (no units)

CO_2 = percent carbon dioxide measured using Method 3B, where the measured carbon dioxide is greater than 0.4 percent.

(2) If the measured percent carbon dioxide is equal to or less than 0.4 percent, then a correction factor (F) of 10 shall be used.

(3) The corrected total hydrocarbon concentration shall be determined by multiplying the measured total hydrocarbon concentration by the correction factor (F) determined for each compliance test.

(d) Compliance with the face velocity requirements under § 63.544(b) for process fugitive enclosure hoods shall be determined by the following test methods in paragraphs (d)(1) or (d)(2) of this section.

(1) Owners and operators shall calculate face velocity using the procedures in paragraphs (d)(1)(i) through (d)(1)(iv) of this section.

(i) Method 1 shall be used to select the sampling port location in the duct leading from the process fugitive enclosure hood to the control device.

(ii) Method 2 shall be used to measure the volumetric flow rate in the duct from the process fugitive enclosure hood to the control device.

(iii) The face area of the hood shall be determined from measurement of the hood. If the hood has access doors, then face area shall be determined with the access doors in the position they are in during normal operating conditions.

(iv) Face velocity shall be determined by dividing the volumetric flow rate determined in paragraph (d)(1)(ii) of this section by the total face area for the hood determined in paragraph (d)(1)(iii) of this section.

(2) The face velocity shall be measured directly using the procedures in paragraphs (d)(2)(i) through (d)(2)(v) of this section.

(i) A propeller anemometer or equivalent device shall be used to measure hood face velocity.

(ii) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.

(iii) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).

(iv) A known relationship shall exist between the anemometer signal output and air velocity, and the anemometer must be equipped with a suitable readout system.

(v) Hood face velocity shall be determined for each hood open during normal operation by placing the anemometer in the plane of the hood opening. Access doors shall be positioned consistent with normal operation.

(e) Owners and operators shall determine compliance with the doorway in-draft requirement for enclosed buildings in § 63.544(b) using the procedures in paragraphs (e)(1) or (e)(2) of this section.

(1)(i) Owners and operators shall use a propeller anemometer or equivalent device meeting the requirements of paragraphs (d)(2)(ii) through (d)(2)(iv) of this section.

(ii) Doorway in-draft shall be determined by placing the anemometer in the plane of the doorway opening near its center.

(iii) Doorway in-draft shall be demonstrated for each doorway that is open during normal operation with all remaining doorways in the position they are in during normal operation.

(2)(i) Owners and operators shall install a differential pressure gage on the leeward wall of the building to measure the pressure difference between the inside and outside of the building.

(ii) The pressure gage shall be certified by the manufacturer to be capable of measuring pressure differential in the range of 0.02 to 0.2 mm Hg.

(iii) Both the inside and outside taps shall be shielded to reduce the effects of wind.

(iv) Owners and operators shall demonstrate the inside of the building is maintained at a negative pressure as compared to the outside of the building of no less than 0.02 mm Hg when all doors are in the position they are in during normal operation.

§ 63.548 Monitoring requirements.

(a) Owners and operators of secondary lead smelters shall prepare, and at all times operate according to, a standard operating procedures manual that describes in detail procedures for inspection, maintenance, and bag leak detection and corrective action plans for all baghouses (fabric filters) that are used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in §§ 63.543, 63.544, and 63.545, including those used to control emissions from building ventilation. This provision shall not apply to process fugitive sources that are controlled by wet scrubbers.

(b) The standard operating procedures manual for baghouses required by paragraph (a) of this section shall be submitted to the Administrator or delegated authority for review and approval.

(c) The procedures specified in the standard operating procedures manual for inspections and routine maintenance shall, at a minimum, include the requirements of paragraphs (c)(1) through (c)(9) of this section.

(1) Daily monitoring of pressure drop across each baghouse cell.

(2) Weekly confirmation that dust is being removed from hoppers through visual inspection, or equivalent means of ensuring the proper functioning of removal mechanisms.

(3) Daily check of compressed air supply for pulse-jet baghouses.

(4) An appropriate methodology for monitoring cleaning cycles to ensure proper operation.

(5) Monthly check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means.

(6) Monthly check of bag tension on reverse air and shaker-type baghouses. Such checks are not required for shaker-type baghouses using self-tensioning (spring loaded) devices.

(7) Quarterly confirmation of the physical integrity of the baghouse through visual inspection of the baghouse interior for air leaks.

(8) Quarterly inspection of fans for wear, material buildup, and corrosion

TABLE 3.—SUMMARY OF STANDARDS FOR PROCESS FUGITIVE SOURCES—Continued

Fugitive emission source	Control device lead compound emission limit (milligrams per dry standard cubic meter)	Enclosed hood or doorway face velocity (meters/minute)	Citation
Smelting furnace slag taps and molds during tapping	2.0	[1] 90	§ 63.544 (b), (c).
Refining kettles	2.0	[1] 75	§ 63.544 (b), (c).
Dryer transition pieces	2.0	[1] 110	§ 63.544 (b), (c).
Agglomerating furnace process vents and product taps	2.0	[1] 90	§ 63.544 (b), (c).
Control Option II			
Enclosed building ventilated to a control device	2.0		§ 63.544 (b), (c).
Applicable to Both Control Options			
Dryer and agglomerating furnace emission vents	2.0		§ 63.544(d).

[1] Enclosure hood face velocity applicable to those process fugitive sources not located in an enclosed building ventilated to a control device.

§ 63.545 Standards for fugitive dust sources.

(a) Each owner or operator of a secondary lead smelter shall prepare and at all times operate according to a standard operating procedures manual that describes in detail the measures that will be put in place to control fugitive dust emission sources within the areas of the secondary lead smelter listed in paragraphs (a)(1) through (a)(5) of this section.

(1) Plant roadways;

(2) Battery breaking area;

(3) Furnace area;

(4) Refining and casting area; and

(5) Materials storage and handling area.

(b) The standard operating procedures manual shall be submitted to the Administrator or delegated authority for review and approval.

(c) The controls specified in the standard operating procedures manual shall at a minimum include the requirements of paragraphs (c)(1) through (c)(5) of this section.

(1) Plant roadways—paving of all areas subject to vehicle traffic and pavement cleaning twice per day of those areas, except on days when natural precipitation makes cleaning unnecessary or when sand or a similar material has been spread on plant roadways to provide traction on ice or snow.

(2) Battery breaking area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, and pavement cleaning twice per day; or total enclosure of the battery breaking area.

(3) Furnace area—partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

(4) Refining and casting area—partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

(5) Materials storage and handling area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, vehicle wash at each exit from the area, and paving of the area; or total enclosure of the area and ventilation of the enclosure to a control device, and a vehicle wash at each exit.

(d) The standard operating procedures manual shall require that daily records be maintained of all wet suppression, pavement cleaning, and vehicle washing activities performed to control fugitive dust emissions.

(e) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any building or enclosure ventilation system any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

§ 63.546 Compliance dates.

(a) Each owner or operator of an existing secondary lead smelter shall achieve compliance with the requirements of this subpart no later than December 23, 1997.

(b) Each owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall achieve compliance with the requirements of this subpart by June 13, 1997 or upon startup of operations, whichever is later.

§ 63.547 Test methods.

(a) The following test methods in appendix A of part 60 listed in paragraphs (a)(1) through (a)(5) of this section shall be used to determine compliance with the emission standards for lead compounds under §§ 63.543(a), 63.544 (c), and (d), and 63.545(e):

(1) Method 1 shall be used to select the sampling port location and the number of traverse points.

(2) Method 2 shall be used to measure volumetric flow rate.

(3) Method 3 shall be used for gas analysis to determine the dry molecular weight of the stack gas.

(4) Method 4 shall be used to determine moisture content of the stack gas.

(5) Method 12 shall be used to determine compliance with the lead compound emission standards. The minimum sample volume shall be 0.85 dry standard cubic meters (30 dry standard cubic feet) and the minimum sampling time shall be 60 minutes for each run. Three runs shall be performed and the average of the three runs shall be used to determine compliance.

(b) The following test methods in appendix A of part 60 listed in paragraphs (b)(1) through (b)(5) of this section shall be used, as specified, to determine compliance with the emission standards for total hydrocarbons under § 63.543 (c), (d), (e), and (g):

(1) Method 1 shall be used to select the sampling port location to determine compliance under § 63.543(c), (d), (e), and (g).

(2) Method 2 shall be used to measure volumetric flow rate to determine compliance under § 63.543(g).

(3) The Single Point Integrated Sampling and Analytical Procedure of Method 3B shall be used to measure the carbon dioxide content of the stack gases to determine compliance under § 63.543 (c), (d), and (e).

(4) Method 4 shall be used to measure moisture content of the stack gases to determine compliance under § 63.543 (c), (d), (e), and (g).

(i) If a compliance test demonstrates a source emitted lead compounds at 1.0 milligram of lead per dry standard cubic meter (0.00044 grains of lead per dry standard cubic foot) or less during the time of the compliance test, the owner or operator of a secondary lead smelter shall be allowed up to 24 calendar months from the previous compliance test to conduct the next annual compliance test for lead compounds.

(j) The standards for process sources are summarized in table 2.

TABLE 2.—SUMMARY OF STANDARDS FOR PROCESS SOURCES

Furnace configuration	Lead compounds (milligrams per dry standard cubic meter)	Total hydrocarbons	Citation
Collocated blast furnace and reverberatory furnace:			
When both furnaces operating	2.0	20 parts per million by volume[1]	§63.543(a),(c).
When reverberatory furnace not operating	2.0	360 parts per million by volume[1] (existing)	§63.543(a),(c)(1).
		70 parts per million by volume[1] (new)[2]	§63.543(a),(c)(2).
Blast	2.0	360 parts per million by volume[1] (existing)	§63.543(a),(d).
		70 parts per million by volume[1] (new)[2]	§63.543(e).
		0.20 kilograms per hour[3]	§63.543(g).
Reverberatory, rotary, and electric	2.0	Not applicable	§63.543(a).

[1] Total hydrocarbons emission limits are as propane at 4 percent carbon dioxide to correct for dilution, based on a 3-hour average.
[2] New sources include those furnaces that commence construction or reconstruction after June 9, 1994.
[3] Applicable to blast furnace charging process fugitive emissions that are not combined with the blast furnace process emissions prior to the point at which compliance with the total hydrocarbons concentration standard is determined.

§63.544 Standards for process fugitive sources.

(a) Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in paragraphs (a)(1) through (a)(6) of this section in accordance with the equipment and operational standards presented in paragraphs (b) and (c) of this section.

(1) Smelting furnace and dryer charging hoppers, chutes, and skip hoists;

(2) Smelting furnace lead taps, and molds during tapping;

(3) Smelting furnace slag taps, and molds during tapping;

(4) Refining kettles;

(5) Dryer transition pieces; and

(6) Agglomerating furnace product taps.

(b) Process fugitive emission sources shall be equipped with an enclosure hood meeting the requirements of paragraphs (b)(1), (b)(2), or (b)(3) of this section, or be located in a total enclosure subject to general ventilation that maintains the building at a lower than ambient pressure to ensure in-draft through any doorway opening.

(1) All process fugitive enclosure hoods except those specified for refining kettles and dryer transition pieces shall be ventilated to maintain a face velocity of at least 90 meters per minute (300 feet per minute) at all hood openings.

(2) Process fugitive enclosure hoods required for refining kettles in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 75 meters per minute (250 feet per minute).

(3) Process fugitive enclosure hoods required over dryer transition pieces in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 110 meters per minute (350 feet per minute).

(c) Ventilation air from all enclosures hoods and total enclosures shall be conveyed to a control device. Gases discharged to the atmosphere from these control devices shall not contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(d) All dryer emission vents and agglomerating furnace emission vents shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(e) Except as provided in paragraph (f) of this section, following the date of the initial test to demonstrate compliance with paragraphs (c) and (d) of this section, the owner or operator of a secondary lead smelter shall conduct a compliance test for lead compounds on an annual basis (no later than 12 calendar months following the previous compliance test).

(f) If a compliance test demonstrates a source emitted lead compounds at 1.0 milligram of lead per dry standard cubic meter (0.00044 grains of lead per dry standard cubic foot) or less during the time of the compliance test, the owner or operator of a secondary lead smelter shall be allowed up to 24 calendar months from the previous compliance test to conduct the next annual compliance test for lead compounds.

(g) The standards for process fugitive sources are summarized in table 3.

TABLE 3.—SUMMARY OF STANDARDS FOR PROCESS FUGITIVE SOURCES

Fugitive emission source	Control device lead compound emission limit (milligrams per dry standard cubic meter)	Enclosed hood or doorway face velocity (meters/minute)	Citation
Control Option I			
Smelting furnace and dryer charging hoppers, chutes, and skip hoists	2.0	[1] 90	§63.544 (b), (c).
Smelting furnace lead taps and molds during tapping	2.0	[1] 90	§63.544 (b), (c).

which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace. Materials storage and handling area does not include areas used exclusively for storage of blast furnace slag.

Partial enclosure means a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter surrounding stored materials or process equipment to prevent the entrainment of particulate matter into the air.

Pavement cleaning means the use of vacuum equipment, water sprays, or a combination thereof to remove dust or other accumulated material from the paved areas of a secondary lead smelter.

Plant roadway means any area of a secondary lead smelter that is subject to vehicle traffic, including traffic by fork lifts, front-end loaders, or vehicles carrying whole batteries or cast lead ingots. Excluded from this definition are employee and visitor parking areas, provided they are not subject to traffic by vehicles carrying lead-bearing materials.

Process fugitive emission source means a source of hazardous air pollutant emissions at a secondary lead smelter that is associated with lead smelting or refining, but is not the primary exhaust stream from a smelting furnace, and is not a fugitive dust source. Process fugitive sources include, but are not limited to, smelting furnace charging points, smelting furnace lead and slag taps, refining kettles, agglomerating furnaces, and drying kiln transition pieces.

Refining kettle means an open-top vessel that is constructed of cast iron or steel and is indirectly heated from below and contains molten lead for the purpose of refining and alloying the lead. Included are pot furnaces, receiving kettles, and holding kettles.

Reverberatory furnace means a refractory-lined furnace that uses one or more flames to heat the walls and roof of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Rotary furnace (also known as a rotary reverberatory furnace) means a furnace consisting of a refractory-lined chamber that rotates about a horizontal axis and that uses one or more flames to heat the walls of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Secondary lead smelter means any facility at which lead-bearing scrap material, primarily, but not limited to, lead-acid batteries, is recycled into elemental lead or lead alloys by smelting.

Smelting means the chemical reduction of lead compounds to elemental lead or lead alloys through processing in high-temperature (greater than 980 °C) furnaces including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.

Total enclosure means a roofed and walled structure with limited openings to allow access and egress for people and vehicles that meets the requirements of 40 CFR 265.1101(a)(1), (a)(2)(i), and (c)(1)(i).

Vehicle wash means a device for removing dust and other accumulated material from the wheels, body, and underside of a vehicle to prevent the inadvertent transfer of lead contaminated material to another area of a secondary lead smelter or to public roadways.

Wet suppression means the use of water, water combined with a chemical surfactant, or a chemical binding agent to prevent the entrainment of dust into the air from fugitive dust sources.

§ 63.543 Standards for process sources.

(a) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast, reverberatory, rotary, or electric smelting furnace any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(b) [Reserved]

(c) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast furnace or reverberatory furnace any gases that contain total hydrocarbons in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, except as allowed under Paragraphs (c)(1) and (c)(2) of this section.

(1) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(2) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(d) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(e) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(f) If the owner or operator of a blast furnace or collocated blast furnace and reverberatory furnace combines the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges them to the atmosphere through a common emission point, then compliance with the applicable total hydrocarbon concentration limit under paragraph (c) of this section shall be determined downstream from the point at which the two emission streams are combined.

(g) If the owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace does not combine the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges such emissions to the atmosphere through separate emission points, then the total hydrocarbon emission rate for the blast furnace process fugitive emissions shall not be greater than 0.20 kilograms per hour (0.44 pounds per hour).

(h) Except as provided in paragraph (i) of this section, following the initial test to demonstrate compliance with paragraph (a) of this section, the owner or operator of a secondary lead smelter shall conduct a compliance test for lead compounds on an annual basis (no later than 12 calendar months following the previous compliance test).

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. Part 63 subpart X is revised to read as follows:

Subpart X—National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting

Secs.

63.541 Applicability.
63.542 Definitions.
63.543 Standards for process sources.
63.544 Standards for process fugitive sources.
63.545 Standards for fugitive dust sources.
63.546 Compliance dates.
63.547 Test methods.
63.548 Monitoring requirements.
63.549 Notification requirements.
63.550 Recordkeeping and reporting requirements.

Subpart X—National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting

§ 63.541 Applicability.

(a) The provisions of this subpart apply to the following affected sources at all secondary lead smelters: blast, reverberatory, rotary, and electric smelting furnaces; refining kettles; agglomerating furnaces; dryers; process fugitive sources; and fugitive dust sources. The provisions of this subpart do not apply to primary lead smelters, lead refiners, or lead remelters.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of secondary lead smelters subject to this subpart.

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART X

Reference	Applies to subpart X	Comment
63.1	Yes.	
63.2	Yes.	
63.3	Yes.	
63.4	Yes.	
63.5	Yes.	
63.6 (a), (b), (c), (e), (f), (g), (i) and (j)	Yes.	
63.6 (d) and (h)	No	No opacity limits in rule.
63.7	Yes.	
63.8	Yes.	
63.9 (a), (b), (c), (d), (e), (g), (h)(1–3), (h)(5–6), and (j)	Yes.	
63.9 (f) and (h)(4)	No	No opacity or visible emission limits in subpart X.
63.10	Yes.	
63.11	No	Flares will not be used to comply with the emission limits.
63.12 to 63.15	Yes.	

§ 63.542 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Agglomerating furnace means a furnace used to melt into a solid mass flue dust that is collected from a baghouse.

Bag leak detection system means an instrument that is capable of monitoring particulate matter (dust) loadings in the exhaust of a baghouse in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, transmittance or other effect to monitor relative particulate matter loadings.

Battery breaking area means the plant location at which lead-acid batteries are broken, crushed, or disassembled and separated into components.

Blast furnace means a smelting furnace consisting of a vertical cylinder atop a crucible, into which lead-bearing charge materials are introduced at the top of the furnace and combustion air is introduced through tuyeres at the bottom of the cylinder, and that uses coke as a fuel source and that is operated at such a temperature in the combustion zone (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Blast furnace charging location means the physical opening through which raw materials are introduced into a blast furnace.

Collocated blast furnace and reverberatory furnace means operation at the same location of a blast furnace and a reverberatory furnace with the volumetric flow rate discharged from the blast furnace being at equal to or less than that discharged from the reverberatory furnace.

Dryer means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.

Dryer transition piece means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.

Electric furnace means a smelting furnace consisting of a vessel into which reverberatory furnace slag is introduced and that uses electrical energy to heat the reverberatory furnace slag to such a temperature (greater than 980 °C) that lead compounds are reduced to elemental lead metal.

Enclosure hood means a hood that covers a process fugitive emission source on the top and on all sides, with openings only for access to introduce or remove materials to or from the source and through which an induced flow of air is ventilated.

Fugitive dust source means a stationary source of hazardous air pollutant emissions at a secondary lead smelter that is not associated with a specific process or process fugitive vent or stack. Fugitive dust sources include, but are not limited to, roadways, storage piles, materials handling transfer points, materials transport areas, storage areas, process areas, and buildings.

Furnace and refining/casting area means any area of a secondary lead smelter in which:

(1) Smelting furnaces are located; or

(2) Refining operations occur; or

(3) Casting operations occur.

High efficiency particulate air (HEPA) filter means a filter that has been certified by the manufacturer to remove 99.97 percent of all particles 0.3 micrometers and larger.

Lead alloy means an alloy in which the predominant component is lead.

Materials storage and handling area means any area of a secondary lead smelter in which lead-bearing materials (including, but not limited to, broken battery components, reverberatory furnace slag, flue dust, and dross) are stored or handled between process steps including, but not limited to, areas in

filter, and that these secondary filters may provide improved protection from bag leaks. The EPA also agrees that the use of a bag leak detector on such a system would likely provide little if any additional protection over proper inspection and monitoring of operating parameters (such as pressure drop). As such, the EPA is adding § 63.548(g) to exempt baghouses equipped with secondary HEPA filters from the bag leak detection requirement and add alternative monitoring requirements for these systems.

Comment: One commenter (Docket ID No. IV–D–50) argued that the requirement for bag leak detectors on all baghouses for process, process fugitive, and fugitive emissions is excessive. They contend that there are applications, particularly baghouses used to control particulate from building ventilation, in which units will not function due to the nature of the particulate.

Response: Upon further review, the EPA agrees that bag leak detectors will provide little to no useful information on baghouses used to control fugitive dust emissions from building ventilation. This is due to the low inlet loadings associated with these systems. As such, the EPA is adding § 63.548(h) to exempt baghouses used to control fugitive dust emissions from the bag leak detection requirement. Owners and operators are still required to develop and adhere to a SOP for the operation and maintenance of these baghouses that meets the minimum requirements specified in § 63.548(c).

V. Administrative Requirements

A. Docket

The docket is an organized and complete file of all the information considered by the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docket system is intended to allow members of the public and affected industries to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the BID's and preambles to the proposed and promulgated standards, the contents of the docket will serve as the official record in case of judicial review (section 307(d)(7)(A) of the Act).

B. Executive Order 12866

The Agency must determine whether a regulatory action is "significant" and therefore subject to OMB review and the requirements of the E.O. 12866, (58 FR 51735, October 4, 1993): The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this amendment to the final rule is not a "significant regulatory action" under the terms of the Executive Order and is therefore not subject to OMB review.

C. Unfunded Mandates Act

Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act") requires that the Agency prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by State, local, and tribal governments, in aggregate, or by the private sector, of $100 million or more in any 1 year. Section 203 requires the Agency to establish a plan for obtaining input from and informing, educating, and advising any small governments that may be significantly or uniquely affected by the rule.

Under section 205 of the Unfunded Mandates Act, the Agency must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. The Agency must select from those alternatives the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule, unless the Agency explains why this alternative is not selected or the selection of this alternative is inconsistent with law.

This amendment reduces the costs of complying with the final rule, it will not increase expenditures by State, local, and tribal governments or the private sector. Therefore, the Agency has not prepared a budgetary impact statement or specifically addressed the selection of the least costly, most cost-effective, or least burdensome alternative. Because small governments will not be significantly or uniquely affected by this rule, the Agency is not required to develop a plan with regard to small governments.

D. Paperwork Reduction Act

Under the Paperwork Reduction Act, 44 U.S.C 3501 *et seq.*, the EPA must consider the paperwork burden imposed by any information collection request in a proposed or final rule. This amendment to the rule will not impose any new information collection requirements.

E. Regulatory Flexibility Act

The Regulatory Flexibility Act (or RFA, Public Law 96–354, September 19, 1980) requires Federal agencies to give special consideration to the impact of regulation on small businesses. The RFA specifies that a regulatory flexibility analysis must be prepared if a screening analysis indicates a regulation will have a significant economic impact on a substantial number of small entities. EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. This amendment will not result in increased economic impacts to small entities, and will result in reduced impacts in all cases.

F. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This amendment is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements, Secondary lead smelters.

Dated: June 4, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

opportunity to comment on the requirements.

Response: The EPA's intent was to require adequate ventilation to ensure air flow into the building at all doorways during normal operation conditions. Upon further consideration, the EPA believes that the 250 foot per minute doorway velocity requirement is excessive for this purpose, and would result in undue burden to the industry. As such, the EPA is revising the requirement. As revised, a facility must ventilate the building to a rate that ensures air flow is into the building at all doorways that would be open during normal operation. Two alternative methods are provided for demonstrating compliance. Owners and operators can choose to demonstrate in-draft at each door using a vane anemometer, or may install a pressure gauge on the leeward wall to demonstrate that the building is maintained at a lower than ambient pressure.

C. Minimum Baghouse SOP Requirements

Comment: One petitioner (Docket ID No. IV–D–50) commented on the minimum requirements for the baghouse inspection and maintenance SOP. While agreeing that an appropriate inspection and maintenance program is critical to monitoring performance, they argued that the minimum requirements set forth by the rule were unrealistic and unnecessary in some cases. The petitioner indicated that the EPA underestimated the labor required to satisfy the minimum requirements. The petitioner also argued that frequent baghouse inspections would result in increased fugitive emissions (due to wear on door seals) and worker exposure.

Response: The EPA has reviewed the minimum requirements for the baghouse inspection and maintenance SOP, and the labor estimates provided by the petitioners. The labor estimates to complete the minimum inspection requirements are significantly higher than previously estimated. The EPA has revised § 63.548(c) to reflect a more realistic schedule. In addition, several of the requirements have been reworded to allow for alternatives to visual inspections where appropriate. The revised requirements, which still include continuous bag leak detection, will reduce the labor burden associated with baghouse inspections while still providing adequate protection of the environment.

D. Bag Leak Detection System Specifications and Requirements

Comment: Two petitioners (Docket ID No. IV–D–48, and IV–D–50) commented on the rules requirement that a compliance test be performed after any adjustments to the required bag leak detectors are made. One petitioner (Docket ID No. IV–D–48) stated that this requirement does not reflect the realities of normal operations and, as such, may cause unacceptable difficulties in practice. They further stated that all measurement instruments require calibration on a routine basis, with the calibration interval dependent upon the instrument's sensitivity and detection requirements. Without such sensitivity adjustments, the presence of drift may cause the system to operate improperly. The second petitioner (Docket ID No. IV–D–50) echoed the need for periodic adjustments to account for drift. They also commented that the requirement tying the adjustment to compliance testing ignores the actual operation of bag leak detectors. Because there is no set relationship between the particulate emissions, as measured by the unit, and lead emission levels, the bag leak detector is not a monitor of lead emissions. Rather, its purpose is to reveal bag leaks.

Response: Upon further consideration, the EPA agrees that periodic adjustment of the bag leak detector system may be necessary, and that adjustment of the bag leak detector should not be tied to compliance demonstrations. The intended use of the bag leak detector was as a process monitor, able to identify upset conditions in the baghouse operation. The EPA is concerned however, that unrestricted adjustment of the bag leak detector could result in improper use, possibly resulting in the alarm and sensitivity settings being set such that leaks or malfunctions could occur undetected. As such, the EPA has revised the bag leak system adjustment requirements to: (1) delink bag leak detector adjustment and compliance testing, (2) allow for routine minor adjustments to the detector system, (3) require owners and operators to identify in their baghouse SOP all routine adjustments expected, and (4) require that owners and operators perform a complete baghouse inspection to ensure proper operation of the baghouse prior to any significant adjustments to the sensitivity or range.

In addition, a requirement for annual compliance testing has been instated. Instating annual compliance testing should not result in a significant increase in compliance testing costs over those imposed in the promulgated rule. The EPA assumed that facilities would wish to adjust bag leak detection settings at least once a year, which as written, would have triggered compliance testing.

Comment: One petitioner (Docket ID No. IV–D–48) argued that the bag leak detection system detection capability requirement is too restrictive. Section 63.548(e)(1) requires that the bag detection system be able to detect emissions of particulate matter at 1.0 milligram per actual cubic meter or less. The petitioner argues that, since the bag leak detector system monitors PM rather than lead, the specification does not correlate to the emission limit in the rule. They also argue that the specification is unnecessary to ensure that a bag leak detection system is capable of detecting tears and/or leaks in baghouse bags. Furthermore, the petitioner noted concern that the specification is based on information provided by only one manufacturer of one type of bag leak detector.

Response: The EPA did not intend to tie the bag leak detector detection capability to the lead limit. The intent of the requirement was to set a minimum detection capability to ensure a minimum quality and capability of the detection systems to be used. Bag leak detection systems were being used at several secondary lead smelters. The detection capability was set based on what was believed to be the detection capability of the systems already being used at these smelters. Upon further review it was determined that the 1.0 milligram per actual cubic meter detection capability was actually the capability of the most sensitive bag leak detectors available, and was not representative of the bag leak detectors already in use at secondary lead smelters. The EPA is increasing the detection capability to 10 milligram per actual cubic meter which is more representative of the existing bag leak detectors, and still meets the EPA's purpose of ensuring systems capable of detecting baghouse upset conditions.

Comment: One petitioner (Docket ID No. IV–D–48) commented that some baghouses are equipped with HEPA filters. The petitioner believes that it is unnecessary and impractical to require bag leak detection systems for these units, and that requiring visual inspections of the HEPA units and review of operating readouts in accordance with an approved SOP is fully protective of human health and the environment.

Response: The EPA acknowledges that some baghouses are equipped with HEPA filters which act as a secondary

not significantly change the cost and economic impacts of the final rule.

III. Public Participation

Following promulgation, the EPA received three petitions for reconsideration from representatives of secondary lead smelters (Docket ID Nos. IV–D–48, IV–D–49, and IV–D–50). The EPA met with the petitioners to discuss the comments contained in the petitions. Following the meeting, the petitioners provided the EPA with additional information to support the comments made in the petitions (Docket ID Nos. IV–D–51, and IV–D–52).

IV. Significant Public Comments and Responses

The EPA received three petitions to reconsider from owners and operators of secondary lead smelters and industry trade associations. Two of the three petitions contained multiple comments. A document that summarizes the comments and arguments advanced in the petitions, and the EPA responses, was prepared. The document, entitled "Summary of Petition Comments on Promulgated Rule and EPA Responses, Secondary Lead Smelting NESHAP", may be found in the docket (Docket ID No. V–B–2). It serves as the basis for the revisions that have been made to the standard since promulgation. This section contains a detailed discussion of the significant comments contained in the petitions and the EPA's responses. Significant comments and new information were received on four topics: the definition of collocated blast and reverberatory furnaces, test methods for determining hood face and doorway air velocities, minimum baghouse SOP requirements, and bag leak detection system specifications and requirements.

A. Definition of Collocated Blast Furnace and Reverberatory Furnaces

Comment: Two petitioners (Docket ID Nos. IV–D–49, and IV–D–50) requested reconsideration of the THC limit for collocated blast furnaces and reverberatory furnaces. One petitioner (Docket ID No. IV–D–49) indicated that their blast furnace was originally designed as a primary lead blast furnace, and as such, had an exhaust rate 10 times higher than typical secondary lead blast furnaces. The high blast furnace exhaust rate compared to their low reverberatory exhaust rate made commingling technically and economically infeasible. The petition supplied information to support the claim.

The second petitioner (Docket ID No. IV–D–50) pointed out that the term "collocated" was not defined, and argued that smelter configurations very dramatically. They identified one facility that would have difficulty meeting the requirements since they had two blast furnaces and only one reverberatory furnace. Upon request, the petitioner supplied the exhaust flowrates for the two blast furnaces (25,300 scfm, total) and the reverberatory furnace (8,800 scfm) (Docket ID No. IV–D–52).

Response: The EPA reviewed the requests and the additional information provided by the petitioners. The EPA evaluated the differences in furnace exhaust rates for facilities with blast and reverberatory furnaces (Docket ID No. II–B–36). Information on the exhaust rates was obtained for all eight of the existing facilities with both blast and reverberatory furnaces. On reviewing the information, two groupings of facilities were evident. Six of the facilities had blast furnace exhaust rates which were less than roughly half that of the reverberatory exhaust rate. In contrast, two facilities had blast furnace exhaust rates which are more than 150 percent of the reverberatory exhaust rate. These two facilities, Doe Run, Missouri; and Schuylkill, Louisiana, are the facilities represented in the petitions.

Commingling of the exhaust gases is the basis for the collocated blast furnace and reverberatory furnace THC emission limit. The principle of commingling the exhaust gases is based on a large hot (2000+ degree Fahrenheit) reverberatory furnace exhaust acting as the principle heat source to incinerate any organics in the smaller cooler (roughly 200 °F) blast furnace exhaust. Clearly this condition is not met at the two facilities represented in the petitions. As such, it is unlikely that these two facilities would be able to achieve the THC standard for collocated blast furnaces and reverberatory furnaces by commingling, nor is it likely that they could achieve the standard through the use of afterburners.

To correct this situation, the EPA is adding the following definition of collocated blast furnace and reverberatory furnace to the final rule:

"Collocated blast furnace and reverberatory furnace means operation at the same location of a blast furnace and a reverberatory furnace with the volumetric flow rate discharged from the blast furnace equal to or less than that discharged from the reverberatory furnace."

Under this definition, the two facilities represented in the petition would not be classified as having a collocated blast furnace and reverberatory furnace. As such, their blast furnaces would be subject to the blast furnace THC limit of 360 ppmv as propane rather than the 20 ppmv limit for collocated furnaces.

B. Test Methods for Determining Hood Face and Doorway Air Velocities

Comment: One petitioner (Docket ID No. IV–D–50) objected to the requirements in the rule for demonstrating compliance with the hood face air velocity standard. Specifically, the petitioner objected to the requirement that all access doors to a hood be open when measuring hood face velocity. The petitioner noted that at least one smelter has a charging hood with two doors to allow charging from either direction, but only one is open at any one time. In addition, the petitioner pointed out that some of the doors are used solely for the purpose of allowing periodic access for maintenance and other necessary activities. The petitioner argues that the requirement may render compliance with the face velocity standard impossible for certain operators, and does so unnecessarily because it does not reflect normal operations.

Response: The intent of the requirements is to ensure that adequate capture velocities are maintained during normal operating conditions. The EPA did not intend to require compliance demonstrations during artificial "worst case" operating conditions. As such, the EPA is revising § 63.547(d) to clarify the rule's intent.

Each access door and opening open during normal operation shall be tested. When a given access door is being tested, all other access doors shall be in the position they would be in during normal operation.

Comment: Two petitioners commented on the requirements for demonstrating compliance with the doorway air velocity standard for total enclosures. One petitioner (Docket ID No. IV–D–50) noted that the requirement could be read to mean that all doors that might be open during normal operation be open simultaneously during testing, regardless of whether such conditions occur during normal operations. A second petitioner (Docket ID No. IV–D–48) also commented that the rule was ambiguous on where and how the compliance with the air velocity requirement is to be measured. The petitioner also noted concern about the acheivability of the 250 feet per minute air velocity requirement. Both petitioners noted that requirements on doorway air velocities were not contained in the proposed rule, and that the industry did not have an

recordkeeping and reporting requirements in the General Provisions to part 63 (40 CFR part 60, subpart A). In addition, the owners and operators will be required to maintain records demonstrating that they have implemented the requirements of the fugitive dust control SOP and the baghouse SOP, including records of all bag leak detection system alarms and corrective actions.

B. Summary of Changes Made Since Promulgation

The EPA has made several changes to the promulgated rule based on comments contained in the petitions for reconsideration. A summary of the changes is presented below. Additional discussion of the changes and the rationale for these changes is presented in section II–C of this preamble.

1. Definitions

Several definitions were revised or added to resolve issues and clarify the intent of the rule. The definition of a bag leak detection system was revised to specifically not exclude devices that operate on the principle of light transmittance. Bag leak detection systems still must meet the specifications outlined in § 63.548(e).

A definition of collocated blast furnace and reverberatory furnace was added. The new definition is based, in part, on the relative exhaust rate for the blast furnace compared to the reverberatory furnace. This definition was added in response to comments from two smelters where the blast furnace exhaust was substantially higher than the reverberatory furnace making commingling infeasible.

The definitions of secondary lead smelter and smelting were revised and a definition of lead alloy was added to clarify that solder reclamation operations are not subject to the rule.

The definitions of partial and total enclosure were revised to clarify the intent of the rule. A definition of a high efficiency particulate air (HEPA) filter was added for completeness.

2. Standards for Process Fugitive Sources

Section 63.544 was re-organized to clarify the intent of the rule due to comments received. Specifically, the section was revised to make it clear that a facility wishing to comply with the standard through the use of a total enclosure may still use local hooding within the total enclosure, and that a facility may choose to control some fugitive emission sources with total enclosures and others through enclosure hooding. These changes do not affect the requirements of the rule.

The minimum doorway air velocity requirement for total enclosures has been deleted. As revised, owners and operators choosing to control process fugitive emission sources through total enclosures are required to ventilate the building at a rate that would ensure in-draft at all doorways. This requirement would replace the requirement for maintaining an in-draft velocity of 250 meters per minute at all doorways.

3. Test Methods and Schedule

The test method for demonstrating compliance with the hood face velocity has been revised to address comments received in the petitions. The current procedure could be read to require facilities to test the hood face velocity with all access doors in the open position. One petitioner argued that this requirement would, in many instances, result in artificial operating conditions that would make compliance impossible for certain operators. The rule is being revised to clarify that facilities may demonstrate compliance with the access doors positioned consistent with normal operation.

The test method for demonstrating compliance with the doorway air velocity requirements has been revised to address comments received in the petitions. As revised, owners and operators are given two options for demonstrating that the enclosure is ventilated at a sufficient rate to ensure in-draft at all openings. Under the first option, a vane anemometer is placed in the center of each doorway to demonstrate that air is being drawn into the building. Alternatively, an owner or operator can elect to install a pressure gauge on the leeward wall of the enclosure and demonstrate that the building is under a negative pressure as compared to ambient pressure.

4. Monitoring Requirements

The minimum maintenance requirements specified in the rule have been revised to address comments received in the petitions. The frequency of several of the required inspections were lowered to reduce the burden placed on operators. In addition, the requirements were revised to allow for alternative means of inspection where appropriate (e.g., fan vibration analysis in lieu of visual inspection for wear).

The specifications and requirements for bag leak detection systems have been revised. The minimum detection capability of the bag leak system was increased to 10 milligram per actual cubic meter from 1 milligram per actual cubic meter.

The requirement that a facility perform a compliance test in order to adjust the settings on the bag leak detection system has been dropped. Facilities will be allowed to adjust the bag leak detector as provided in written EPA guidance or manufacturers written guidance in the event EPA guidance is not available. In addition, annual compliance tests have been instated.

The bag leak detection requirement for positive pressure baghouses has been changed. Positive pressure baghouses equipped with stacks now must meet the same bag leak detection system requirements as negative pressure baghouses. None of the affected secondary lead smelters currently operate any positive pressure baghouses without stacks, nor are any expected to install such systems. Therefore positive pressure baghouses without stacks are not addressed in the rule.

Facilities that have equipped their baghouses with HEPA filters as a secondary filter to control emissions escaping the baghouse primary filter are exempted from the bag leak detection requirements. However, the facility must monitor the pressure drop across the HEPA filter, and if the pressure drop falls outside of the limit(s) specified by the filter manufacturer, the owner must take appropriate corrective measures. Baghouses that are used to control emissions from total enclosures used to comply with the fugitive dust standards (§ 63.545) are also exempted from the bag leak detection requirements.

5. Notification Requirements

The submittal date for the fugitive dust control SOP and the SOP for baghouses has been extended by 30 days from June 23, 1997, to July 23, 1997. This extension is being made to allow owners and operators adequate time to incorporate the changes being made in this revision into their SOP manuals.

C. Summary of Environmental, Energy, Health, Cost, and Economic Impacts

The final standards, as amended, will reduce total nationwide emissions of both metal HAP's and organic HAP's from secondary lead smelters by 1,230 megagrams per year (Mg/yr) (1,356 tons/yr). These reductions include 53 Mg/yr (58 tons/yr) of metal HAP's and 1,176 Mg/yr (1,296 tons/yr) of organic HAP's. The organic HAP emission reduction estimate has been reduced since promulgation by 54 Mg/yr (60 tons/yr). This change is due to two facilities no longer meeting the definition of a facility with a collocated blast furnace and reverberatory furnace. The amendments made in today's action do

and operators must limit THC emissions, which is a surrogate for all organic HAP's, to varying levels depending on the smelting furnace type. No THC limits apply to reverberatory, rotary, and electric furnaces not collocated with blast furnaces.

Owners and operators of collocated blast furnaces and reverberatory furnaces must comply with a THC limit of 20 parts per million by volume (ppmv) as propane at 4 percent carbon dioxide (CO_2) when both furnaces are operating. Less stringent limits apply when the reverberatory furnace is not operating. When the reverberatory furnace is not operating, new blast furnaces collocated with reverberatory furnaces must comply with a THC limit of 70 ppmv, and existing blast furnaces must comply with a THC limit of 360 ppmv. For the purpose of this rule, a collocated blast furnace and reverberatory furnace is defined as operation at the same site of a reverberatory furnace and a blast furnace with the volumetric flow rate discharged from the reverberatory furnaces being at least equal to that discharged from the blast furnaces.

The THC standard for a collocated blast furnace and reverberatory furnace is based on commingling the high-volume, high-temperature (approximately 1000 °C) reverberatory exhaust with the low-volume, low-temperature (approximately 100 °C) blast furnace exhaust to incinerate the organic HAP in the blast furnace exhaust. Organics are further reduced in a typical collocated blast furnace and reverberatory configuration since the reverberatory furnace processes the majority of the broken battery materials while the blast furnace processes reverberatory slag and only small amounts of broken batteries.

Owners and operators of new blast furnaces not collocated with a reverberatory furnace (as defined above) must comply with a THC limit of 70 ppmv. Existing blast furnaces not collocated with a reverberatory furnace must comply with a THC limit of 360 ppmv. The THC emissions from each blast furnace charging chute at all smelters with blast furnaces shall not exceed 0.20 kilograms per hour (kg/hr; 0.44 pounds per hour (lb/hr)).

Table 2 in the attached regulatory text summarizes the emission limits for smelting furnace process sources.

2. Process Fugitive Emission Sources

Owners and operators must comply with either of two process fugitive emission control options. Each process fugitive emission source must be controlled either by an enclosure-type hood that is ventilated to a control device or must be fully enclosed within a total enclosure that is ventilated to a control device. Lead compound emissions, as a surrogate for all metal HAP's, from each hood or building control device are limited to 2.0 mg/dscm (0.00087 gr/dscf).

Refining kettle enclosure hoods must have a minimum air velocity into all hood openings (i.e., face velocity) of 75 meters per minute (m/min; 250 feet per minute (fpm)), and the enclosure hoods over drying kiln transition pieces must have a minimum face velocity of 110 m/min (350 fpm). All other process fugitive emission sources (charging points, lead and slag taps, and agglomerating furnaces) with an enclosure hood must have a minimum face velocity of 90 m/min (300 fpm). If a ventilated building is used to control process fugitive sources, then it must be ventilated at such a rate as to maintain a lower than ambient pressure within the building, ensuring that a in-draft will exist at all doors and other openings.

Table 3 in the attached regulatory text summarizes the requirements for process fugitive emission sources.

3. Fugitive Dust Sources

Fugitive dust emissions must be controlled by the measures specified in a standard operating procedures (SOP) manual. The SOP must be developed by the owner or operator of each smelter and submitted to the Administrator for approval. The SOP must describe the measures that will be used to control fugitive dust emissions from plant roadways; the battery breaking area; the furnace, refining, and casting areas; and the materials storage and handling areas. Acceptable control measures include either a total enclosure of the fugitive dust source and ventilation of the enclosure to a control device, or a combination of partial enclosures, wet suppression, and pavement cleaning. Lead compound emissions, as a surrogate for all metal HAP's, from enclosure control devices must be limited to 2.0 mg/dscm (0.00087 gr/dscf).

4. Compliance Dates

Compliance for existing sources must be achieved no later than December 23, 1997, or upon startup for new or reconstructed sources.

5. Compliance Test Methods

Compliance with the emission limits for lead compounds shall be determined according to EPA Reference Method 12 (40 CFR part 60, appendix A). EPA Reference Method 9 is not required for determining compliance with the emission limits for lead compounds. Compliance with the THC emission limits shall be determined according to EPA Reference Method 25A (40 CFR part 60, appendix A). Concentrations of THC shall be reported in ppmv, as propane, corrected to 4 percent CO_2 to correct for dilution. Sampling point locations shall be determined according to EPA Reference Method 1, and stack gas conditions shall be determined, as appropriate, according to EPA Reference Methods 2, 3, 3B, and 4 (40 CFR part 60, appendix A).

6. Monitoring Requirements

The rule requires an initial lead compound emission test for all subject control devices to demonstrate compliance with the lead compound emission standards. In addition, the rule requires annual compliance testing for devices controlling process and process fugitive emission sources. All owners and operators must also prepare SOP manuals for the systematic inspection and maintenance of all baghouses, and install and operate bag leak detection systems. Where required, a single bagleak detector may be used to monitor a common stack serving multiple baghouses. Each manual shall also include provisions for the diagnosis of problems and a corrective action plan. Plans for corrective action must prescribe procedures to be followed whenever an alarm is triggered.

Compliance with the THC emission standards (except that for blast furnace charging) will require monitoring either afterburner or incinerator temperature or THC concentration. The THC emission limit includes a carbon dioxide correction factor which accounts for dilution (e.g., combining non-process streams, and tempering air). As such, the THC monitor may be placed anywhere down stream of any organic HAP control devices (e.g., after the baghouse). Only an initial compliance test is required for blast furnace charging.

7. Notification Requirements

The owner or operator will be required to comply with the notification requirements in the General Provisions to part 63 (40 CFR part 60, subpart A). In addition, owners and operators will be required to submit the fugitive dust control SOP and the baghouse SOP to the Administrator for review and approval.

8. Recordkeeping and Reporting Requirements

Owners and operators will be required to comply with the

ACTION: Direct final rule: Amendments to rule.

SUMMARY: This action amends the national emission standards for hazardous air pollutants (NESHAP) for new and existing secondary lead smelters. Changes to the NESHAP are being made to address comments received in petitions to reconsider sent to the EPA following promulgation of the final rule. These changes affect several aspects of the final rule including applicability of the THC limit for collocated blast and reverberatory furnaces, minimum baghouse standard operating procedure (SOP) requirements, and bag leak detection system specifications and requirements. Several minor changes are also being made to clarify the intent of the rule. The EPA is making these amendments as a direct final rule without prior proposal because the Agency views this as a noncontroversial amendment and anticipates no significant adverse comments.

The EPA is also proposing these amendments in the Proposed Rules Section of this **Federal Register**. If no significant adverse comments are received in response to this direct final rule, no further action is contemplated in relation to the proposal. If the EPA receives significant adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on the proposed rule. The EPA will not institute a second comment period on the proposal. Any parties interested in commenting on the amendments should do so at this time.

DATES: *Effective Date.* This action will be effective August 4, 1997 unless significant adverse comments on this action are received by July 14, 1997. If significant adverse comments are received, the EPA will withdraw this Direct Final rule and will publish timely notice of the withdrawal inthe **Federal Register**, and all public comments received will be addressed in a subsequent final rule.

Judicial Review. Under section 307(b)(1) of the Act, judicial review of a NESHAP is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this final rule. Under section 307(b)(2) of the Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

ADDRESSES: *Docket.* Docket No. A–92–43, containing information considered by the EPA in development of the promulgated standards, is available for public inspection and copying between 8:00 a.m. and 5:30 p.m., Monday through Friday except for Federal holidays, at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (MC–6102), 401 M Street, SW., Washington, DC 20460; telephone (202) 260–7548. The docket is located at the above address in Room M–1500, Waterside Mall (ground floor). A reasonable fee may be charged for copying.

Comments. Written comments should be submitted to: Docket A–92–43, U.S. EPA, Air & Radiation Docket & Information Center, 401 M. Street, S.W., Room 1500, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Mr. Kevin Cavender, Metals Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone (919) 541–2364.

SUPPLEMENTARY INFORMATION:

The information presented in this preamble is organized as follows:

I. Background
II. Summary
A. Summary of Promulgated Standards
B. Summary of Changes Made Since Promulgation
C. Summary of Environmental, Energy, Health, Cost, and Economic Impacts
III. Public Participation
IV. Significant Public Comments and Responses
A. Definition of Collocated Blast Furnace and Reverberatory Furnaces
B. Test Methods for Determining Hood Face and Doorway Air Velocities
C. Minimum Baghouse SOP Requirements
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V. Administrative Requirements
A. Docket
B. Executive Order 12866
C. Unfunded Mandates Act
D. Paperwork Reduction Act
E. Regulatory Flexibility Act
F. Submission to Congress and the General Accounting Office

I. Background

The NESHAP for secondary lead smelting (40 CFR part 63, subpart X) was proposed in the **Federal Register** on June 9, 1994 (59 FR 29750). The EPA received 31 letters commenting on the proposed rule and proposed area source listing. After considering fully the comments received, the EPA promulgated this NESHAP in the **Federal Register** on June 23, 1995 (60 FR 32587).

The final rule establishes emission limits for lead, as a surrogate for all metallic Hazardous Air Pollutants (HAP), from smelting furnaces, refining kettles, agglomerating furnaces, dryers, and fugitive dust sources at secondary lead smelters. The final rule also establishes emission limits for total hydrocarbons (THC), as a surrogate for HAP organics, from smelting furnaces. Work practice standards (i.e., minimum hood face velocities, and building enclosures) were specified for the capture and control of process fugitive sources including furnace charging equipment and tapping locations, refining kettles, driers, and agglomerating furnace vents and taps. The final rule also requires smelters to develop site specific Standard Operating Procedures (SOP) manuals for fugitive dust control and baghouse operation and maintenance. Minimum SOP requirements were specified in the rule.

Following publication of the final rule, the EPA received three petitions for reconsideration pursuant to section 307(d)(7)(B) of the act from secondary lead smelter owners and operators, and the Association of Battery Recyclers, an industry trade association that represents the majority of the secondary lead smelters in the United States.

The petitioners had subsantive objections to several technical requirements in the final rule that were not included in the proposal. The EPA has determined that several of the objections contained in the petitions, though not dealing with critical parts of the rule, are properly founded and that the rule should be revised. The EPA extended the compliance and SOP submittal dates by six months, in order to allow affected sources time to address the changes being made in this action. The extension was published in the **Federal Register** on December 12, 1996 (60 FR 65334). The EPA is making further amendments in this document.

II. Summary

A. Summary of Promulgated Standards

The promulgated rule, as amended, establishes standards to limit HAP emissions from smelting furnaces, refining kettles, agglomerating furnaces, dryers, and fugitive dust sources at both major source and area source secondary lead smelters. The promulgated rule does not apply to primary lead smelters, lead refiners, or lead remelters.

1. Process Emission Sources

Owners and operators of all smelting furnace types must limit lead compound emissions, which is a surrogate for all metal HAP, to no more than 2.0 milligrams per dry standard cubic meter (mg/dscm; 0.00087 grains per dry standard cubic foot (gr/dscf)). Owners

complete submittal as to each of the SIP elements for which these findings are made. In addition, EPA will not promulgate a FIP if the state makes the required SIP submittal and EPA takes final action to approve the submittal within two years of EPA's finding.

II. Final Action

A. Rule

Today, EPA is making a finding of failure to submit an attainment plan for the Medford-Ashland, Oregon, PM–10 nonattainment area. Specifically, EPA is making a finding that Oregon has not submitted a plan satisfying the requirement under section 189(a)(2)(A) of the Act. This section requires that each state submit a plan that includes certain provisions required under section 189(a)(1) within one year of the date of enactment of the Clean Air Act Amendments of 1990 (i.e., by November 15, 1991) for areas designated nonattainment for PM–10 under section 107(d)(4). Other provisions required under section 189(a)(1)(A) were due at a later date (i.e., provisions relating to new source review). See section 189(a)(2)(A).

B. Effective Date Under the Administrative Procedures Act

The Administrative Procedures Act (APA) applies to this rulemaking action. Under the APA, 5 U.S.C. 553(d)(3), agency rulemaking may take effect sooner than 30 days after the date of publication in the **Federal Register** if the agency has good cause to mandate an earlier effective date. Today's action concerns a SIP submission that is already overdue. On February 11, 1997, EPA notified the state that EPA was considering the action it is taking today. Consequently, the state has been on notice for some time that today's action was pending. In addition, today's action simply starts a "clock" that will not result in sanctions against the state for 18 months, and that the state may "turn off" through the submission of a complete SIP submittal. These reasons support establishing an effective date that is earlier than 30 days after the date of publication. Therefore, today's action will be effective June 13, 1997.

C. Notice-and-Comment Under the Administrative Procedures Act

This rule is a final agency action, but is not subject to the notice-and-comment requirements of the APA, 5 U.S.C. 553(b). EPA believes that, because of the limited time provided to make findings of failure to submit and findings of incompleteness regarding SIP submissions or elements of SIP submission requirements, Congress did not intend such findings to be subject to notice-and-comment rulemaking. However, to the extent such findings are subject to notice-and-comment rulemaking, EPA invokes the good cause exception pursuant to the APA, 5 U.S.C. 553(b)(3)(B). Notice-and-comment are unnecessary because no EPA judgment is involved in making a nonsubstantive finding of failure to submit elements of SIP submissions required by the Clean Air Act. Furthermore, providing notice-and-comment would be impracticable because of the limited time provided under the statute for making such determinations. Finally, notice-and-comment would be contrary to the public interest because it would divert agency resources from the critical substantive review of complete SIPs. See 58 FR 51270, 51272, n.17 (Oct. 1, 1993); 59 FR 39832, 39853 (Aug. 4, 1994).

III. Administrative Requirements

A. Executive Order 12866

The Office of Management and Budget (OMB) has exempted this regulatory action from Executive Order 12866 review.

B. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to state, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted on by the rule.

EPA has determined that today's action is not a Federal mandate. The various CAA provisions discussed in this rule require the state to submit SIPs. This rule merely provides a finding that the state did not meet those requirements. This rule does not, by itself, require any particular action by the state, local, or tribal government; or by the private sector.

For the same reasons, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments.

C. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA), 5 U.S.C. 600 *et seq.*, EPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities of any rule subject to the notice-and-comment rulemaking requirements. Because this action is exempt from such requirements as described above, it is not subject to the RFA.

D. Submission to Congress and the General Accounting Office

Under 5 U.S.C. section 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. section 804(2).

E. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 12, 1997. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See CAA section 307(b)(2), 42 U.S.C. 7607(b)(2))

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Particulate matter.

Dated: May 8, 1997.

Chuck Clarke,

Regional Administrator.

[FR Doc. 97–15566 Filed 6–12–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5839–2]

RIN 2060–AH07

National Emission Standards for Hazardous Air Pollutants From Secondary Lead Smelting

AGENCY: Environmental Protection Agency (EPA).

$$D_{Aero} = D_{Physical}\sqrt{\frac{\rho_{Particle}}{\rho_o}\frac{CCF_{Physical}}{CCF_{Aero}}} \qquad \text{(Eq. 319-5)}$$

Where:

ρ_O = unit density of 1 g/cm³.
$\rho_{Particle}$ = the density of the particle, 0.89 g/cm³ for oleic acid.
$CCF_{Physical}$ = the Cunningham Correction Factor at $D_{Physical}$.
CCF_{Aero} = the Cunningham Correction Factor at D^{Aero}.

12.4 Presentation of Results. For a given arrestor, results will be presented for:

- Triplicate arrestor tests with the liquid-phase challenge aerosol,
- Triplicate arrestor tests with the solid-phase challenge aerosol,
- Triplicate 100 percent penetration tests with the liquid-phase challenge aerosol,
- Triplicate 100 percent penetration tests with the solid-phase challenge aerosol, and
- One 0 percent filter test (using either the liquid-phase or solid-phase aerosol and performed at least monthly).

12.4.1 Results for the paint arrestor test must be presented in both graphical and tabular form. The X-axis of the graph will be a logarithmic scale of aerodynamic diameter from 0.1 to 100 μm. The Y-axis will be efficiency (%) on a linear scale from 0 to 100. Plots for each individual run and a plot of the average of triplicate solid-phase and of the average triplicate liquid-phase tests must be prepared. All plots are to be based on point-to-point plotting (i.e., no curve fitting is to be used). The data are to be plotted based on the geometric mean diameter of each of the OPC's sizing channels.

12.4.2 Tabulated data from each test must be provided. The data must include the upper and lower diameter bound and geometric mean diameter of each of the OPC sizing channels, the background particle counts for each channel for each sample, the upstream particle counts for each channel for each sample, the downstream particle counts for each channel for each sample, the 100 percent penetration values computed for each channel, and the 0 percent penetration values computed for each channel.

13.0 Pollution Prevention.

13.1 The quantities of materials to be aerosolized should be prepared in accord with the amount needed for the current tests so as to prevent wasteful excess.

14.0 Waste Management.

14.1 Paint arrestors may be returned to originator, if requested, or disposed of with regular laboratory waste.

15.0 References.

1. Hanley, J.T., D.D. Smith and L. Cox. "Fractional Penetration of Paint Overspray Arrestors, Draft Final Report," EPA Cooperative Agreement CR–817083–01–0, January 1994.

2. Hanley, J.T., D.D. Smith, and D.S. Ensor. "Define a Fractional Efficiency Test Method that is Compatible with Particulate Removal Air Cleaners Used in General Ventilation," Final Report, 671–RP, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., December 1993.

3. "Project Work and Quality Assurance Plan: Fractional Penetration of Paint Overspray Arrestors, Category II," EPA Cooperative Agreement No. CR–817083, July 1994.

[FR Doc. 98–6999 Filed 3–26–98; 8:45 am]
BILLING CODE 6560–50–P

11.1.2.1 Record the date and time upon beginning this section.

11.1.2.2 Optical Particle Counter.

11.1.2.2.1 General: Operate the OPC per the manufacturer's instructions allowing a minimum of 20 minutes warm up before making any measurements.

11.1.2.2.2 Overload: The OPC will yield inaccurate data if the aerosol concentration it is attempting to measure exceeds its operating limit. To ensure reliable measurements, the maximum aerosol concentration will not exceed 10 percent of the manufacturer's claimed upper concentration limit corresponding to a 10 percent count error. If this value is exceeded, reduce the aerosol concentration until the acceptable conditions are met.

11.1.2.2.3 Zero Count: Connect a HEPA capsule to the inlet of the OPC and obtain printouts for three samples (each a minimum of 1-minute each). Record maximum cumulative zero count. If the count rate exceeds 50 counts per minute, the OPC requires servicing before continuing.

11.1.2.2.4 PSL Check of OPC Calibration: Confirm the calibration of the OPC by sampling a known size PSL aerosol. Aerosolize the PSL using an appropriate nebulizer. Record whether the peak count is observed in the proper channel. If the peak is not seen in the appropriate channel, have the OPC recalibrated.

11.1.2.3 Test Conditions:

11.1.2.3.1 Airflow: The test airflow corresponds to a nominal face velocity of 120 FPM through the arrestor. For arrestors having nominal 20 in. x 20 in. face dimensions, this measurement corresponds to an airflow of 333 cfm. For arrestors having nominal face dimensions of 24 in. x 24 in., this measurement corresponds to an airflow of 480 cfm.

11.1.2.3.2 Temperature and Relative Humidity: The temperature and relative humidity of the challenge air stream will be measured to within an accuracy of +/−2°F and +/−10 percent RH. To protect the probe from fouling, it may be removed during periods of aerosol generation.

11.1.2.3.3 Barometric Pressure: Use a mercury barometer. Record the atmospheric pressure.

11.1.2.4 Upstream and Downstream Background Counts.

11.1.2.4.1 With the arrestor installed in the test duct and the airflow set at the proper value, turn on the data acquisition computer and bring up the data acquisition program.

11.1.2.4.2 Set the OPC settings for the appropriate test sample duration with output for both printer and computer data collection.

11.1.2.4.3 Obtain one set of upstream-downstream background measurements.

11.1.2.4.4 After obtaining the upstream-downstream measurements, stop data acquisition.

11.1.2.5 Efficiency Measurements:

11.1.2.5.1 Record the arrestor pressure drop.

11.1.2.5.2 Turn on the Aerosol Generator. Begin aerosol generation and record the operating parameters.

11.1.2.5.3 Monitor the particle counts. Allow a minimum of 5 minutes for the generator to stabilize.

11.1.2.5.4 Confirm that the total particle count does not exceed the predetermined upper limit. Adjust generator as needed.

11.1.2.5.5 Confirm that a minimum of 50 particle counts are measured in the upstream sample in each of the OPC channels per sample. (A minimum of 50 counts per channel per sample will yield the required minimum 500 counts per channel total for the 10 upstream samples as specified in Table 319–1.) Adjust generator or sample time as needed.

11.1.2.5.6 If you are unable to obtain a stable concentration within the concentration limit and with the 50 count minimum per channel, adjust the aerosol generator.

11.1.2.5.7 When the counts are stable, perform repeated upstream-downstream sampling until 10 upstream-downstream measurements are obtained.

11.1.2.5.8 After collection of the 10 upstream-downstream samples, stop data acquisition and allow 2 more minutes for final purging of generator.

11.1.2.5.9 Obtain one additional set of upstream-downstream background samples.

11.1.2.5.10 After obtaining the upstream-downstream background samples, stop data acquisition.

11.1.2.5.11 Record the arrestor pressure drop.

11.1.2.5.12 Turn off blower.

11.1.2.5.13 Remove the paint arrestor assembly from the test duct. Note any signs of physical deterioration.

11.1.2.5.14 Remove the arrestor from the frame and place the arrestor in an appropriate storage bag.

11.2 Control Test: 100 Percent Penetration Test. A 100 percent penetration test must be performed immediately before each individual paint arrestor test using the same challenge aerosol substance (i.e., oleic acid or KCl) as to be used in the arrestor test. These tests are performed with no arrestor installed in the test housing. This test is a relatively stringent test of the adequacy of the overall duct, sampling, measurement, and aerosol generation system. The test is performed as a normal penetration test except the paint arrestor is not used. A perfect system would yield a measured penetration of 1 at all particle sizes. Deviations from 1 can occur due to particle losses in the duct, differences in the degree of aerosol uniformity (i.e., mixing) at the upstream and downstream probes, and differences in particle transport efficiency in the upstream and downstream sampling lines.

11.3 Control Test: 0 Percent Penetration. One 0 percent penetration test must be performed at least monthly during testing. The test is performed by using a HEPA filter rather than a paint arrestor. This test assesses the adequacy of the instrument response time and sample line lag.

12.0 Data Analysis and Calculations.

12.1 Analysis. The analytical procedures for the fractional penetration and flow velocity measurements are described in Section 11. Note that the primary measurements, those of the upstream and downstream aerosol concentrations, are performed with the OPC which acquires the sample and analyzes it in real time. Because all the test data are collected in real time, there are no analytical procedures performed subsequent to the actual test, only data analysis.

12.2 Calculations.

12.2.1 Penetration.

Nomenclature

U = Upstream particle count
D = Downstream particle count
U_b = Upstream background count
D_b = Downstream background count
P_{100} = 100 percent penetration value determined immediately prior to the arrestor test computed for each channel as:

$$P_{100} = \frac{\left(\overline{D} - \overline{D_b}\right)}{\left(\overline{U} - \overline{U_b}\right)}$$

P = Penetration of the arrestor corrected for P_{100}
ó = Sample standard deviation
CV = Coefficient of variation = ó/mean
E = Efficiency.

Overbar denotes arithmetic mean of quantity.

Analysis of each test involves the following quantities:

- P_{100} value for each sizing channel from the 100 percent penetration control test,
- 2 upstream background values,
- 2 downstream background values,
- 10 upstream values with aerosol generator on, and
- 10 downstream values with aerosol generator on.

Using the values associated with each sizing channel, the penetration associated with each particle-sizing channel is calculated as:

$$P = \left\{\frac{\left(\overline{D} - \overline{D}_b\right)}{\left(\overline{U} - \overline{U}_b\right)}\right\} / P_{100} \qquad \text{(Eq. 319-3)}$$

$$E = 1 - P \qquad \text{(Eq. 319-4)}$$

Most often, the background levels are small compared to the values when the aerosol generator is on.

12.3 The relationship between the physical diameter ($D_{Physical}$) as measured by the OPC to the aerodynamic diameter (D_{Aero}) is given by:

TABLE 319–2.—PROPERTIES OF THE TEST AND CALIBRATION AEROSOLS

	Refractive index	Density, g/cm^3	Shape
Oleic Acid (liquid-phase challenge aerosol)	1.46 nonabsorbing	0.89	Spherical.
KCl (solid-phase challenge aerosol)	1.49	1.98	Cubic or agglomerated cubes.
PSL (calibration aerosol)	1.59 nonabsorbing	1.05	Spherical.

8.0 Sample Collection, Preservation, and Storage.

8.1 In this test, all sampling occurs in real-time, thus no samples are collected that require preservation or storage during the test. The paint arrestors are shipped and stored to avoid structural damage or soiling. Each arrestor may be shipped in its original box from the manufacturer or similar cardboard box. Arrestors are stored at the test site in a location that keeps them clean and dry. Each arrestor is clearly labeled for tracking purposes.

9.0 Quality Control.

9.1 Table 319–1 lists the QC control limits.

9.2 The standard deviation (σ) of the penetration (P) for a given test at each of the 15 OPC sizing channels is computed from the coefficient of variation (CV, the standard deviation divided by the mean) of the upstream and downstream measurements as:

$$\sigma_P = P\sqrt{\left(CV^2_{upstream} + CV^2_{downstream}\right)} \qquad \text{(Eq. 319-1)}$$

For a properly operating system, the standard deviation of the penetration is < 0.10 at particle diameters from 0.3 to 3 μm and less than 0.30 at diameters > 3 μm.

9.3 Data Quality Objectives (DQO).

9.3.1 Fractional Penetration. From the triplicate tests of each paint arrestor model, the standard deviation for the penetration measurements at each particle size (i.e., for each sizing channel of the OPC) is computed as:

$$s = \left[\sum\left(P_i - \overline{P}\right)^2/(n-1)\right]^{\frac{1}{2}} \qquad \text{(Eq. 319-2)}$$

where P_i represents an individual penetration measurement, and P the average of the 3 (n = 3) individual measurements.

9.3.2 Bias of the fractional penetration values is determined from triplicate no-filter and HEPA filter tests. These tests determine the measurement bias at 100 percent penetration and 0 percent penetration, respectively.

9.3.3 PSL-Equivalent Light Scattering Diameter. The precision and bias of the OPC sizing determination are based on sampling a known diameter of PSL and noting whether the particle counts peak in the correct channel of the OPC. This is a pass/fail measurement with no calculations involved.

9.3.4 Airflow. The precision of the measurement must be within 5 percent of the set point.

10.0 Calibration and Standardization.

10.1 Optical Particle Counter. The OPC must have an up-to-date factory calibration. Check the OPC zero at the beginning and end of each test by sampling HEPA-filtered air. Verify the sizing accuracy on a daily basis (for days when tests are performed) with 1-size PSL spheres.

10.2 Airflow Measurement. Airflow measurement devices must have an accuracy of 5 percent or better. Manometers used in conjunction with the orifice plate must be inspected prior to use for proper level, zero, and mechanical integrity. Tubing connections to the manometer must be free from kinks and have secure connections.

10.3 Pressure Drop. Measure pressure drop across the paint arrestor with an inclined manometer readable to within 0.01 in. H_2O. Prior to use, the level and zero of the manometer, and all tubing connections, must be inspected and adjusted as needed.

11.0 Procedure.

11.1 Filtration Efficiency. For both the oleic acid and KCl challenges, this procedure is performed in triplicate using a new arrestor for each test.

11.1.1 General Information and Test Duct Preparation

11.1.1.1 Use the "Test Run Sheet" form (Figure 319–2) to record the test information.

Run Sheet

Part 1. General Information

Date and Time: _____

Test Operator: _____

Test #: _____

Paint Arrestor:

Brand/Model _____

Arrestor Assigned ID # _____

Condition of arrestor (i.e., is there any damage? Must be new condition to proceed):

_____

Manometer zero and level confirmed?

_____

Part 2. Clean Efficiency Test

Date and Time: _____

Optical Particle Counter:

20 min. warm up _____

Zero count (< 50 counts/min) _____

Daily PSL check _____

PSL Diam: _____ μm

File name for OPC data: _____

Test Conditions:

Air Flow: _____

Temp & RH: Temp _____ °F RH _____ %

Atm. Pressure: _____in. Hg (From mercury barometer)

Aerosol Generator: (record all operating parameters)

_____

_____

_____

_____

Test Aerosol:

(Oleic acid or KCl) _____

Arrestor:

Pressure drop: at start _____ in. H_2O

at end _____ in. H_2O

Condition of arrestor at end of test (note any physical deterioration):

_____

_____

Figure 319–2. Test Run Sheet

Other report formats which contain the same information are acceptable.

11.1.1.2 Record the date, time, test operator, Test #, paint arrestor brand/model and its assigned ID number. For tests with no arrestor, record none.

11.1.1.3 Ensure that the arrestor is undamaged and is in "new" condition.

11.1.1.4 Mount the arrestor in the appropriate frame. Inspect for any airflow leak paths.

11.1.1.5 Install frame-mounted arrestor in the test duct. Examine the installed arrestor to verify that it is sealed in the duct. For tests with no arrestor, install the empty frame.

11.1.1.6 Visually confirm the manometer zero and level. Adjust as needed.

11.1.2 Clean Efficiency Test.

6.1.1 The test section, paint spray section, and attached transitions are constructed of stainless and galvanized steel. The upstream and downstream ducting is 20 cm diameter polyvinyl chloride (PVC). The upstream transition provides a 7° angle of expansion to provide a uniform air flow distribution to the paint arrestors. Aerosol concentration is measured upstream and downstream of the test section to obtain the challenge and penetrating aerosol concentrations, respectively. Because the downstream ducting runs back under the test section, the challenge and penetrating aerosol taps are located physically near each other, thereby facilitating aerosol sampling and reducing sample-line length. The inlet nozzles of the upstream and downstream aerosol probes are designed to yield isokinetic sampling conditions.

6.1.2 The configuration and dimensions of the test duct can deviate from those of Figure 319–1 provided that the following key elements are maintained: the test duct must meet the criteria specified in Table 319–1; the inlet air is HEPA filtered; the blower is on the upstream side of the duct thereby creating a positive pressure in the duct relative to the surrounding room; the challenge air has a temperature between 50° and 100°F and a relative humidity of less than 65 percent; the angle of the upstream transition (if used) to the paint arrestor must not exceed 7°; the angle of the downstream transition (if used) from the paint arrestor must not exceed 30°; the test duct must provide a means for mixing the challenge aerosol with the upstream flow (in lieu of any mixing device, a duct length of 15 duct diameters fulfills this requirement); the test duct must provide a means for mixing any penetrating aerosol with the downstream flow (in lieu of any mixing device, a duct length of 15 duct diameters fulfills this requirement); the test section must provide a secure and leak-free mounting for single and multiple stage arrestors; and the test duct may utilize a 180° bend in the downstream duct.

TABLE 319–1.—QC CONTROL LIMITS

	Frequency and description	Control limits
OPC zero count	Each Test. OPC samples HEPA-filtered air	<50 counts per minute.
OPC sizing accuracy check	Daily. Sample aerosolized PSL spheres	Peak of distribution should be in correct OPC channel.
Minimum counts per channel for challenge aerosol.	Each Test	Minimum total of 500 particle counts per channel.
Maximum particle concentration	Each Test. Needed to ensure OPC is not overloaded.	<10% of manufacturer's claimed upper limit corresponding to a 10% count error.
Standard Deviation of Penetration	Computed for each test based on the CV of the upstream and downstream counts.	<0.10 for 0.3 to 3 μm diameter. <0.30 for >3 μm diameter.
0% Penetration	Monthly	<0.01.
100% Penetration—KCl	Triplicate tests performed immediately before, during, or after triplicate arrestor tests.	0.3 to 1 μm: 0.90 to 1.10. 1 to 3 μm: 0.75 to 1.25. 3 to 10 μm: 0.50 to 1.50.
100% Penetration—Oleic Acid	Triplicate tests performed immediately before, during, or after triplicate arrestor tests.	0.3 to 1 μm: 0.90 to 1.10. 1 to 3 μm: 0.75 to 1.25. 3 to 10 μm: 0.50 to 1.50.

6.2 Aerosol Generator. The aerosol generator is used to produce a stable aerosol covering the particle size range from 0.3 to 10 μm diameter. The generator used in the development of this method consists of an air atomizing nozzle positioned at the top of a 0.30–m (12-in.) diameter, 1.3–m (51-in.) tall, acrylic, transparent, spray tower. This tower allows larger sized particles, which would otherwise foul the test duct and sample lines, to fall out of the aerosol. It also adds drying air to ensure that the KCl droplets dry to solid salt particles. After generation, the aerosol passes through an aerosol neutralizer (Kr85 radioactive source) to neutralize any electrostatic charge on the aerosol (electrostatic charge is an unavoidable consequence of most aerosol generation methods). To improve the mixing of the aerosol with the air stream, the aerosol is injected counter to the airflow. Generators of other designs may be used, but they must produce a stable aerosol concentration over the 0.3 to 10 μm diameter size range; provide a means of ensuring the complete drying of the KCl aerosol; and utilize a charge neutralizer to neutralize any electrostatic charge on the aerosol. The resultant challenge aerosol must meet the minimum count per channel and maximum concentration criteria of Table 319–1.

6.3 Installation of Paint Arrestor. The paint arrestor is to be installed in the test duct in a manner that precludes air bypassing the arrestor. Since arrestor media are often sold unmounted, a mounting frame may be used to provide back support for the media in addition to sealing it into the duct. The mounting frame for 20 in. x 20 in. arrestors will have minimum open internal dimensions of 18 in. square. Mounting frames for 24 in. x 24 in. arrestors will have minimum open internal dimensions of 22 in. square. The open internal dimensions of the mounting frame shall not be less than 75 percent of the approach duct dimensions.

6.4 Optical Particle Counter. The upstream and downstream aerosol concentrations are measured with a high-resolution optical particle counter (OPC). To ensure comparability of test results, the OPC shall utilize an optical design based on wide-angle light scattering and provided a minimum of 12 contiguous particle sizing channels from 0.3 to 10μm diameter (based on response to PSL) where, for each channel, the ratio of the diameter corresponding to the upper channel bound to the lower channel bound must not exceed 1.5.

6.5 Aerosol Sampling System. The upstream and downstream sample lines must be made of rigid electrically-grounded metallic tubing having a smooth inside surface, and they must be rigidly secured to prevent movement during testing. The upstream and downstream sample lines are to be nominally identical in geometry. The use of a short length (100 mm maximum) of straight flexible tubing to make the final connection to the OPC is acceptable. The inlet nozzles of the upstream and downstream probes must be sharp-edged and of appropriate entrance diameter to maintain isokinetic sampling within 20 percent of the air velocity.

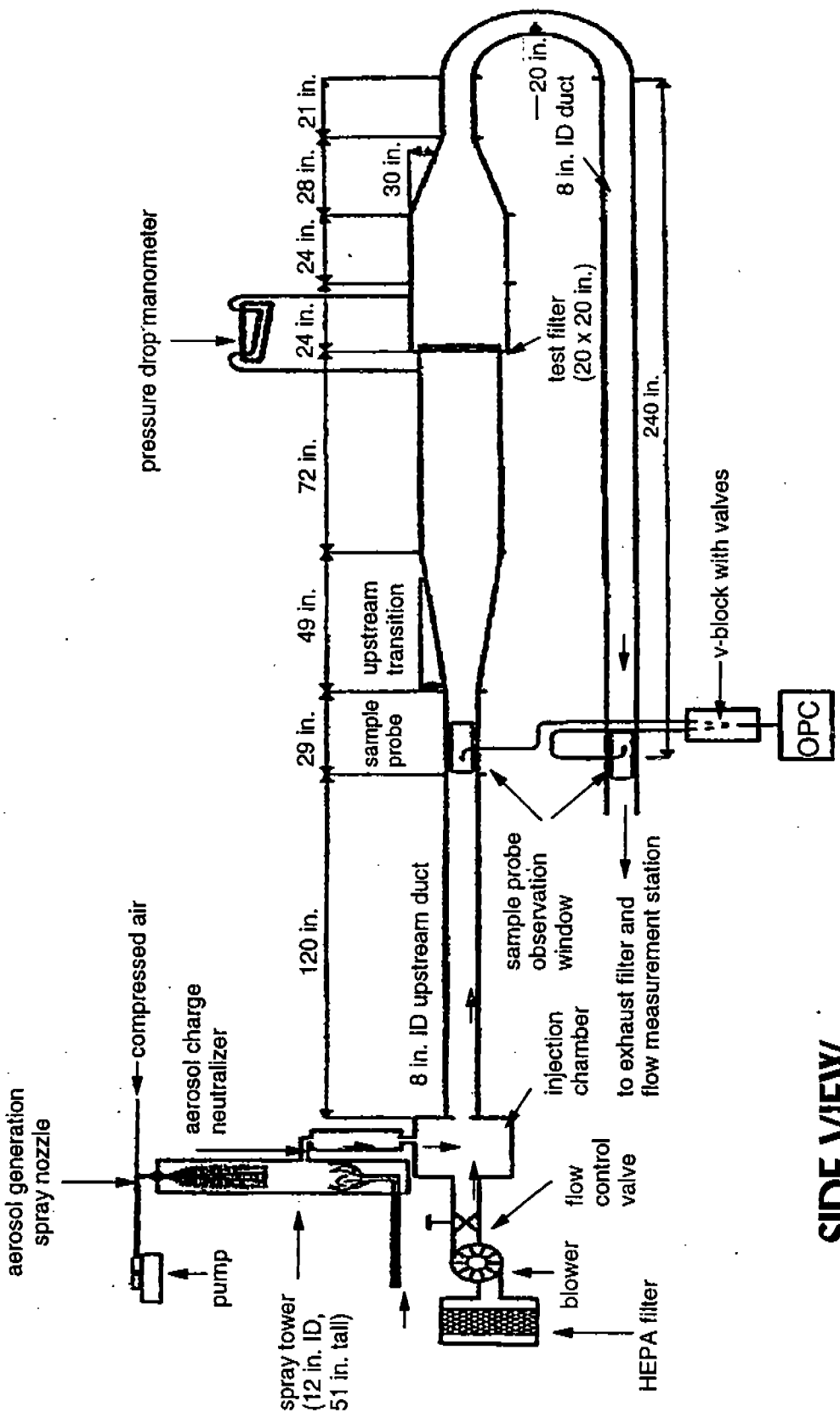
6.5.1 The sampling system may be designed to acquire the upstream and downstream samples using (a) sequential upstream-downstream sampling with a single OPC, (b) simultaneous upstream and downstream sampling with two OPC's, or (c) sequential upstream-downstream sampling with two OPC's.

6.5.2 When two particle counters are used to acquire the upstream and downstream counts, they must be closely matched in flowrate and optical design.

6.6 Airflow Monitor. The volumetric airflow through the system shall be measured with a calibrated orifice plate, flow nozzle, or laminar flow element. The measurement device must have an accuracy of 5 percent or better.

7.0 Reagents and Standards.

7.1 The liquid test aerosol is reagent grade, 98 percent pure, oleic acid (Table 319–2). The solid test aerosol is KCl aerosolized from a solution of KCl in water. In addition to the test aerosol, a calibration aerosol of monodisperse polystyrene latex (PSL) spheres is used to verify the calibration of the OPC.



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Figure 319-1. Schematic illustration of the fractional efficiency test rig.

to the system or subsystem shall be assumed to result in an efficiency of at least that of the original system without the requirement for additional testing. (For example, if the final stage of a three-stage paint arrestor system has been tested by itself, then the addition of the other two stages shall be assumed to maintain, as a minimum, the filtration efficiency provided by the final stage alone. Thus, in this example, if the final stage has been shown to meet the filtration requirements of Table 1 of § 63.745 of subpart GG, then the final stage in combination with any additional paint arrestor stages also passes the filtration requirements.)

2.0 Summary of Method.

2.1 This method applies to the determination of the fractional (i.e., particle-size dependent) aerosol penetration of several types of paint arrestors. Fractional penetration is computed from aerosol concentrations measured upstream and downstream of an arrestor installed in a laboratory test rig. The aerosol concentrations upstream and downstream of the arrestors are measured with an aerosol analyzer that simultaneously counts and sizes the particles in the aerosol stream. The aerosol analyzer covers the particle diameter size range from 0.3 to 10 μm in a minimum of 12 contiguous sizing channels. Each sizing channel covers a narrow range of particle diameters. For example, Channel 1 may cover from 0.3 to 0.4 μm, Channel 2 from 0.4 to 0.5 μm, * * * By taking the ratio of the downstream to upstream counts on a channel by channel basis, the penetration is computed for each of the sizing channels.

2.2 The upstream and downstream aerosol measurements are made while injecting the test aerosol into the air stream upstream of the arrestor (ambient aerosol is removed with HEPA filters on the inlet of the test rig). This test aerosol spans the particle size range from 0.3 to 10 μm and provides sufficient upstream concentration in each of the optical particle counter (OPC) sizing channels to allow accurate calculation of penetration, down to penetrations of approximately 0.01 (i.e., 1 percent penetration; 99 percent efficiency). Results are presented as a graph and a data table showing the aerodynamic particle diameter and the corresponding fractional efficiency.

3.0 Definitions.

Aerodynamic Diameter—diameter of a unit density sphere having the same aerodynamic properties as the particle in question.

Efficiency is defined as equal to 1—Penetration.

Optical Particle Counter (OPC)—an instrument that counts particles by size using light scattering. An OPC gives particle diameters based on size, index of refraction, and shape.

Penetration—the fraction of the aerosol that penetrates the filter at a given particle diameter. Penetration equals the downstream concentration divided by the upstream concentration.

4.0 Interferences.

4.1 The influence of the known interferences (particle losses) are negated by correction of the data using blanks.

5.0 Safety.

5.1 There are no specific safety precautions for this method above those of good laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

6.0 Equipment and Supplies.

6.1 Test Facility. A schematic diagram of a test duct used in the development of the method is shown in Figure 319–1.

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Elevated-temperature Skydrol-resistant commercial primer—A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150°F for 1,000 hours.

Epoxy polyamide topcoat—A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

Fire-resistant (interior) coating—For civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts subject to the flammability requirements of MIL–STD–1630A and MIL–A–87721. For space applications, these coatings are used on parts subject to the flammability requirements of SE–R–0006 and SSP 30233.

Flexible primer—A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

Flight test coating—A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

Fuel tank adhesive—An adhesive used to bond components exposed to fuel and that must be compatible with fuel tank coatings.

Fuel tank coating—A coating applied to fuel tank components to inhibit corrosion and/or bacterial growth and to assure sealant adhesion in extreme environmental conditions.

High temperature coating—A coating designed to withstand temperatures of more than 350 °F.

Insulation covering—Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

Intermediate release coating—A thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

Lacquer—A clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

Metalized epoxy coating—A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

Mold release—A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

Nonstructural adhesive—An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

Optical anti-reflection coating—A coating with a low reflectance in the infrared and visible wavelength ranges, which is used for anti-reflection on or near optical and laser hardware.

Part marking coating—Coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

Pretreatment coating—An organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

Rain erosion-resistant coating—A coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

Rocket motor bonding adhesive—An adhesive used in rocket motor bonding applications.

Rocket motor nozzle coating—A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

Rubber-based adhesive—Quick setting contact cements that provide a strong, yet flexible, bond between two mating surfaces that may be of dissimilar materials.

Scale inhibitor—A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

Screen print ink—Inks used in screen printing processes during fabrication of decorative laminates and decals.

Seal coat maskant—An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

Sealant—A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

Silicone insulation material—Insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

Solid film lubricant—A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

Specialized function coatings—Coatings that fulfill extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

Structural autoclavable adhesive—An adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

Structural nonautoclavable adhesive—An adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or for other critical functions, such as nonstructural bonding in the proximity of engines.

Temporary protective coating—A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

Thermal control coating—Coatings formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

Touch-up and Repair Coating—A coating used to cover minor coating imperfections appearing after the main coating operation.

Wet fastener installation coating—A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

Wing coating—A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

18. Appendix A to Part 63 is amended by adding method 319 in numerical order to read as follows:

Appendix A to Part 63—Test Methods

* * * * *

Method 319: Determination of Filtration Efficiency for Paint Overspray Arrestors

1.0 Scope and Application.

1.1 This method applies to the determination of the initial, particle size dependent, filtration efficiency for paint arrestors over the particle diameter range from 0.3 to 10 μm. The method applies to single and multiple stage paint arrestors or paint arrestor media. The method is applicable to efficiency determinations from 0 to 99 percent. Two test aerosols are used—one liquid phase and one solid phase. Oleic acid, a low-volatility liquid (CAS Number 112–80–1), is used to simulate the behavior of wet paint overspray. The solid-phase aerosol is potassium chloride salt (KCl, CAS Number 7447–40–7) and is used to simulate the behavior of a dry overspray. The method is limited to determination of the initial, clean filtration efficiency of the arrestor. Changes in efficiency (either increase or decrease) due to the accumulation of paint overspray on and within the arrestor are not evaluated.

1.2 Efficiency is defined as 1—Penetration (e.g., 70 percent efficiency is equal to 0.30 penetration). Penetration is based on the ratio of the downstream particle concentration to the upstream concentration. It is often more useful, from a mathematical or statistical point of view, to discuss the upstream and downstream counts in terms of penetration rather than the derived efficiency value. Thus, this document uses both penetration and efficiency as appropriate.

1.3 For a paint arrestor system or subsystem which has been tested by this method, adding additional filtration de[illegible]

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG—Continued

Reference	Applies to affected sources in subpart GG	Comment
63.10(d)(1)–(2)	Yes	
63.10(d)(3)	No	The standards in subpart GG do not include opacity standards.
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	
63.(10)(e)(1)	No	
63.10(e)(2)(i)	No	
63.10(e)(2)(ii)	No	The standards in subpart GG do not include opacity standards.
63.10(e)(3)	No	
63.10(e)(4)	No	The standards in subpart GG do not include opacity standards.
63.10(f)	Yes	
63.11	Yes	
63.12	Yes	
63.13	Yes	
63.14	Yes	
63.15	Yes	

17. Appendix A of subpart GG is added to read as follows:

Appendix A to Subpart GG of Part 63—Specialty Coating Definitions

Ablative coating—A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

Adhesion promoter—A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

Adhesive bonding primer—A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

Aerosol coating—A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

Antichafe coating—A coating applied to areas of moving aerospace components that may rub during normal operations or installation.

Bearing coating—A coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

Bonding maskant—A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

Caulking and smoothing compounds—Semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

Chemical agent-resistant coating (CARC)—An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

Clear coating—A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

Commercial exterior aerodynamic structure primer—A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

Commercial interior adhesive—Materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.

Compatible substrate primer—Includes two categories: compatible epoxy primer and adhesive primer. *Compatible epoxy primer* is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. *Adhesive primer* is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

Corrosion prevention system—A coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

Critical use and line sealer maskant—A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e. line sealer) are also included in this category.

Cryogenic flexible primer—A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (−275°F and below).

Cryoprotective coating—A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

Cyanoacrylate adhesive—A fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

Dry lubricative material—A coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

Electric or radiation-effect coating—A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are exempt.

Electrostatic discharge and electromagnetic interference (EMI) coating—A coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG—Continued

Reference	Applies to affected sources in subpart GG	Comment
63.6(i)(5)–(12)	Yes	
63.6(i)(13)	Yes	
63.6(i)(14)	Yes	
63.6(i)(15)	No	Reserved.
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)(i)–(vi)	Yes	
63.7(a)(2)(vii)–(viii)	No	Reserved.
63.7(a)(2)(ix)	Yes	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)	Yes	
63.7(f)	Yes	
63.7(g)(1)	Yes	
63.7(g)(2)	No	Reserved.
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)–(2)	Yes	
63.8(a)(3)	No	Reserved.
63.8(a)(4)	Yes	
63.8(b)	Yes	
63.8(c)	Yes	
63.8(d)	No	
63.8(e)(1)–(4)	Yes	
63.8(e)(5)(i)	Yes	
63.8(e)(5)(ii)	No	The standards in subpart GG do not include opacity standards.
63.8(f)(1)	Yes	
63.8(f)(2)(i)–(vii)	Yes	
63.8(f)(2)(viii)	No	The standards in subpart GG do not include opacity standards.
63.8(f)(2)(ix)	Yes	
63.8(f)(3)–(6)	Yes	
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	Yes	§63.753(a)(1) requires submittal of the initial notification at least 1 year prior to the compliance date; §63.753(a)(2) allows a title V or part 70 permit application to be substituted for the initial notification in certain circumstances.
63.9(b)(3)	Yes	
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	No	The standards in subpart GG do not include opacity standards.
63.9(g)(1)	No	
63.9(g)(2)	No	The standards in subpart GG do not include opacity standards.
63.9(g)(3)	No	
63.9(h)(1)–(3)	Yes	§63.753(a)(1) also specifies additional information to be included in the notification of compliance status.
63.9(h)(4)	No	Reserved.
63.9(h)(5)–(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)	Yes	
63.10(c)(1)	No	
63.10(c)(2)–(4)	No	Reserved.
63.10(c)(5)–(8)	No	
63.10(c)(9)	No	Reserved.
63.10(c)(10)–(13)	No	
63.10(c)(14)	No	§63.8(d) does not apply to this subpart.
63.10(c)(15)	No	

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG

Reference	Applies to affected sources in subpart GG	Comment
63.1(a)(1)	Yes	
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	Reserved.
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	
63.1(a)(9)	No	Reserved.
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	Yes	
63.1(b)(2)	Yes	
63.1(b)(3)	Yes	
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart GG does not apply to area sources.
63.1(c)(3)	No	Reserved.
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Reserved.
63.1(e)	Yes	
63.2	Yes	
63.3	Yes	
63.4(a)(1)	Yes	
63.4(a)(2)	Yes	
63.4(a)(3)	Yes	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Reserved.
63.5(d)(1)(i)	Yes	
63.5(d)(1)(ii)(A)–(H)	Yes	
63.5(d)(1)(ii)(I)	No	Reserved.
63.5(d)(1)(ii)(J)	Yes	
63.5(d)(1)(iii)	Yes	
63.5(d)(2)–(4)	Yes	
63.5(e)	Yes	
63.5(f)	Yes	
63.6(a)	Yes	
63.6(b)(1)–(5)	Yes	§ 63.749(a) specifies compliance dates for new sources.
63.6(b)(6)	No	Reserved.
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.
63.6(c)(3)–(4)	No	Reserved.
63.6(c)(5)	Yes	
63.6(d)	No	Reserved.
63.6(e)	Yes	63.743(b) includes additional provisions for the operation and maintenance plan.
63.6(f)	Yes	
63.6(g)	Yes	
63.6(h)	No	The standards in subpart GG do not include opacity standards.
63.6(i)(1)–(3)	Yes	
63.6(i)(4)(i)(A)	Yes	
63.6(i)(4)(i)(B)	No	§ 63.743(a)(4) specifies that requests for extension of compliance must be submitted no later than 120 days before an affected source's compliance date.
63.6(i)(4)(ii)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.

$$G_a = \frac{\sum_{i=1}^{n} (VOC)_{mi} V_{mi}}{M_{lwes}} \quad \text{Eq. 23}$$

* * * * *

(o) *Inorganic HAP emissions—dry particulate filter certification requirements.* Dry particulate filters used to comply with § 63.745(g)(2) or § 63.746(b)(4) must be certified by the filter manufacturer or distributor, paint/depainting booth supplier, and/or the facility owner or operator using method 319 in appendix A of subpart A of this part, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing or new sources respectively.

13. Section 63.751 is amended by revising the first sentence of paragraph (b)(6)(ii)(A), (b)(6)(iii) introductory text, and the first sentence of paragraph (b)(6)(iii)(A)(*2*) introductory text and paragraphs (b)(6)(iii)(D), (c)(1), (c)(2) and (d) to read as follows:

§ 63.751 Monitoring requirements.

* * * * *

(b) * * *

(6) * * *

(ii) * * *

(A) Except as allowed by paragraph (b)(6)(iii)(A)(*2*) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether VOC or HAP concentration is being measured. * * *

* * * * *

(iii) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a control device and establishing a site-specific operating parameter in accordance with paragraph (b)(1) of this section shall fulfill the requirements of paragraph (b)(6)(iii)(A) of this section and paragraph (b)(6)(iii)(B) or (C) of this section, as appropriate.

(A) * * *

(*2*) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (b)(6)(iii)(A)(*1*) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet or the outlet of the carbon adsorber as appropriate. * * *

* * * * *

(D) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraph (b)(6)(iii)(B) or (C) of this section, the owner or operator may replace the carbon in the carbon adsorber system with fresh carbon at a regular predetermined time interval as determined in accordance with paragraph (b)(2) of this section.

* * * * *

(c) * * *

(1) Each owner or operator using a dry particulate filter system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor the pressure drop across the system and read and record the pressure drop once per shift following the recordkeeping requirements of § 63.752(d).

(2) Each owner or operator using a waterwash system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor the water flow rate through the system, and read and record the water flow rate once per shift following the recordkeeping requirements of § 63.752(d).

(d) *Particulate filters and waterwash booths—depainting operations.* Each owner or operator using a dry particulate filter or waterwash system in accordance with the requirements of § 63.746(b)(4) shall, while depainting operations are occurring, continuously monitor the pressure drop across the particulate filters or the water flow rate through the waterwash system and read and record the pressure drop or the water flow rate once per shift following the recordkeeping requirements of § 63.752(e).

* * * * *

14. Section 63.752 is amended by revising paragraphs (b)(1), (e)(1)(ii), (e)(6), and (f) introductory text; and by removing paragraph (d)(4) to read as follows:

§ 63.752 Recordkeeping requirements.

* * * * *

(b) * * *

(1) The name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.

* * * * *

(e) * * *

(1) * * *

(ii) Monthly volumes of each organic HAP containing chemical stripper used or monthly weight of organic HAP-material used for spot stripping and decal removal.

* * * * *

(6) *Spot stripping and decal removal.* For spot stripping and decal removal, the volume of organic HAP-containing chemical stripper or weight of organic HAP used, the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used per aircraft, the annual number of aircraft stripped, and all data and calculations used.

* * * * *

(f) *Chemical milling maskant application operations.* Each owner or operator seeking to comply with the organic HAP and VOC content limits for the chemical milling maskant application operation, as specified in § 63.747(c), or the control system requirements specified in § 63.747(d), shall record the information specified in paragraphs (f)(1) through (f)(4) of this section, as appropriate.

* * * * *

15. Section 63.753 is amended by revising paragraphs (a)(1) introductory text and (d)(2)(i) to read as follows:

§ 63.753 Reporting requirements.

(a)(1) Except as provided in paragraphs (a)(2) and (a)(3) of this section, each owner or operator subject to this subpart shall fulfill the requirements contained in § 63.9(a) through (e) and (h) through (j), Notification requirements, and § 63.10(a), (b), (d), and (f), Recordkeeping and reporting requirements, of the General Provisions, 40 CFR part 63, subpart A, and that the initial notification for existing sources required in § 63.9(b)(2) shall be submitted not later than September 1, 1997. In addition to the requirements of § 63.9(h), the notification of compliance status shall include:

* * * * *

(d) * * *

(2) * * *

(i) The average volume per aircraft of organic HAP-containing chemical strippers or weight of organic HAP used for spot stripping and decal removal operations if it exceeds the limits specified in § 63.746(b)(3); and

* * * * *

16. Table 1 is added to the end of subpart GG to read as follows:

(2) * * *

$$G_i = \frac{M_{vi}}{(1 - V_{wi}) - V_{xi}} \qquad \text{Eq. 7}$$

* * * * *

(g) * * *

(3) * * *

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be captured for measurement, as described in paragraphs (g)(2)(ii) (A) and (B) of this section;

* * * * *

(9) * * *

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to paragraph (g) (2) or (4) of this section, the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

* * * * *

(i)(1) *Alternative application method—primers and topcoats.* Each owner or operator seeking to use an alternative application method (as allowed in § 63.745(f)(1)(ix)) in complying with the standards for primers and topcoats shall use the procedures specified in paragraphs (i)(2)(i) and (i)(2)(ii) or (i)(2)(iii) of this section to determine the organic HAP and VOC emission levels of the alternative application technique as compared to either HVLP or electrostatic spray application methods.

(2) * * *

(iii) Test the proposed application method against either HVLP or electrostatic spray application methods in a laboratory or pilot production area, using parts and coatings representative of the process(es) where the alternative method is to be used. The laboratory test will use the same part configuration(s) and the same number of parts for both the proposed method and the HVLP or electrostatic spray application methods.

(iv) Whenever the approach in either paragraph (i)(2)(ii) or (i)(2)(iii) of this section is used, the owner or operator shall calculate both the organic HAP and VOC emission reduction using equation:

$$P = \frac{E_b - E_3}{E_b} \times 100$$

where:

P=organic HAP or VOC emission reduction, percent.

E_b=organic HAP or VOC emissions, in pounds, before the alternative application technique was implemented, as determined under paragraph (i)(2)(i) of this section.

E_a=organic HAP of VOC emissions, in pounds, after the alternative application technique was implemented, as determined under paragraph (i)(2)(ii) of this section.

* * * * *

(j) *Spot stripping and decal removal.* Each owner or operator seeking to comply with § 63.746(b)(3) shall determine the volume of organic HAP-containing chemical strippers or alternatively the weight of organic HAP used per aircraft using the procedure specified in paragraphs (j)(1) through (j)(3) of this section.

(1) For each chemical stripper used for spot stripping and decal removal, determine for each annual period the total volume as applied or the total weight of organic HAP using the procedure specified in paragraph (d)(2) of this section.

* * * * *

(3) Calculate the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used for spot stripping and decal removal per aircraft using equation 20 (volume) or equation 21 (weight):

$$C = \frac{\sum_{i=1}^{n} V_{si}}{A} \qquad \text{Eq. 20}$$

where:

C=annual average volume (gal per aircraft) of organic HAP-containing chemical stripper used for spot stripping and decal removal.

n=number of organic HAP-containing chemical strippers used in the annual period.

V_{si}=volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A=number of aircraft for which depainting operations began during the annual period.

$$C = \frac{\sum_{i=1}^{n}\left(V_{si} D_{hi}\left(\sum_{i=1}^{m} W_{hi}\right)\right)}{A} \qquad \text{Eq. 21}$$

where:

C = annual average weight (lb per aircraft) of organic HAP (chemical stripper) used for spot stripping and decal removal.

m = number of organic HAP contained in each chemical stripper, as applied.

n = number of organic HAP-containing chemical strippers used in the annual period.

W_{hi} = weight fraction (expressed as a decimal) of each organic HAP (i) contained in the chemical stripper, as applied, for each aircraft depainted.

D_{hi} = density (lb/gal) of each organic HAP-containing chemical stripper (i), used in the annual period.

V_{si} = volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A = number of aircraft for which depainting operations began during the annual period.

(k) *Organic HAP content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant organic HAP content limit specified in § 63.747(c)(1) without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per unit volume of coating (chemical milling maskant) i as applied (less water), H_i (lb/gal).

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

* * * * *

(l) * * *

(4) Calculate the volume-weighted average mass of organic HAP emitted per unit volume (lb/gal) of chemical milling maskant (less water) as applied for all chemical milling maskants during each 30-day period using equation 22:

$$H_a = \frac{\sum_{i=1}^{n} W_{Hi} D_{mi} V_{mi}}{M_{lw}} \qquad \text{Eq. 22}$$

* * * * *

(n) * * *

(3) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of chemical milling maskant (less water and exempt solvents) as applied during each 30-day period using equation 23:

determined using the procedures in § 63.750(g) when a carbon adsorber is used and those in § 63.750(h) when a control device other than a carbon adsorber is used.

10. Section 63.747 is amended by revising paragraphs (c)(1), (c)(2) and (e)(2) to read as follows:

§ 63.747 Standards: Chemical milling maskant application operations.

* * * * *

(c) * * *

(1) Organic HAP emissions from chemical milling maskants shall be limited to organic HAP content levels of no more than 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant (less water) as applied, and no more than 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant (less water) as applied.

(2) VOC emissions from chemical milling maskants shall be limited to VOC content levels of no more than 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant (less water and exempt solvents) as applied, and no more than 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

* * * * *

(e) * * *

(2) Use the averaging provisions described in § 63.743(d).

11. Section 63.749 is amended by revising paragraphs (a), (b), (d)(3)(iii)(B), (d)(4)(iii), (f)(3)(ii)(A), and (h)(3)(i) to read as follows:

§ 63.749 Compliance dates and determinations.

(a) *Compliance dates.* (1) Each owner or operator of an existing affected source subject to this subpart shall comply with the requirements of this subpart by September 1, 1998, except as specified in paragraph (a)(2) of this section. Owners or operators of new affected sources subject to this subpart shall comply on the effective date or upon startup, whichever is later. In addition, each owner or operator shall comply with the compliance dates specified in § 63.6(b) and (c).

(2) Owners or operators of existing primer or topcoat application operations and depainting operations who construct or reconstruct a spray booth or hangar must comply with the new source requirements for inorganic HAP specified in §§ 63.745(g)(2)(ii) and 63.746(b)(4) for that new spray booth or hangar upon startup. Such sources must still comply with all other existing source requirements by September 1, 1998.

(b) *General.* Each facility subject to this subpart shall be considered in noncompliance if the owner or operator fails to submit a startup, shutdown, and malfunction plan as required by § 63.743(b) or uses a control device other than one specified in this subpart that has not been approved by the Administrator, as required by § 63.743(c).

* * * * *

(d) * * *

(3) * * *

(iii) * * *

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

* * * * *

(4) * * *

(iii) * * *

(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii); or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

* * * * *

(f) * * *

(3) * * *

(ii) * * *

(A) For any spot stripping and decal removal, the value of C, as determined using the procedures specified in § 63.750(j), is less than or equal to 26 gallons of organic HAP-containing chemical stripper or 190 pounds of organic HAP per commercial aircraft depainted calculated on a yearly average; and is less than or equal to 50 gallons of organic HAP-containing chemical stripper or 365 pounds of organic HAP per military aircraft depainted calculated on a yearly average; and

* * * * *

(h) * * *

(3) * * *

(i) For all uncontrolled chemical milling maskants, all values of H_i and H_a (as determined using the procedures specified in § 63.750 (k) and (l)) are less than or equal to 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water), and 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant as applied (less water). All values of G_i and G_a (as determined using the procedures specified in § 63.750 (m) and (n)) are less than or equal to 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water and exempt solvents), and 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

* * * * *

12. Section 63.750 is amended by revising the equation in paragraph (b)(2); paragraphs (c)(1), (e)(1), equation 7 ("Eq. 7") in (e)(2), (g)(3)(ii), (g)(9)(i), (i)(1), (i)(2)(iii), (j) introductory text, (j)(1), (j)(3), (k) introductory text, (k)(1), (l)(4), and (n)(3); and by adding paragraphs (i)(2)(iv) and (o) to read as follows:

§ 63.750 Test methods and procedures.

* * * * *

(b) * * *

(2) * * *

$$PP_c = \sum_{i=1}^{n} \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{\sum_{i=1}^{n} W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

* * * * *

(c) * * *

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

* * * * *

(e) * * *

(1) Determine the VOC content of each formulation (less water and exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

and is approved by the permitting authority.

(ii) For new sources, either:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in § 63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of this section; or

TABLE 3.—THREE-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.0
>80	>1.0
>65	>0.42

TABLE 4.—THREE-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.5
>85	>1.1
>75	>0.70

(B) Before exhausting it to the atmosphere, pass the air stream through an air pollution control system that meets or exceeds the efficiency data points in Tables 3 and 4 of this section and is approved by the permitting authority.

(iii) Owners or operators of new sources that have commenced construction or reconstruction after June 6, 1994 but prior to October 29, 1996 may comply with the following requirements in lieu of the requirements in paragraph (g)(2)(ii) of this section:

(A) Pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere.

(B) If the primer or topcoat contains chromium or cadmium, control shall consist of a HEPA filter system, three-stage filter system, or other control system equivalent to the three stage filter system as approved by the permitting agency.

(iv) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter and read and record the pressure drop once per shift; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limit(s).

(v) If a waterwash system is used, continuously monitor the water flow rate and read and record the water flow rate once per shift.

* * * * *

(4) * * *

(x) The use of hand-held spray can application methods.

9. Section 63.746 is amended by revising the last sentence of paragraph (a) introductory text, (b)(1), (b)(3), (b)(4)(i), (b)(4)(ii), (b)(4)(iii)(C), (b)(4)(iv), the second sentence of paragraph (b)(4)(v), and (c)(1); and adding paragraphs (c)(2) and (c)(3) to read as follows:

§ 63.746 Standards: Depainting operations.

(a) * * * This section does not apply to an aerospace manufacturing or rework facility that depaints six or less completed aerospace vehicles in a calendar year.

* * * * *

(b)(1) *HAP emissions—non-HAP chemical strippers and technologies.* Except as provided in paragraphs (b)(2) and (b)(3) of this section, each owner or operator of a new or existing aerospace depainting operation subject to this subpart shall emit no organic HAP from chemical stripping formulations and agents or chemical paint softeners.

* * * * *

(3) Each owner or operator of a new or existing depainting operation shall not, on an annual average basis, use more than 26 gallons of organic HAP-containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted; or more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted for spot stripping and decal removal.

(4) * * *

(i) Perform the depainting operation in an enclosed area, unless a closed-cycle depainting system is used.

(ii)(A) For existing sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system, certified using the method described in § 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of § 63.745, through a baghouse, or through a waterwash system before exhausting it to the atmosphere.

(B) For new sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system certified using the method described in § 63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of § 63.745 or through a baghouse before exhausting it to the atmosphere.

(iii) * * *

(C) Continuously monitor the pressure drop across the filter, and read and record the pressure drop once per shift; and

* * * * *

(iv) If a waterwash system is used, continuously monitor the water flow rate, and read and record the water flow rate once per shift.

(v) * * * If the water path in the waterwash system fails the visual continuity/flow characteristics check, as recorded pursuant to § 63.752(e)(7), or the water flow rate, as recorded pursuant to § 63.752(d)(2), exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. * * *

* * * * *

(c) * * *

(1) All organic HAP emissions from the operation shall be reduced by the use of a control system. Each control system that was installed before the effective date shall reduce the operations' organic HAP emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies.

(2) Each control system installed on or after the effective date shall reduce organic HAP emissions to the atmosphere by 95 percent or greater. Reduction shall take into account capture and destruction or removal efficiencies, and may take into account the volume of chemical stripper used relative to baseline levels (e.g., the 95 percent efficiency may be achieved by controlling emissions at 81 percent efficiency with a control system and using 74 percent less stripper than in baseline applications). The baseline shall be calculated using data from 1996 and 1997, which shall be on a usage per aircraft or usage per square foot of surface basis.

(3) The capture and destruction or removal efficiencies are to be

container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

(d) *Flush cleaning.* Each owner or operator of a flush cleaning operation subject to this subpart (excluding those in which Table 1 or semi-aqueous cleaning solvents are used) shall empty the used cleaning solvent each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.

(e) * * *

Cleaning solvent type	Composition requirements
Aqueous	Cleaning solvents in which water is the primary ingredient (≥80 percent of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93 °C (200 °F) (as reported by the manufacturer), and the solution must be miscible with water.
Hydrocarbon-based	Cleaners that are composed of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 °C (3.75 in. H_2O at 68 °F). These cleaners also contain no HAP.

8. Section 63.745 is amended by revising paragraphs (e)(1), (e)(2), (f) introductory text, (f)(1) introductory text, the first sentence of (f)(2), (g)(2)(i), (g)(2)(ii), and (g)(2)(iii); removing paragraph (g)(2)(iv); redesignating paragraphs (g)(2)(v) and (g)(2)(vi) as (g)(2)(iv) and (g)(2)(v), respectively; revising the newly designated paragraphs (g)(2)(iv) and (g)(2)(v); removing the word "and" at the end of paragraph (g)(4)(viii); revising the punctuation "." at the end of paragraph (g)(4)(ix) to read "; and"; and adding paragraph (g)(4)(x) to read as follows:

§ 63.745 Standards: Primer and topcoat application operations.

* * * * *

(e) * * *

(1) Use primers and topcoats (including self-priming topcoats) with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) through (c)(4) of this section; or

(2) Use the averaging provisions described in § 63.743(d).

(f) *Application equipment.* Except as provided in paragraph (f)(3) of this section, each owner or operator of a new or existing primer or topcoat (including self-priming topcoat) application operation subject to this subpart in which any of the coatings contain organic HAP or VOC shall comply with the requirements specified in paragraphs (f)(1) and (f)(2) of this section.

(1) All primers and topcoats (including self-priming topcoats) shall be applied using one or more of the application techniques specified in paragraphs (f)(1)(i) through (f)(1)(ix) of this section. * * *

* * * * *

(2) All application devices used to apply primers or topcoats (including self-priming topcoats) shall be operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at alltimes. * * *

* * * * *

(g) * * *

(2) * * *

(i) For existing sources, the owner or operator must choose one of the following:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in § 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of this section; or

TABLE 1.—TWO-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>90	>5.7
>50	>4.1
>10	>2.2

TABLE 2.—TWO-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>90	>8.1
>50	>5.0
>10	>2.6

(B) Before exhausting it to the atmosphere, pass the air stream through a waterwash system that shall remain in operation during all coating application operations; or

(C) Before exhausting it to the atmosphere, pass the air stream through an air pollution control system that meets or exceeds the efficiency data points in Tables 1 and 2 of this section

or operator of an affected source subject to this subpart is also subject to the following sections of subpart A of this part:

* * * * *

(10) For the purposes of compliance with the requirements of § 63.5(b)(4) of the General Provisions and this subpart, owners or operators of existing primer or topcoat application operations and depainting operations who construct or reconstruct a spray booth or hangar that does not have the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined shall only be required to notify the Administrator of such construction or reconstruction on an annual basis. Notification shall be submitted on or before March 1 of each year and shall include the information required in § 63.5(b)(4) for each such spray booth or hangar constructed or reconstructed during the prior calendar year, except that such information shall be limited to inorganic HAP's. No advance notification or written approval from the Administrator pursuant to § 63.5(b)(3) shall be required for the construction or reconstruction of such a spray booth or hangar unless the booth or hangar has the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined.

(b) *Startup, shutdown, and malfunction plan.* Each owner or operator that uses an air pollution control device or equipment to control HAP emissions shall prepare and operate in accordance with a startup, shutdown, and malfunction plan in accordance with § 63.6. Dry particulate filter systems operated per the manufacturer's instructions are exempt from a startup, shutdown, and malfunction plan. A startup, shutdown, and malfunction plan shall be prepared for facilities using locally prepared operating procedures. In addition to the information required in § 63.6, this plan shall also include the following provisions:

* * * * *

(c) An owner or operator who uses an air pollution control device or equipment not listed in this subpart shall submit a description of the device or equipment, test data verifying the performance of the device or equipment in controlling organic HAP and/or VOC emissions, as appropriate, and specific operating parameters that will be monitored to establish compliance with the standards to the Administrator for approval not later than 120 days prior to the compliance date.

(d) Instead of complying with the individual coating limits in §§ 63.745 and 63.747, a facility may choose to comply with the averaging provisions specified in paragraphs (d)(1) through (d)(6) of this section.

(1) Each owner or operator of a new or existing source shall use any combination of primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants such that the monthly volume-weighted average organic HAP and VOC contents of the combination of primers, topcoats, Type I chemical milling maskants, or Type II chemical milling maskants, as determined in accordance with the applicable procedures set forth in § 63.750, complies with the specified content limits in §§ 63.745(c) and 63.747(c), unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(2) Averaging is allowed only for uncontrolled primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants.

(3) Averaging is not allowed between primers and topcoats (including self-priming topcoats).

(4) Averaging is not allowed between Type I and Type II chemical milling maskants.

(5) Averaging is not allowed between primers and chemical milling maskants, or between topcoats and chemical milling maskants.

(6) Each averaging scheme shall be approved in advance by the permitting agency and adopted as part of the facility's title V permit.

7. Section 63.744 is amended by revising the text of paragraph (a) introductory text, and paragraphs (a)(1), (a)(2), (b) introductory text, (b)(1), (c)(1)(ii), (c)(2), (c)(4), (d), (e)(1), (e)(2), (e)(9), (e)(10), and (e)(11) and by removing the period at the end of paragraph (e)(12) and replacing it with "; and"; by adding a sentence to (6) introductory text, and paragraph (e)(13); and by redesignating Table 3 as Table 1 and revising it and transferring it from paragraph (a) to the end of this section as follows:

§ 63.744 Standards: Cleaning operations.

(a) *Housekeeping measures.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall comply with the requirements in these paragraphs unless the cleaning solvent used is identified in Table 1 of this section or contains HAP and VOC below the de minimis levels specified in § 63.741(f).

(1) Place cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers upon completing their use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(2) Store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations in closed containers.

* * * * *

(b) *Hand-wipe cleaning.* Each owner or operator of a new or existing hand-wipe cleaning operation (excluding cleaning of spray gun equipment performed in accordance with paragraph (c) of this section) subject to this subpart shall use cleaning solvents that meet one of the requirements specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section. Cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the requirements in paragraphs (b)(1), (b)(2), and (b)(3) of this section.

(1) Meet one of the composition requirements in Table 1 of this section;

* * * * *

(c) * * * Spray gun cleaning operations using cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the requirements in paragraphs (c)(1) through (c)(4) of this section.

(1) * * *

(ii) If leaks are found during the monthly inspection required in § 63.751(a), repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed, and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(2) *Nonatomized cleaning.* Clean the spray gun by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. Direct the cleaning solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.

* * * * *

(4) *Atomizing cleaning.* Clean the spray gun by forcing the cleaning solvent through the gun and direct the resulting atomized spray into a waste

(2) For organic HAP or VOC emissions, each primer application operation, which is the total of all primer applications at the facility.

(3) For organic HAP or VOC emissions, each topcoat application operation, which is the total of all topcoat applications at the facility.

(4) For organic HAP or VOC emissions, each depainting operation, which is the total of all depainting at the facility.

* * * * *

(7) For inorganic HAP emissions, each spray booth or hangar that contains a primer or topcoat application operation subject to § 63.745(g) or a depainting operation subject to § 63.746(b)(4).

* * * * *

(f) * * * These requirements also do not apply to parts and assemblies not critical to the vehicle's structural integrity or flight performance. The requirements of this subpart also do not apply to primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations. Additional specific exemptions from regulatory coverage are set forth in paragraphs (e), (g), (h), (i) and (j) of this section and §§ 63.742, 63.744(a)(1), (b), (e), 63.745(a), (f)(3), (g)(4), 63.746(a), (b)(5), 63.747(c)(3), and 63.749(d).

* * * * *

(h) Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters), are exempt from the requirements of this subpart, except for depainting operations found in § 63.746.

(i) Any waterborne coating for which the manufacturer's supplied data demonstrate that organic HAP and VOC contents are less than or equal to the organic HAP and VOC content limits for its coating type, as specified in §§ 63.745(c) and 63.747(c), is exempt from the following requirements of this subpart: §§ 63.745(d)–(e), 63.747(d)–(e), 63.749(d) and (h), 63.750(c)–(h) and (k)–(m), 63.752(c) and (f), and 63.753(c) and (e). A facility shall maintain the manufacturer's supplied data and annual purchase records for each exempt waterborne coating readily available for inspection and review and shall retain these data for 5 years.

(j) This subpart does not apply to rework operations performed on antique aerospace vehicles or components.

5. Section 63.742 is amended by revising the definitions for "aircraft transparency," "chemical milling maskant," "chemical milling maskant application operation," "cleaning solvent," "coating," "high volume low pressure (HVLP) spray equipment," and "specialty coating"; by removing the parenthetical text from the end of the definition of "Type II etchant"; by removing the last sentence from the definition of "self-priming topcoat"; and by adding in alphabetical order definitions for "antique aerospace vehicle or component," "closed-cycle depainting system," "recovery device," "Type I etchant," and "waterborne (water-reducible) coating" to read as follows:

§ 63.742 Definitions.

* * * * *

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses, and other components which are constructed of transparent materials.

Antique aerospace vehicle or component means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

* * * * *

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are also exempt from this subpart. (See also Type I and Type II etchant definitions.)

Chemical milling maskant application operation means application of chemical milling maskant for use with Type I or Type II chemical milling etchants.

* * * * *

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f).

Closed-cycle depainting system means a dust-free, automated process that removes permanent coating in small sections at a time and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

Coating means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

* * * * *

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

* * * * *

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separators or organic removal devices such as decanters, strippers, or thin-film evaporation units.

* * * * *

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in appendix A to this subpart and in the CTG for Aerospace Manufacturing and Rework Operations (EPA 453/R–97–004).

* * * * *

Type I etchant means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

* * * * *

Waterborne (water-reducible) coating means any coating that contains more than 5 percent water by weight as applied in its volatile fraction.

* * * * *

6. Section 63.743 is amended by revising paragraphs (a) introductory text, (b) introductory text, and (c), and by adding paragraphs (a)(10) and (d) to read as follows:

§ 63.743 Standards: General.

(a) Except as provided in paragraphs (a)(4) through (a)(10) of this section and in Table 1 of this subpart, each owner

planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the E.O.

Pursuant to the terms of Executive Order 12866, it has been determined that this action is not a "significant regulatory action" within the meaning of the E.O.

Under E.O. 12866, the final CTG document for aerospace manufacturing and rework facilities is not considered a "regulatory action," defined as "any substantive action by an agency * * * that promulgates or is expected to lead to the promulgation of a final rule or regulation." This CTG document is not a regulatory action by EPA, rather it provides information to States to aid them in developing rules.

D. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. The EPA has also determined that this rule will not have a significant impact on a substantial number of small entities. This final rule makes minor amendments to the Aerospace NESHAP, including changes to definitions, applicability provisions, and several minor changes to the standards (emission limits) and the monitoring, recordkeeping, and reporting requirements. In addition, this notice includes a standard for Type I chemical milling maskants and a test method for determining filtration efficiency of dry particulate filters. The overall impact of these amendments is a net decrease in requirements on all entities affected by this rule, including small entities. Therefore these amendments will not have a significant economic impact on a substantial number of small entities.

E. Submission to Congress

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

F. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act") (signed into law on March 22, 1995) requires that the Agency prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by State, local, and Tribal governments, in aggregate, or by the private sector, of $100 million or more in any 1 year. Section 203 requires the Agency to establish a plan for obtaining input from and informing, educating, and advising any small governments that may be significantly or uniquely affected by a proposed intergovernmental mandate. Section 204 requires the Agency to develop a process to allow elected state, local, and Tribal government officials to provide input in the development of any proposal containing a significant Federal intergovernmental mandate.

Under section 205 of the Unfunded Mandates Act, the Agency must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. The Agency must select from those alternatives the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule, unless the Agency explains why this alternative is not selected or the selection of this alternative is inconsistent with law. The EPA has determined that these amendments do not include a Federal mandate that may result in expenditure by State, local, and Tribal governments, in aggregate, or by the private sector, of $100 million or more in any 1 year. Small governments will not be uniquely impacted by these amendments. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: March 10, 1998.

Carol M. Browner,

Administrator.

For reasons set out in the preamble, parts 9 and 63 of title 40, chapter I, of the Code of Federal Regulations are amended as follows:

PART 9—[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9 1857 *et seq.*, 6901–6992k, 7401–7671g, 7542, 9601–9657, 11023, 11048.

2. In § 9.1 the table is amended by revising the entry "63.752–63.753" to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
* * * * *	
National Emission Standards for Hazardous Air Pollutants for Source Categories	
* * * * *	
63.752–63.753	2060–0314
* * * * *	

PART 63—[AMENDED]

3. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart GG—[Amended]

4. Section 63.741 is amended by revising paragraph (b), paragraph (c) introductory text, paragraphs (c)(2), (c)(3), (c)(4), and the last three sentences of paragraph (f); and adding paragraphs (c)(7), (h), (i), and (j) to read as follows:

§ 63.741 Applicability and designation of affected sources.

* * * * *

(b) The owner or operator of an affected source shall comply with the requirements of this subpart and of subpart A of this part, except as specified in § 63.743(a) and Table 1 of this subpart.

(c) *Affected sources.* The affected sources to which the provisions of this subpart apply are specified in paragraphs (c)(1) through (7) of this section. The activities subject to this subpart are limited to the manufacture or rework of aerospace vehicles or components as defined in this subpart. Where a dispute arises relating to the applicability of this subpart to a specific activity, the owner or operator shall demonstrate whether or not the activity is regulated under this subpart.

* * * * *

reflect baseline levels nationwide, and will have no significant impact on emission reductions, the EPA has decided to maintain the proposed definitions and associated limits for these coating categories.

Under the Clean Air Act, as amended in 1990 (the "Act"), State implementation plans (SIP's) for ozone nonattainment areas (except marginal areas) must be revised to require reasonably available control technology (RACT) for sources for which the EPA publishes a CTG between November 15, 1990 and the date an area achieves attainment status (the Act, § 182(b)(2), (c), (d), (e)). The EPA has defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53761, 53762, September 17, 1979).

The CTG's review current knowledge and data concerning the technology and costs of various emissions control techniques. The CTG's are intended to provide State and local air pollution authorities with an information base for proceeding with their own analyses of RACT to meet statutory requirements.

Each CTG contains a "presumptive norm" for RACT for a specific source category, based on the EPA's evaluation of the capabilities and problems general to the category. Where applicable, the EPA recommends that States adopt requirements consistent with the presumptive norm. However, the presumptive norm is only a recommendation. States may choose to develop their own RACT requirements on a case-by-case basis, considering the emission reductions needed to achieve the national ambient air quality standards and the economic and technical circumstances of the individual source.

This CTG is issued pursuant to Clean Air Act § 183(b)(3), which requires issuance of a CTG to reduce VOC emissions from aerospace coatings and solvents. It addresses RACT for control of VOC emissions from aerospace manufacturing and rework facilities. Volatile organic compound emissions from primer, topcoat, and "specialty" coating applications, maskant applications, sealing, adhesives, and cleaning operations are addressed. Emission limits for processes also addressed in the NESHAP are identical to the NESHAP limits. Those revisions to the NESHAP amendments described in this preamble and relevant to the CTG have been incorporated into the final CTG document. Many of the steps in aerospace manufacturing and rework operations involve the use of organic solvents and are sources of VOC emissions. The sources, mechanisms, and control of these VOC emissions are described in the CTG.

The coating category VOC limits, application techniques, and equipment requirements identified as RACT in the CTG were assumed to represent RACT requirements 1 year after the major sources have met the NESHAP (MACT) requirements, and therefore, will be effective on September 1, 1999. (The NESHAP compliance date for existing sources is September 1, 1998). The EPA estimates that State and local regulations developed pursuant to this CTG will affect about 2,869 facilities. Since the only new requirements in the CTG (requirements that are not included in the NESHAP) concern sealants, adhesives, and specialty coatings, which represent only about 3 percent of all VOC emissions from aerospace operations, the additional costs and emission reductions resulting from the CTG will be negligible. Further information on costs is presented in the CTG document and in the July 1995 BID on the NESHAP for Aerospace Manufacturing and Rework Facilities.

IV. Administrative Requirements

A. Docket

The docket is an organized and complete file of all of the information submitted to or otherwise considered by the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and the involved industries to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and the EPA responses to significant comments, the content of the docket will serve as the record in case of judicial review (except for interagency review materials) (section 307(d)(7)(A) of the Act).

B. Paperwork Reduction Act

The amendments do not impose any new information collection requirements and result in no change to the currently approved collection. The Office of Management and Budget (OMB) has approved the information collection requirements contained in the NESHAP for aerospace manufacturing and rework facilities under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and has assigned OMB control No. 2060–0314. (EPA ICR No. 1687.03). A copy of the Information Collection Request (ICR) may be obtained from Sandy Farmer, Regulatory Information Division; EPA; 401 M Street, S.W., (Mail Code 2137); Washington, D.C. 20460 or by calling (202) 260–2740.

Burden means the total time, effort, or financial resources expended by person to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data searches; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulation are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Today's amendments should have no impact on the information collection burden estimates made previously. Today's action does not impose any additional information collection requirements. The reduced recordkeeping associated with cleaning solvents used for nonaerospace manufacturing/rework activities represents a 6 percent reduction in the burden estimated for the final rule. Consequently, the ICR has not been revised for purposes of today's action.

C. Executive Order 12866

Under Executive Order (E.O.) 12866 (58 FR 51735 [October 4, 1993]), the EPA is required to determine whether a regulation is "significant" and therefore subject to OMB review and the requirements of this E.O. to prepare a regulatory impact analysis (RIA). The E.O. defines "significant regulatory action" as one that is likely to result in a rule that may (1) have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or

separate programs; hence, the EPA has deleted the reference to ozone-depleting substances in Table 1 of § 63.744.

Another commenter noted that the table numbering in proposed § 63.750(o) was incorrect. The Agency has corrected the text to state "* * * found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing and new sources respectively."

Two commenters noted there should be a reference to the term "H_i" in § 63.750(k) since § 63.749(h)(3)(i) cites this section for the method to determine H_i. The Agency has clarified § 63.750(k) by adding the term H_i to the stated definition at the end of the paragraph.

T. Technical Corrections

The following amendments are technical corrections that were not part of the October 29, 1996 proposal. These changes are being made as part of today's action as a matter of efficiency in rulemaking. Furthermore, these changes are noncontroversial and do not substantively change the requirements of the rule. By promulgating these technical corrections directly as a final rule, the EPA is foregoing an opportunity for public comment on a notice of proposed rulemaking. Section 553(b) of title V of the United States Code and section 307(b) of the CAA permit an agency to forego notice and comment when "the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefore in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest." The EPA finds that notice and comment regarding these technical corrections are unnecessary due to their noncontroversial nature and because they do not change the requirements of the final rule. The EPA finds that this constitutes good cause under 5 U.S.C. § 553(b) for a determination that the issuance of a notice of proposed rulemaking is unnecessary.

1. Clarification of the Definition of Coating

The word "protective" was added to the definition of "coating" in § 63.742 to be consistent with other surface coating regulations and CTG's.

2. Addition of the Definition of Recovery Device

Two commenters requested that the term "dedicated solvent recovery device" be defined in the rule so that proper test procedures may be followed. The Agency has included the following definition for "recovery device" in § 63.742 which is based on the definition from the HON:

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separator or organic removal devices such as decanters, strippers, or thin-film evaporation units.

A dedicated solvent recovery device refers to such control equipment (as described/defined above) that is specific to a given process or control system.

3. Correction of Cited Reference to Table 1 of this Section in § 63.744(a), (b)(1), and (d)

The numbering format for several tables in the promulgated rule was erroneous and confusing. The table reference in § 63.744(a),(b)(1), and (d) has been corrected to read: "Table 1 of this section."

4. Clarification of Requirements in § 63.744(c)

Several questions have been raised related to spray gun cleaning using water as the cleaning solvent. Language was added to the introductory text at the end of § 63.744(c) stating that spray gun cleaning operations using cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the subsequent requirements in paragraphs (c)(1) through (c)(4).

5. Clarifications to § 63.745(e) and (f)

All references to topcoat(s) or topcoat application operations include self-priming topcoats. The parenthetical phrase "(including self-priming topcoats)" was added to all applicable paragraphs in § 63.745 (e) and (f) for clarification and consistency with § 63.745(c)(3) and (c)(4). In § 63.745(f)(1), the reference to application techniques specified in paragraphs (f)(1)(i) through (f)(1)(viii) has been corrected to read "(f)(1)(i) through (f)(1)(ix)."

6. Clarification to § 63.746(a)

The words "or rework" were added to the last sentence in § 63.746(a) to clarify that all aerospace facilities (manufacturing or rework) that depaint six or less completed aerospace vehicles in a calendar year are exempt from this section.

7. Clarification of Language in § 63.746(c)(1)

The wording in § 63.746(c)(1) was changed to three separate paragraphs (paragraphs (c) (2) and (3) were added) to clarify the procedures to be used in determining compliance with the control efficiency (≥95 percent) for new control systems. The language has been clarified to describe how the control efficiencies are determined involving the capture and destruction or removal efficiencies and may take into account the volume of chemical stripper used (relative to baseline applications) and is consistent with the example provided.

8. Correction of Equation to Determine the Composite Vapor Pressure in § 63.750(b)(2)

A summation sign was added in front of the second term of the denominator (involving "W_e") of the equation used to determine the composite vapor pressure of hand-wipe cleaning solvents.

9. Correction of OMB Tracking Number

In compliance with the Paperwork Reduction Act (PRA), this technical correction amends the table that lists the Office of Management and Budget (OMB) control numbers issued under the PRA for this final rule.

The EPA is today amending the table in 40 CFR part 9 (Section 9.1) of currently approved information collection request (ICR) control numbers issued by OMB for various regulations. The affected regulations are codified at 40 CFR part 63 subpart GG, sections 63.752 and 63.753 (recordkeeping and reporting requirements, respectively). The correct OMB control (tracking) number for this final rule is 2060–0314.

This ICR was previously subject to public notice and comment prior to OMB approval. As a result, EPA finds that there is "good cause" under section 553(b)(B) of the Administrative Procedure Act (5 U.S.C. 553(b)(B)) to amend this table without prior notice and comment. Due to the technical nature of the table, further notice and comment would be unnecessary.

III. Control Techniques Guideline

Today's action includes the final issuance of the control techniques guideline(CTG) whose availability in draft form was announced in the **Federal Register** on October 29, 1996 (61 FR 55842). There were several comments involving the draft CTG submitted with other comments on the proposed NESHAP amendments. Most of those comments involved specialty coating category definitions and their associated VOC limits. One commenter who suggested adding three new coating category definitions (discussed previously in section Q) also raised several other concerns involving the proposed definitions and/or associated limits for clear coatings, lacquers, and specialized function coatings. Since the specialty coating limits are meant to

operations using dry particulate filters and HEPA filters to comply with this NESHAP. The EPA proposed to add language to § 63.751(c)(1) to clarify that owners or operators are required to read and record monitoring (i.e., pressure drop) data only once per shift.

One commenter requested that the phrase "continuously monitor" in § 63.745(g)(2)(v) be changed to "monitor once per shift" to avoid confusion with the Agency's clarification of monitoring requirements in other sections of the final rule. Past experience with such control systems indicates that reading the designated operating parameter once per shift is sufficient for this system to be considered continuously monitored. The Agency believes that the systems should be continuously monitored by some mechanism, but that reading and recording the data should be required only once per shift. Therefore, the EPA has changed the cited text in § 63.745 (g)(2)(iv)(C) and (g)(2)(v) to match monitoring requirements in other sections of the final rule.

P. Depainting Operations

Based on numerous comments on the depainting operation standard, the EPA proposed a clarification to § 63.746. The promulgated standard was presented in terms of volume (gallons) of organic HAP-containing chemical strippers per aircraft. Because the NESHAP is specific to HAP, in October 1996 the EPA proposed changing the units of the standard and stating the requirements in terms of weight (pounds) of organic HAP per aircraft. The proposed standard was meant to be equivalent in terms of actual HAP emissions to the atmosphere and was based on assumptions concerning typical HAP contents of chemical strippers. The proposed limits allowed greater flexibility to the owner or operator of a new or existing depainting operation in selecting materials to perform spot stripping and decal removal.

Based on comments involving technical arguments both for and against the different units for the spot stripping and decal removal allowance, the EPA decided to include both types of units and allow operators to decide which units they want to use and document their decision in their initial notification and/or operating permit. Accordingly, the EPA is promulgating the spot stripping and decal removal allowance in § 63.746(b)(3) as follows:

> Each owner or operator of a new or existing depainting operation shall not, on an annual average basis, use more than 26 gallons of organic-HAP containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted; or more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted for spot stripping and decal removal.

One commenter noted an apparent error in the proposed revision of Equation 20 and provided corrected definitions for the revised terms in the corrected equation. The EPA has incorporated those corrections in the final rule, as well as provided both equations to calculate the average annual volume of organic HAP-containing chemical stripper (Equation 20) or average annual weight of organic HAP (newly designated Equation 21) used for spot stripping and decal removal.

Accordingly, the EPA has also revised Equation 21 in § 63.750(j)(3) as follows:

$$C = \frac{\sum_{i=1}^{n}\left(V_{si}D_{hi}\left(\sum_{i=1}^{m}W_{hi}\right)\right)}{A} \qquad \text{Eq. 21}$$

Where:

C=annual average weight (lb per aircraft) of organic HAP (chemical stripper) used for spot stripping and decal removal.

m=number of organic HAP contained in each chemical stripper, as applied.

n=number of organic HAP-containing chemical strippers used in the annual period.

W_{hi}=weight fraction (expressed as a decimal) of each organic HAP (i) contained in the chemical stripper, as applied, for each aircraft depainted.

D_{hi}=density (lb/gal) of each organic HAP-containing chemical stripper (i) used in the annual period.

V_{si}=volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A=number of aircraft for which depainting operations began during the annual period.

Another commenter noted a typographical error in the proposed revision to the spot stripping and decal removal allowance in § 63.749(f)(3)(ii)(A). The Agency has incorporated the corrected text into the final amendment.

Q. Applicability of General Provisions

The EPA proposed in October 1996 the addition of Table 1: General Provisions' Applicability to subpart GG, in order to clarify the applicability of the General Provisions to this rule. Table 1 is referenced in § 63.741 and is located at the end of the final rule text. No comments were provided on this issue.

R. Specialty Coatings

In appendix A to this subpart, the EPA proposed to revise the last sentence of the definition of adhesive bonding primer to state: "There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F." This revision is a clarification that was omitted in the final rule.

Two commenters suggested that the specialty coating definitions be reviewed and one of the commenters further suggested that the following specialty coating categories be added:

> *Bearing coating*—a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.
>
> *Dry lubricative material*—a coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which acts as a dry lubricant.
>
> *Caulking and smoothing compounds*—semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

These coating categories have been used by the San Diego and/or South Coast (California) Air Quality Management Districts in their aerospace coating regulations. Therefore, the Agency has incorporated these definitions into appendix A to subpart GG (and has also incorporated the suggested definitions and the corresponding VOC limits into the final CTG document). The Agency has also deleted the definitions for conformal coatings, protective oils/waxes, and space vehicle coatings from appendix A to subpart GG to be consistent with the CTG. Other commenters found typographical errors or areas for clarification involving the definitions of "electric or radiation-effect coating," "pretreatment coatings," and "wet fastener installation coating" which have been corrected in these final amendments.

S. Miscellaneous Changes

The EPA also made a number of minor changes to several sections of the October 1996 proposal based on public comments. One commenter requested the removal of the prohibition on use of ozone-depleting substances from § 63.744. The control of HAP and ozone-depleting substances are under two

subject to § 63.746(b)(4) is considered an affected source and has added this description under § 63.741(c). To avoid any inconsistency, the Agency has also added the words "For organic HAP or VOC emissions" at the beginning of § 63.741(c) (2), (3), and (4). If such an affected source is constructed or reconstructed after October 29, 1996, then that spray booth or hangar must comply with the applicable inorganic HAP control requirements. Construction or reconstruction of a new spray booth or hangar at a facility with an existing coating or depainting operation will not cause the existing operation to be subject to any other new source standards; only the new spray booth or hangar will be subject to the applicable new source requirements for inorganic HAP and will need to comply upon the effective date of the requirements or startup, whichever is later. The EPA is also making this clarification in § 63.749(a), the compliance dates and determinations section of the final rule.

In addition, EPA also clarified that § 63.5(b)(3) of the General Provisions, which requires advance notice and approval by the Agency prior to construction or reconstruction of a major affected source, shall apply to the construction or reconstruction of a new spray booth or hangar at a facility for an existing coating or depainting operation only if the booth or hangar has the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined. Owners or operators of an existing coating or depainting operation who construct or reconstruct a new booth or hangar that emit or have the potential to emit less than 10/25 tons/yr of inorganic HAP's will only be required to submit an annual notification on or before March 1 of each year. This annual notification shall include all of the information required in § 63.5(b)(4) for each such booth or hangar constructed or reconstructed in the prior calendar year, except that the information shall be limited to the inorganic HAP's from the new booth or hangar. Of course, any owner or operator that constructs or reconstructs a new spray booth or hangar at a facility at which there is no existing coating or depainting operation will be required to comply with all of the applicable notice and advance approval requirements of § 63.5.

M. Emissions Averaging

Under the September 1, 1995 promulgated rule the averaging of emissions was permitted to occur within coating types (i.e., topcoats, primers, or maskants). The EPA also indicated at that time in the 1995 background information document that EPA would be investigating options with respect to implementing a broad-based averaging scheme as a compliance option for the Aerospace NESHAP. Based on additional discussion in roundtable meetings, the EPA proposed in the October 29, 1996 amendments to consolidate the language dealing with the averaging of emissions as it applies to the aerospace industry. Paragraphs 63.745(e)(2) and 63.747(e)(2) were consolidated into a new § 63.743(d), which, if promulgated as proposed, would have permitted averaging across coating types.

In response to the October 1996 proposal, the EPA received two comments that supported the changes to the averaging provisions. One commenter indicated that introductory text was needed to clarify the intent of § 63.743(d), which is where the averaging provisions are now located. The EPA agrees with the commenter and has added introductory language to § 63.743(d). Another commenter wanted the averaging provisions to be expanded to include controlled operations (i.e., those with control devices). The EPA believes that as currently allowed, the averaging of uncontrolled coatings will encourage development and use of lower HAP and VOC content coatings in the aerospace industry. In order to preserve the environmental benefit of pollution prevention, EPA will not extend the averaging system to include controlled coatings.

With regards to an expanded emissions averaging scheme, the EPA looked at various ways to expand the averaging provisions in the September 1995 promulgated rule so as to allow averaging between certain coating types. In designing emissions trading and averaging systems, EPA believes that it is important to consider the effect that trading or averaging is likely to have on facilities' actual emissions, as well as the effect on facilities' maximum allowable emissions. A workable scheme for averaging across coating types was not developed because the format of the coating limits in the rule as originally promulgated creates inherent difficulties in making equitable comparisons/calculations of actual emissions from coating categories with different limits. In order to include effective emissions averaging provisions for different coating categories (e.g., primers, topcoats, and maskants) or other emission sources, the format of the entire rule would have to be overhauled. Such changes are now beyond the scope of the work involved in finalizing these amendments to the aerospace rule.

N. Requirements for New and Existing Primer and Topcoat Application Operations

The September 1, 1995 promulgated NESHAP requires owners or operators of primer and topcoat application operations who wish to use an alternative application method (other than HVLP or electrostatic spray) to demonstrate that the emissions generated during the initial 30-day period, the period of time required to apply primer to five completely assembled aircraft, or a time period approved by the permitting agency are less than or equal to the emissions generated using HVLP or electrostatic spray application methods. Since promulgation, the Agency has received comments from industry concerning the test method for alternative spray equipment application requiring actual production trials. Those concerns involved the use of ineffective application equipment on actual production parts or assemblies which could lead to product quality and safety issues with significant cost to the manufacturer. The Agency has acknowledged those concerns and provided additional flexibility to owners or operators of primer and topcoat application operations seeking to use alternative application methods.

The October 1996, proposed amendments to the final NESHAP in § 63.750(i)(2)(ii) allowed owners or operators an alternative approach whereby the proposed application method is tested against either HVLP or electrostatic spray application methods in a laboratory or pilot production area, using parts and coatings representative of the process(es) in which the alternative method is to be used. Under this alternative, the laboratory test will use the same part configuration(s) and the same number of parts for both the proposed method and the HVLP or electrostatic spray application methods. The Agency intended to make the laboratory test an additional option instead of replacing the production evaluation in the final rule. Therefore, since no comments were received on the proposed revision to § 63.750(i)(2)(ii), the Agency decided to promulgate this change by designating the proposed § 63.750(i)(2)(ii) as § 63.750(i)(2)(iii). For consistency, this change has also been made to § 63.749 (d)(3)(iii)(B) and (d)(4)(iii)(B).

O. Monitoring Requirements for Dry Particulate Filter Usage

The Agency proposed to clarify the monitoring requirements for owners or operators of depainting and painting

developed using testing based on Method 319. The Agency disagrees with the commenter and believes the filter efficiency limits to be technically based as equivalent to MACT. The test method is based on several years of work performed for EPA and culminated in testing of the two- and three-stage paint arrestors determined to represent MACT for the aerospace industry.

In announcing these revised MACT requirements for particulate emissions, the Agency realizes that there are unique circumstances in which owners and operators have commenced construction or reconstruction of a new spray booth or hangar after the proposed regulation (June 4, 1994) and have had to comply with the requirements in the promulgated rule (September 1, 1995). For these owners or operators of aerospace manufacturing or rework operations who have commenced construction or reconstruction of new spray booth or hanger for inorganic HAP depainting operations, primer, or topcoat operations after June 4, 1994 but prior to October 29, 1996, the EPA has provided the flexibility to meet either the requirements for new sources under § 63.745(g)(2)(ii) of the amendments to the final regulation found in today's notice or the requirements for new sources under § 63.45(g)(2)(iv) of the September 1, 1995 promulgated rule which are found in § 63.745(g)(2)(iii) in the amended rule. Sources that commenced construction prior to June 4, 1994 are still required to meet the existing source requirements for depainting operations and painting (topcoat or primer application) operations found in the final amended rule.

H. Exemption for Waterborne Coatings

The EPA proposed that any waterborne coating for which the manufacturer's supplied data demonstrate that the coating meets the organic HAP and VOC content limits for its coating type as specified in the regulation be exempt from many of the organic HAP and VOC related requirements of this regulation. If the manufacturer's supplied data indicate that the waterborne coating meets the organic HAP and VOC content emission limits for its coating type, as specified in §§ 63.745(c) and 63.747(c), then the owner or operator would not be required to demonstrate compliance for these coatings using the test method specified in § 63.750(c). However, the owner or operator would still be required to maintain purchase records and manufacturer's supplied data sheets for exempt coatings. Owners or operators of facilities using waterborne coatings would also be required to handle and transfer these coatings in a manner that minimizes spills, apply these coatings using one or more of the specified application techniques, and comply with inorganic HAP emission requirements. This exemption was added as § 63.741(i) as follows:

> Any waterborne coating for which the manufacturer's supplied data demonstrate that organic HAP and VOC contents are less than or equal to the organic HAP and VOC content limits for its coating type, as specified in §§ 63.745(c) and 63.747(c), is exempt from the following requirements of this subpart: §§ 63.745(d)–(e), 63.747(d)–(e), 63.749(d) and (h), 63.750(c)–(h) and (k)–(m), 63.752(c) and (f), and 63.753(c) and (e). A facility shall maintain the manufacturer's supplied data and annual purchase records for each exempt waterborne coating readily available for inspection and review, and shall retain these data for 5 years.

Section 63.741(f) was also modified to include § 63.741(i) in the list of additional specific exemptions from regulatory coverage.

The Agency proposed this exemption to streamline and simplify the requirements for owners and operators of facilities using these coatings and to encourage the use of waterborne coatings which may result in lower emissions than other coating types. No comments were received on this issue and EPA decided to promulgate this change.

I. Exemption From Inorganic HAP Requirements for Hand-Held Spray Can Applications

Two commenters noted that the final rule created a point of confusion over the absence of an exemption from inorganic HAP requirements for the use of hand-held spray cans used outside a paint booth or hangar (i.e., touch-up operations). The Agency noted that such an exemption currently exists under § 63.745(f)(3)(v) for primers and topcoats containing organic HAP or VOC, and the requirements for touch-up operations would also provide an exemption for these activities when conducted outside of the hangar or paint booth. However, the Agency agreed with the commenters that potential confusion could result in the absence of a clear exemption under the inorganic HAP requirements. Therefore, the Agency has added the following paragraph (x) to the list of operations in § 63.745(g)(4) not subject to the requirements of paragraphs 63.745 (g)(1) through (g)(3):

> (x) The use of hand-held spray can application methods.

J. Essential Use Exemption for Cleaning Solvents

In accordance with the Montreal Protocol on Substances that Deplete the Ozone Layer ("Montreal Protocol"), EPA has granted essential use allowances for limited applications of ozone depleting substances (ODS's). The EPA proposed that an essential use exemption be added to this rule for cleaning operations that have been identified as essential uses. The proposed language has been revised slightly for greater consistency with the stratospheric ozone regulations. The exemption was added as § 63.744(e)(13) as follows:

> Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.

One commenter concurred with EPA on this added exemption and EPA decided to promulgate this change.

K. Compliance Dates

The EPA wishes to clarify an inconsistency between the preamble to the final rule and the regulation. The preamble to the final aerospace NESHAP states, "Owners or operators of new commercial, civil, or military aerospace OEM and rework operations with initial startup after September 1, 1998 will be required to comply with all requirements upon startup." This statement is incorrect. The text of the promulgated regulation correctly states that new sources, with initial startup on or after September 1, 1995, must comply with all requirements upon startup. In October 1996, the EPA also proposed to clarify that the deadline for approval of an alternate control device is 120 days prior to the compliance date. This clarification, mistakenly omitted from the published final rule, is now reflected in § 63.743(c). No comments were received on this issue and, thus, EPA decided to promulgate this change.

L. Requirements for New Affected Sources (Spray Booths)

The Agency has clarified the requirements for new affected sources. An affected source is an emission unit, process, or operation identified in the NESHAP that is part of the entire facility, but is not necessarily a major source. In today's action the Agency is clarifying its intent that for inorganic HAP emissions, each spray booth or hangar that contains a primer or topcoat application operation subject to § 63.745(g) or a depainting operation

The EPA proposed revising § 63.747(c) to include organic HAP and VOC content limits of 622 grams per liter (g/L) (5.2 pounds per gallon [lb/gal]) as the standard for uncontrolled Type I chemical milling maskants. The EPA proposed revising paragraphs (c)(1) and (2) to specify that the organic HAP and VOC limits of 160 g/L (1.3 lb/gal) apply only to Type II chemical milling maskants. One commenter supported EPA's proposed limits and stated the proposed Type I limit recognizes that some chemical etching applications require the use of solvent-based maskants, while still achieving a significant reduction in VOC and HAP emissions from masking operations.

Due to the addition of a standard for Type I chemical milling maskants, EPA also proposed removing the definition of Type I maskants from the list of specialty coatings in appendix A of this subpart and revising the definition for chemical milling maskant in § 63.742 of the promulgated rule. No comments were received on deletion of the definition for Type I maskants from Appendix A, and comments received on the definition for chemical milling maskant are discussed under definitions in Section II.B of this preamble.

F. Test Method for Determining Filtration Efficiency

The Agency proposed a test method, Method 319, for the determination of filtration efficiency for paint overspray arresters (also referred to as particulate filters). The Agency proposed that this method be used by filter manufacturers to certify their filter efficiency. Commenters raised several issues related to the technical validity of proposed Method 319 and who could run the test. Based on these comments, the Agency has modified § 63.750(o) to state that this method can be used by filter manufacturers or distributors, paint/depainting booth suppliers, or owners or operators of affected sources to certify the efficiency of their filters for meeting the dry particulate filter requirements in today's amendments.

The EPA also proposed filter efficiency tables (Tables 1, 2, 3, and 4 of § 63.745) and one commenter recommended adding descriptive language to the table headings. The EPA added "for existing sources" or "for new sources" to each of the table headings in response to the comment.

TABLE 1 OF § 63.745.—TWO-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>90	>5.7
>50	>4.1
>10	>2.2

TABLE 2 OF § 63.745.—TWO-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>90	>8.1
>50	>5.0
>10	>2.6

TABLE 3 OF § 63.745.—THREE-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.0
>80	>1.0
>65	>0.42

TABLE 4 OF § 63.745.—THREE-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, µm
>95	>2.5
>85	>1.1
>75	>0.70

Three commenters raised several issues related to test Method 319 and disagreed with specifics of the test method. All of the issues are addressed in the Agency's documented responses in Section 2.9 of the Addendum to the BID (Volume II), Document No. EPA 453/R–97–003b. In summary, Method 319 will retain use of oleic acid and potassium chloride (KCl) challenge aerosols. By selecting oleic acid and KCl as simulants for wet and dry overspray, the amount of testing needed is reduced because only two challenge materials are used, particle sizing accuracy is maintained, and safety and handling issues associated with volatile paint components are avoided.

The method has been revised to allow additional flexibility for alternate duct configurations. The 180 degree bend in the duct has been made optional thereby allowing use of a straight duct. Also, the measurement procedures have been revised to allow the use of two particle counters to allow simultaneous sampling (one sampling upstream and one sampling downstream). Additionally, the NESHAP retains equal requirements for "paint overspray arrestors" under § 63.745 Primer and Topcoat Application Operations, and "particulate" filters under § 63.746 Depainting Operations.

G. Standards for Dry Particulate Filters

The Agency proposed to revise MACT requirements for the control of inorganic particulates from certain primer, topcoat, and depainting operations. Based on a review of the available data, the EPA proposed requiring existing sources using particulate filters in depainting as well as topcoat and primer operations, in which any of the coatings contain inorganic HAP, to meet the filtration efficiency established for the two-stage system that was tested. Specifically, the Agency proposed requiring owners or operators of existing sources to use particulate filters that are certified under § 63.750(o) to meet or exceed the efficiency data in Tables 1 and 2 of § 63.745 (developed from the two-stage filter testing). The Agency has modified this language to indicate certification must be consistent with § 63.750(o); therefore, this method can be used by filter manufacturers or distributors, paint/depainting booth suppliers, and/or owners or operators of affected sources to certify the efficiency of their filters.

The Agency also proposed that new sources meet the filtration efficiency data points for the three-stage system that was tested. Specifically, the Agency proposed requiring owners or operators of new sources to use particulate filters that are certified under § 63.750(o) to meet or exceed the efficiency data in Tables 3 and 4 of § 63.745 (developed from the three-stage filter testing). These new filtration requirements reflect a performance based standard rather than specified equipment, thus allowing more flexibility for affected sources to comply with the NESHAP.

One commenter believed that test Method 319 is flawed and therefore questioned the filter efficiency limits

To further clarify the types of chemical milling maskants that are covered by the final rule, the Agency is providing the following separate definitions for Type I and Type II etchants:

Type I etchant means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

Type II etchant means a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

A commenter provided example scenarios in which the current definition of self-priming topcoat is overly restrictive. The commenter further stated that self-priming topcoats should be recognized as topcoats and the topcoat VOC/HAP limits should apply, not the primer limits. The Agency did not agree that the described scenarios are likely to present any problems in determining the appropriate coating category. However, the Agency did agree that removing the last sentence from the definition which stated: "The coating is not subsequently topcoated with any other product formulation" does clarify the definition of self-priming topcoat and makes it more consistent with the definition of topcoat.

Based on additional information received from industry, the EPA proposed in October 1996 to change or add the following definitions:

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses, and other components that are constructed of transparent materials.

Chemical milling maskant application operation means application of chemical milling maskant for use with Type I or Type II chemical milling etchants.

Closed-cycle depainting system means a dust-free, automated process that removes permanent coating in small sections at a time, and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in appendix A to this subpart and in the CTG for Aerospace Manufacturing and Rework Operations (Document No. EPA 453/R–97–004).

Waterborne (water-reducible) coating means any coating that contains more than 5 percent water by weight as applied in its volatile fraction.

No comments were received on these proposed definitions.

Section 63.741(f) has also been modified to include § 63.742 (Definitions) in the list of additional specific exemptions from regulatory coverage.

C. Cleaning Operations

Under the promulgated rule, the standards for cleaning operations could be read to apply to all cleaning operations at a facility, not only to cleaning operations that involve aerospace vehicles, components, or coating equipment. In order to clarify the applicability of the standards for cleaning operations, the Agency proposed to revise § 63.741(c) to limit the applicability of the final rule to the manufacture or rework of aerospace vehicles or components. Other nonaerospace activities (e.g., general facility cleaning) are not subject to the requirements of this rule. No comments were received on this issue and EPA is promulgating the revisions as proposed.

The EPA proposed to replace the word "solvent" with the defined term "cleaning solvent" for clarity and consistency in § 63.744, paragraphs (a), (b), (c), and (e). The EPA has also changed the cleaning rag storage requirement by rewording the first sentence of § 63.744(a)(1) as follows:

Place cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers upon completing their use.

As originally promulgated, this NESHAP required that cleaning rags be stored immediately after use. In October 1996, EPA proposed to remove the word "immediately" from the sentence to make the rule more consistent from a temporal standpoint with the storage requirements contained in the California SIP-approved rules that were the basis for this requirement. No comments were received on these revisions. Accordingly, EPA decided to promulgate this change.

In addition, the EPA has changed the requirements for flush cleaning to cover the situation in which an operator is cleaning multiple items at the same station, without leaving the station. The change to § 63.744(d) is as follows: "* * * empty the used cleaning solvent each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned * * *." This change will better carry out the Agency's intent in regulating flush cleaning. No comments were received on this change.

Based on information from industry, the EPA proposed a modification to the exemption in § 63.744(e)(10). The revised text reads as follows:

Cleaning of aircraft transparencies, polycarbonate, or glass substrates.

No comments were received on this revision.

D. Applicability to Space Vehicles

Space vehicles (i.e., vehicles designed to travel beyond the limit of the earth's atmosphere) are specifically exempted from the requirements of this rule, except for the standards for depainting operations. The EPA proposed (1) removing the reference to these vehicles in § 63.741(f) and (2) adding an additional specific exemption in a new paragraph, § 63.741(h), to clarify the exemption. The EPA proposed § 63.741(h) as follows:

Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters), are exempt from the requirements of this subpart, except for depainting operations found in § 63.746.

One commenter concurred with this revision as an important clarification of the applicability of the rule for aerospace organizations. The EPA decided to promulgate this change to the final rule.

E. Standards for Type I Maskants

The EPA proposed to establish an emission limitation for Type I maskants and to include Type I maskants within the definition of chemical milling maskants. Pursuant to section 114 of the Act, information regarding maskants was requested from nine companies that own or operate aerospace manufacturing and rework facilities. Information was requested for all types of maskants, including total quantity used, formulation data, VOC and organic HAP content as received and as applied, substrate category and the composition of the metal alloy on which the maskant is applied, a listing of the type of parts or specific aircraft surfaces on which the maskant is used, VOC and HAP emissions from maskant application operations, and type(s) of controls (if any). The information received on Type I maskants was used to calculate a MACT floor. The MACT floor was determined to be the weighted (by usage volume) average HAP emissions from the sources, 622 grams per liter [g/L] (5.2 pounds per gallon [lb/gal]).

be proposed in a future **Federal Register** notice.

B. Judicial Review

Under section 307(b)(1) of the Act, judicial review of today's amendments to the NESHAP for aerospace manufacturing and rework facilities is available only on the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this final rule. Under section 307(b)(2) of the CAA, the requirements that are subject to today's notice may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

II. Summary of Major Comments and Changes to the Proposed Amendments to the Rule

A. Corrections to References

In the September 1995 promulgated rule, there were several references to § 63.751(b)(7)(iii), which only existed in an earlier draft of the promulgated rule. The EPA proposed the following revisions in October 1996: § 63.751(b)(6)(ii)(A) of the promulgated rule references (b)(7)(iii)(A)(*3*), but should reference paragraph (b)(6)(iii)(A)(*2*); § 63.751(b)(6)(iii) references (b)(7)(iii)(A), and (b)(7)(iii)(B) or (C), but should reference paragraphs (b)(6)(iii)(A), and (b)(6)(iii)(B) or (C); § 63.751(b)(6)(iii)(A)(*2*) references (b)(7)(iii)(A)(*1*), but should reference paragraph (b)(6)(iii)(A)(*1*); § 63.751(b)(6)(iii)(D) references (b)(7)(iii)(B) or (C), but should reference paragraph (b)(6)(iii)(B) or (C). There were no comments on these proposed revisions.

B. Definitions

The October 29, 1996 **Federal Register** notice contained several definitions to be added to § 63.742 and several to be revised, based on additional information submitted to the Agency after promulgation of the final rule. These changes are summarized below.

The definition of cleaning solvent in the promulgated rule stated that "cleaning solvent" did not include solutions that contained "no" HAP or VOC. Many aqueous cleaners contain negligible amounts of HAP or VOC. The EPA wants to encourage the use of these aqueous cleaners. Therefore, in October 1996 the EPA proposed the following language to exclude cleaners containing de minimis levels of HAP or VOC from the definition of cleaning solvent: "Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) (e.g., water or acetone)." The EPA also proposed to change the applicable portion of § 63.741(f) to read: "The requirements of this subpart also do not apply to primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP and VOC at a concentration less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations." One commenter stated that not all HAP's are VOC's, nor are all VOC's HAP's. If the "and" is used, then one could read § 63.741(f) to require both VOC's and HAP's to be present for an exemption to apply. The commenter recommended using "and/or" which is unacceptable because it would create an exemption when both HAP and VOC were present, but only one was below the specified level. It is not the Agency's position that both HAP and VOC need be present for the exemption described in § 63.741(f) to apply.

The proposed definition also contained a parenthetical reference to water or acetone as examples of substances that might be present at a de minimis level. One commenter stated the parenthetical reference to water or acetone is confusing and should be deleted. The EPA agreed and has revised the definition as follows:

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f).

The Agency also proposed adding a definition for antique aerospace vehicle or component so that these vehicles and components would be exempted from the regulation. One commenter supported the proposed definition. Another commenter suggested revising the definition to include those nonflight worthy aircraft intended for permanent display, or used for static manufacturing technology demonstrations. The commenter indicated that the definition in 14 CFR 45.22 is limited to operational, flight worthy aircraft used in exhibitions (motion pictures, television productions or air shows). The EPA believes that the passage to which the commenter refers actually concerns "exhibition" rather than "antique" aircraft. It was not EPA's intent to add an exemption for exhibition aircraft that do not meet the "antique aircraft" definition. In addition, EPA believes that it is not necessary to expand the scope of the "antique aircraft" definition because the Agency interprets the definition as including aircraft built at least 30 years ago that are not currently flightworthy. Therefore, EPA is promulgating the definition of antique aircraft as set forth in the proposal with some clarification (i.e., simplification) as follows:

Antique aerospace vehicle or component means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

Due to the proposed addition of a standard for Type I chemical milling maskants, EPA proposed revising the definition for chemical milling maskant. One commenter noted that in the proposed definition, listed examples should be made identical to the listed names for these maskants found in appendix A to subpart GG. Another commenter raised the issue of exempting chemical milling maskants used for two different types of chemical milling applications. The commenter stated the same maskant can be used in aluminum chemical milling and titanium chemical milling, but these applications are not used on the same part or subassembly. A maskant used for both aluminum chemical milling and titanium chemical milling could not meet the low VOC content limits. In an existing plating shop which uses the same maskant tanks for two chemical milling applications, the proposed definition and associated maskant limits would require the addition of a new maskant tank to meet the low VOC maskant limit and another tank to meet the critical use applications. This might result in an increase in emissions since the surface area of the maskant in the tanks would double. The EPA agreed that the commenters' changes are reasonable because the purpose of the rule is to reduce HAP emissions and that adding a new maskant tank would likely increase HAP emissions in the aggregate. The definition has been revised as follows:

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or Type II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are also exempt from this subpart. (See also Type I and Type II etchant definitions.)

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Heather Rooney, U.S. EPA Region VIII, Air Toxics Coordinator, 999 18th Street, Suite 500, Denver, CO 80202–2466, (303) 312–6971

Region IX

Nikole Reaksecker, U.S. EPA Region IX, Air Division-6, 75 Hawthorne Street, San Francisco, CA 94105, (415) 744–1187

Region X

Andrea Wullenweber, U.S. EPA Region X, Air Toxics Coordinator, 1200 Sixth Avenue, Seattle, WA 98101, (206) 553–8760

These amendments to the rule will not change the basic control requirements of the rule or the level of health protection it provides. The rule requires new and existing major sources to control emissions of hazardous air pollutants to the level reflecting application of the maximum achievable control technology.

In addition, the EPA announces the availability of a final control techniques guideline (CTG) document for control of volatile organic compound (VOC) emissions from aerospace manufacturing and rework facilities. This document has been prepared in accordance with section 183(b)(3) of the Clean Air Act Amendments of 1990 (the "Act") to assist States in analyzing and determining reasonably available control technology (RACT) for stationary sources of VOC emissions located within ozone national ambient air quality standard nonattainment areas. The final document recommends RACT for industries included in, but not limited to, 10 Standard Industrial Classification (SIC) codes: SIC 3720, Aircraft and Parts; SIC 3721, Aircraft; SIC 3724, Aircraft Engines and Engine Parts; SIC 3728, Aircraft Parts and Equipment; SIC 3760, Guided Missiles, Space Vehicles, and Parts; SIC 3761, Guided Missiles and Space Vehicles; SIC 3764, Space Propulsion Units and Parts; SIC 3769, Space Vehicle Equipment; SIC 4512, Scheduled Air Transportation; and SIC 4581, Airports, Flying Fields, and Services.

(As of January 1, 1997, a new numerical coding system for classifying industries has been implemented by the U.S. Census Bureau. The new system is called the North American Industrial Classification System—NAICS. The following list of affected industries was developed as a cross-reference to the above SIC codes: NAICS 336411, Aircraft Manufacturing; NAICS 336412, Aircraft Engine and Engine Parts Manufacturing; NAICS 336413, Other Aircraft Part and Auxiliary Equipment Manufacturing; NAICS 336414, Guided Missile and Space Vehicle Manufacturing; NAICS 336419, Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing; NAICS 481111, Scheduled Passenger Air Transportation; and NAICS 481112, Scheduled Freight Air Transportation.)

The information presented below is organized as follows:

I. Background
  A. Public Comment on the October 29, 1996 Proposal
  B. Judicial Review
II. Summary of Major Comments and Changes to the Proposed Amendments to the Rule
  A. Corrections to References
  B. Definitions
  C. Cleaning Operations
  D. Applicability to Space Vehicles
  E. Standards for Type I Maskants
  F. Test Method for Determining Filtration Efficiency
  G. Standards for Dry Particulate Filters
  H. Exemption for Waterborne Coatings
  I. Exemption From Inorganic HAP Requirements for Hand-Held Spray Can Applications
  J. Essential Use Exemption for Cleaning Solvents
  K. Compliance Dates
  L. Requirements for New Affected Sources (Spray Booths)
  M. Emissions Averaging
  N. Requirements for New and Existing Primer and Topcoat Application Operations
  O. Monitoring Requirements for Dry Particulate Filter Usage
  P. Depainting Operations
  Q. Applicability of General Provisions
  R. Specialty Coatings
  S. Miscellaneous Changes
  T. Technical Corrections
III. Control Techniques Guideline
IV. Administrative Requirements
  A. Docket
  B. Paperwork Reduction Act
  C. Executive Order 12866
  D. Regulatory Flexibility Act
  E. Submission to Congress
  F. Unfunded Mandates Reform Act

I. Background

National emission standards for hazardous air pollutants for aerospace manufacturing and rework facilities were proposed under Section 112(d) of the Clean Air Act Amendments of 1990 (the "Act") in the **Federal Register** on June 6, 1994 (59 FR 29216). Public comments were received regarding the standards and the final NESHAP was promulgated in the **Federal Register** on September 1, 1995 (60 FR 45948). After promulgation of the final rule, several issues were raised by various industry representatives and affected parties. Based on discussions with the commenters, the Agency proposed actions to amend §§ 63.741, 63.742, 63.743, 63.744, 63.745, 63.746, 63.747, 63.749, 63.750, 63.751, 63.752 and 63.753 of subpart GG of 40 CFR part 63. These sections deal with applicability, definitions, general standards, cleaning operations, topcoat and primer application operations, depainting operations, chemical milling maskant application operations, compliance dates and determinations, test methods and procedures, monitoring requirements, recordkeeping requirements, and reporting requirements. These changes provide additional flexibility to the regulated community and in several instances, clarify/correct errors in the regulatory text.

A. Public Comment on the October 29, 1996 Proposal

Eighteen comment letters were received on the October 29, 1996 **Federal Register** document that proposed changes to the rule. The proposed changes covered a variety of issues and many of the comment letters were supportive of the amendments. A few other comment letters also included suggested editorial revisions to further clarify some aspects of the proposed amendments or to address oversights in the proposed amendments. The EPA considered these suggestions and, where appropriate, made changes to the proposed amendments. The significant issues raised and the changes to the proposed amendments are summarized in this preamble. More detailed responses are provided in an addendum to the background information document (BID) volume II which can be found in Docket A–92–20, document No. EPA 453/R–97–003b. Some of the comment letters also included numerous issues not covered in the October 29, 1996 proposal. The EPA reviewed and responded to each of these in the addendum to the BID; any resulting changes to the final rule will

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[AD–FRL–5978–4]

RIN 2060–AE02

National Emission Standards for Hazardous Air Pollutants and Control Techniques Guideline Document for Source Categories: Aerospace Manufacturing and Rework Facilities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule and release of final control techniques guideline (CTG) document.

SUMMARY: This action finalizes several amendments to the national emission standards for hazardous air pollutants (NESHAP) for aerospace manufacturing and rework facilities proposed in the **Federal Register** on October 29, 1996 (61 FR 55842). The amendments include: Corrections to several references in the rule; revisions and additions to definitions; clarification of the applicability of the cleaning operations standards; clarification of the applicability of the rule to space vehicles; addition of standards for Type I chemical milling maskants; addition of a test method for determining the filtration efficiency of dry particulate filters; revision of standards for new and existing sources using dry particulate filters to control emissions from topcoat and primer application and depainting operations; addition of an exemption for certain water-reducible coatings; addition of an exemption from inorganic HAP requirements for hand-held spray can applications; addition of an essential use exemption for cleaning solvents; clarification of compliance dates; clarification of the applicability of new source MACT to spray booths; clarification and addition of emissions averaging provisions; revision of the requirements for new and existing primer and topcoat application operations; clarification of monitoring requirements for dry particulate filter usage; revision of the standard for depainting operations; addition of a cross reference to requirements in the General Provisions in subpart A of part 63; addition of appendix A to this subpart containing definitions for specialty coatings; miscellaneous changes to the proposed amendatory language; and minor technical corrections, including correction of the OMB tracking number in 40 CFR part 9 (Section 9.1), that were not part of the October 29, 1996 proposal. Today's action takes final action on all of these amendments.

EFFECTIVE DATE: March 27, 1998.

ADDRESSES: *Control Techniques Guideline.* Copies of the final CTG may be obtained from the U. S. EPA Library (MD–35), Research Triangle Park, NC 27711; telephone (919) 541–2777.

An electronic version of documents from the Office of Air and Radiation (OAR) are available through EPA's OAR Technology Transfer Network Web site (TTNWeb). The TTNWeb is a collection of related Web sites containing information about many areas of air pollution science, technology, regulation, measurement, and prevention. The TTNWeb is directly accessible from the Internet via the World Wide Web at the following address, "http://www.epa.gov/ttn". Electronic versions of this preamble and rule are located under the OAR Policy and Guidance Information Web site, "http://www.epa.gov/ttn/oarpg/", under the Recently Signed Rules section. If more information on the TTNWeb is needed, contact the Systems Operator at (919) 541–5384.

FOR FURTHER INFORMATION CONTACT: For information concerning this notice and analyses performed in developing this rule, contact Ms. Barbara Driscoll, Policy Planning and Standards Group, Emission Standards Division (MD–13), U. S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number (919) 541–0164. For implementation issues (guidance documents), contact Ms. Ingrid Ward, Program Review Group, Information Transfer and Program Integration Division (MD–12), U. S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541–0300. For information concerning applicability and rule determinations, contact your State or local representative or the appropriate EPA regional representative. For a listing of EPA regional contacts, see the following **SUPPLEMENTARY INFORMATION** section.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are owners or operators of facilities that are engaged, either in part or in whole, in the manufacturing or rework of commercial, civil, or military aerospace vehicles or components and that are major sources as defined in § 63.2 of this part. Regulated categories include:

Category	Examples of regulated entities
Industry	Facilities that are major sources of hazardous air pollutants and manufacture, rework, or repair aircraft such as airplanes, helicopters, missiles, rockets, and space vehicles.
Federal Government	Federal facilities that are major sources of hazardous air pollutants and manufacture, rework, or repair aircraft such as airplanes, helicopters, missiles, rockets, and space vehicles.

This table is not intended to be exhaustive, but rather it provides a guide for readers regarding entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility [company, business, organization, etc.] is regulated by this action, you should carefully examine the applicability criteria in § 63.741 of the NESHAP for aerospace manufacturing and rework facilities promulgated in the **Federal Register** on September 1, 1995 (60 FR 45948). If you have questions regarding the applicability of this action to a particular entity, contact the appropriate regional representative:

Region I

NESHAP (MACT) Coordinator, U.S. EPA Region I, John F. Kennedy Federal Building, One Congress Street, Boston, MA 02203–001, (617) 565–3438

Region II

Umesh Dholakia or Yue-On Chiu, U.S. EPA Region II, 290 Broadway Street, New York, NY 10007–1866, (212) 637–4023 (Umesh), (212) 637–4065 (Yue-On)

Region III

Bernard Turlinski, U.S. EPA Region III, 841 Chestnut Building, Philadelphia, PA 19107, (215) 566–2150

Region IV

Leonardo Ceron, U.S. EPA Region IV, Atlanta Federal Center, 61 Forsyth Street SW, Atlanta, GA 30303–3104, (404) 562–9129

Federal Register

Friday
March 27, 1998

Part II

Environmental Protection Agency

40 CFR Parts 9 and 63
Aerospace Manufacturing and Rework Facilities; National Emission Standards for Hazardous Air Pollutants and Control Techniques Guideline Document for Source Categories; Final and Proposed Rules

Register of March 10, 1998, regarding the filing of revised informational tariffs by operator services providers.

DATES: Effective March 31, 1998.

FOR FURTHER INFORMATION CONTACT: Adrien Auger, Enforcement Division, Common Carrier Bureau, (202) 418–0960.

SUPPLEMENTARY INFORMATION: The FCC published a document in the **Federal Register** on March 10, 1998, FCC 98–9 (63 FR 11612) FR Doc. No. 98–6088. This document corrects § 64.709(e)(2) on page 11617, in the third column, to read as follows:

§ 64.709 [Corrected]

* * * * *

(e) * * *

(2) Revised tariffs shall be filled pursuant to the procedures specified in this section.

Dated: March 24, 1998.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 98–8184 Filed 3–30–98; 8:45 am]

BILLING CODE 6712–01–M

DEPARTMENT OF DEFENSE

48 CFR Parts 204, 212, and 252

[DFARS Case 97–D005]

Defense Federal Acquisition Regulation Supplement; Central Contractor Registration

AGENCY: Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: The Director of Defense Procurement has issued a final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to require contractor registration in the DoD Central Contractor Registration database prior to award of any contract, basic agreement, basic ordering agreement, or blanket purchase agreement, unless the award results from a solicitation issued on or before May 31, 1998. This rule more efficiently implements the Debt Collection Improvement Act of 1996.

EFFECTIVE DATE: March 31, 1998.

FOR FURTHER INFORMATION CONTACT: Ms Sandra G. Haberlin, PDUSD (A&T) DP (DAR), IMD 3D139, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0131; telefax (703) 602–0350. Please cite DFARS Case 97–D005.

SUPPLEMENTARY INFORMATION:

A. Background

The President's Management Council's Electronic Processes Initiatives Committee recently issued a strategic plan for electronic Federal purchasing and payment. The plan identifies three options currently available to agencies for collecting and managing contractor information: (1) Through a central registry, in which contractors could centrally provide information for multiple contracts; (2) through financial intermediaries (networks), that could collect and maintain information on network members; and (3) on a contract-by-contract basis. At this time, DoD has elected to use a Central Contractor Registration (CCR) database to collect and manage contractor information—including taxpayer identification numbers (TINs) and electronic funds transfer (EFT) information required by the Debt Collection Improvement Act of 1996 (Pub. L. 104–134). Recognizing that technology and the marketplace are dynamic, DoD will continue to assess its registration policy in light of changes in market conditions and advances in technology.

This final rule requires contractor registration in a DoD CCR database prior to award of a contract, basic agreement, basic ordering agreement, or blanket purchase agreement, unless the award results from a solicitation issued on or before May 31, 1998. The rule requires that contractors register on a one-time basis, and confirm on an annual basis that their CCR registration is accurate and complete. The objectives of this rule are (1) to more efficiently comply with Public Law 104–134 by using a central DoD repository to collect statutorily required TINs and EFT information; (2) to simplify and streamline procurement by presenting "one DoD face to industry," and, thereby, eliminate duplicate requirements and processes; and (3) to increase visibility of vendor sources for specific supplies and services.

A proposed rule was published in the **Federal Register** on September 15, 1997 (62 FR 48200). All comments received in response to the proposed rule were considered in the development of the final rule. The final rule differs from the proposed rule in that it (1) revises the date after which prospective contractors must be registered in the CCR database, from March 31, 1998, to May 31, 1998; (2) adds paragraph 204.7303(d) to require the contracting officer to transmit either the Commercial and Government Entity code or the Data Universal Numbering System number to the payment office; and (3) makes editorial changes for clarification.

B. Regulatory Flexibility Act

A Final Regulatory Flexibility Analysis (FRFA) has been performed. The analysis is summarized as follows:

This final rule requires contractors to register in the CCR database by providing certain business information, including TINs and EFT information required by the Debt Collection Improvement Act of 1996 (Pub. L. 104–134). Subsequent to the initial registration, contractors will only be required to confirm on an annual basis that their CCR registration is accurate and complete. All small entities will be subject to the rule unless their contract or agreement falls within one of the five exceptions cited in DFARS 204.7302.

An issue raised by one respondent was that the rule will delay the award of contracts to small business vendors that are unaware of the CCR requirements. It is unlikely that a prospective awardee will be unaware of the registration requirement at the time of contract award since the clause requiring CCR registration will be included in solicitations issued after May 31, 1998. In addition, since the goal of DoD is to process each vendor's registration application within 48 hours after receipt, it is unlikely that the registration requirement of the rule will delay a significant number of contract awards.

The one significant alternative that was considered was to exclude small entities from the requirements of this rule. The requirements of Public Law 104–134 would still be accomplished by existing regulations. The conclusion was that this alternative, while fulfilling the objective of Public Law 104–134, does not minimize the economic impact on small entities since existing regulations require a contractor to submit, for every contract, the same information to various contracting or payment offices.

Since this final rule eliminates certain redundant requirements, and their resulting administrative burdens, this alternative of excluding small entities from the requirements of this rule was rejected.

A copy of the FRFA may be obtained from the Defense Acquisition Regulations Council, PDUSD (A&T) DP (DAR), 3062 Defense Pentagon, Washington, DC 20301–3062. Please cite DFARS Case 97–D005 in all correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) applies, because the

The EPA has determined that this direct final rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

E. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. This rule is not a major rule as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: March 23, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, part 63 of chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart JJJ—National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins

2. Section 63.1311 is amended by revising paragraph (c) introductory text to read as follows:

§ 63.1311 Compliance schedule and relationship to existing applicable rules.

* * * * *

(c) Existing affected sources shall be in compliance with this subpart (except for § 63.1331 for which compliance is covered by paragraph (d) of this section) no later than September 12, 1999, as provided in § 63.6(c), unless an extension has been granted as specified in paragraph (e) of this section, except that the compliance date for the provisions contained in 40 CFR 63.1329 is temporarily extended from September 12, 1999, to February 27, 2001, for existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET using a continuous terephthalic acid high viscosity multiple end finisher process.

* * * * *

[FR Doc. 98–8212 Filed 3–30–98; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Part 413

[HCFA–1808–CN]

RIN 0938–AG70

Medicare and Medicaid Programs; Salary Equivalency Guidelines for Physical Therapy, Respiratory Therapy, Speech Language Pathology, and Occupational Therapy Services; Revised Effective Date and Technical Correction

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Final rule; delay of effective date and correction.

SUMMARY: This document delays the effective date of the final rule on salary equivalency guidelines, published in the **Federal Register** (63 FR 5106) on January 30, 1998, from April 1, 1998 to April 10, 1998. In addition, we are making a technical correction in the preamble to the January 30, 1998 final rule.

EFFECTIVE DATES: The effective date of the final rule published at 63 FR 5106 is April 10, 1998. The technical correction is effective April 10, 1998.

FOR FURTHER INFORMATION CONTACT: Jackie Gordon, (410) 786–4517.

SUPPLEMENTARY INFORMATION: On January 30, 1998, we issued a final rule in the **Federal Register** (63 FR 5106) that set forth revisions to the salary equivalency guidelines for Medicare payment for the reasonable costs of physical therapy and respiratory therapy services furnished under arrangements by an outside contractor. This final rule also set forth new salary equivalency guidelines for Medicare payment for the reasonable costs of speech language pathology and occupational therapy services furnished under arrangements by an outside contractor. The guidelines do not apply to inpatient hospital services and hospice services. The guidelines will be used by Medicare fiscal intermediaries to determine the maximum allowable cost of those services. We announced that the effective date for this final rule would be April 1, 1998.

Revised Effective Date

This rule is a major rule as defined in Title 5, United States Code, section 804(2). Pursuant to 5 U.S.C. 801(a)(3), this rule may not take effect until 60 days after the report required by that section is submitted to Congress. The report for this rule was submitted to Congress on February 10, 1998. Therefore, the earliest date this rule can become effective is April 10, 1998.

Technical Correction

In the January 30, 1998 final rule (63 FR 5106) on page 5108, first column, beginning in the sixth line, the phrase "Medicare beneficiaries whose nursing home stays are not paid by Medicare" is corrected to read "Medicare SNF residents who are not in a covered Part A stay".

Authority: Secs. 1102, 1861(v)(1)(A), and 1871 of the Social Security Act (42 U.S.C 1302, 1395x(v)(1)(A), and 1395hh).

(Catalog of Federal Domestic Assistance Program No. 93.773 Medicare—Hospital Insurance Program and Program No. 93.774, Medicare—Supplementary Medical Insurance Program)

Dated: March 3, 1998.

Nancy-Ann Min DeParle,

Administrator, Health Care Financing Administration.

Dated: March 26, 1998.

Donna E. Shalala,

Secretary.

[FR Doc. 98–8502 Filed 3–30–98; 8:45 am]

BILLING CODE 4120–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 64

[CC Docket 92–77; FCC 98–9]

Billed Party Preference for InterLATA 0+ Calls; Correction

AGENCY: Federal Communications Commission.

ACTION: Final rule; correction.

SUMMARY: This document corrects a final rule published in the **Federal**

9944 (February 27, 1998). Following completion of reconsideration, any subsequent curative rulemaking will also include consideration of the appropriate compliance date for any revised standard. This temporary extension applies only to existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process. It does not affect any other provisions of the rule or any other source categories or subcategories.

By this action, the EPA is providing, pursuant to Clean Air Act section 301(a)(1), a temporary extension of the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329, only as necessary to complete reconsideration and potential revision of the rule. The EPA intends to complete its reconsideration of the rule and, following the notice and comment procedures of Clean Air Act section 307(d), take appropriate action as expeditiously as practical. The EPA does not believe this temporary extension will, as a practical matter, impact the overall effectiveness of the rule.

Following the EPA's reconsideration of the rule, the EPA will establish a new compliance date for the provisions contained in 40 CFR 63.1329 that is most likely to be beyond the current compliance date of September 12, 1999. Such an extension beyond September 12, 1999 is likely to be necessary for the following reasons. As discussed earlier, if the EPA finds that the continuous TPA high viscosity multiple end finisher subcategory is not justified, existing affected sources in this subcategory will be subject to a PCCT performance standard that has yet to be determined. Development of any such standard will include evaluation of how much time will be needed for compliance. On the other hand, if the EPA finds that the continuous TPA high viscosity multiple end finisher subcategory is justified, existing affected sources in this subcategory will be subject to the current PCCT standard but will have lost considerable time in preparing for compliance by the September 12, 1999 compliance date. In such a case additional time beyond the September 12, 1999 compliance date may be required.

II. Authority for Temporary Extension of the Compliance Date and Reconsideration

The temporary extension of the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process is being undertaken pursuant to Clean Air Act section 301(a)(1). Reconsideration is being undertaken pursuant to Clean Air Act section 307(d)(7)(B). Reconsideration is appropriate if the grounds for an objection arose after the period for public comment and if the objection is of central relevance to the outcome of the rule.

The grounds for reconsideration of this rule arose after publication of the final rule. Therefore, the EPA is providing a temporary extension of the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process in order to allow time to reconsider the issues raised by the petitioner. This reconsideration was undertaken pursuant to Clean Air Act section 307(d)(7)(B).

III. Impacts

The extension of the compliance date for PCCTs at existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process will not affect the eventual annual estimated emissions reduction or the control cost for the rule.

IV. Administrative

A. Paperwork Reduction Act

For the Group IV Polymers and Resins NESHAP, the information collection requirements were submitted to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*. The OMB approved the information collection requirements and assigned OMB control number 2060–0351. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations are listed in 40 CFR Part 9. The EPA has amended 40 CFR Part 9, Section 9.1, to indicate the information collection requirements contained in the Group IV Polymers and Resins NESHAP.

This action has no impact on the information collection burden estimates made previously. Therefore, the ICR has not been revised.

B. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether the regulatory action is "significant" and therefore, subject to OMB review and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The direct final rule will provide a temporary extension of the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process. The direct final rule does not add any additional control requirements. Therefore, this direct final rule was classified "non-significant" under Executive Order 12866 and was not required to be reviewed by OMB.

C. Regulatory Flexibility

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant impact on a substantial number of small entities because the temporary compliance extension would not impose any economic burden on any regulated entities.

D. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under Section 205, the EPA must select the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

20460. The EPA requests that a separate copy also be sent to the contact person listed below. Comments and data may also be submitted electronically by following the instructions provided in the SUPPLEMENTARY INFORMATION section. No Confidential Business Information (CBI) should be submitted through electronic mail.

Docket

The official record for this rulemaking has been established under docket number A–92–45 (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments and data, which does not include any information claimed as CBI, is available for inspection between 8 a.m. and 4 p.m., Monday through Friday, excluding legal holidays. The official rulemaking record is located at the address in the ADDRESSES section. Alternatively, a docket index, as well as individual items contained within the docket, may be obtained by calling (202) 260–7548 or (202) 260–7549. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Rosensteel, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5608.

SUPPLEMENTARY INFORMATION: *Electronic Filing.* Electronic comments and data can be sent directly to EPA at: a-and-r-docket@epamail.epa.gov. Electronic comments and data must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on diskette in WordPerfect 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number A–92–45. Electronic comments may be filed online at many Federal Depository Libraries.

Electronic Availability

This document is available in docket number A–92–45 or by request from the EPA's Air and Radiation Docket and Information Center (see ADDRESSES), and is available for downloading from the Technology Transfer Network (TTN), the EPA's electronic bulletin board system. The TTN provides information and technology exchange in various areas of emissions control. The service is free, except for the cost of a telephone call. Dial (919) 541–5742 for up to a 14,000 baud per second modem. For further information, contact the TTN HELP line at (919) 541–5348, from 1:00 p.m. to 5:00 p.m., Monday through Friday, or access the TTN web site at: www.epa.gov/ttn/oarpg/rules.html.

Regulated entities. Regulated categories and entities include:

Category	Examples of regulated entities
Industry	Facilities that produce PET using the continuous TPA high viscosity multiple end finisher process.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities regulated by the NESHAP addressed in this direct final rule. If you have questions regarding the applicability of the NESHAP addressed in this direct final rule to a particular entity, consult the person listed in the preceding FOR FURTHER INFORMATION CONTACT section.

The information presented in this preamble is organized as follows:

I. Background and Rationale
II. Authority for Temporary Extension of the Compliance Date and Reconsideration
III. Impacts
IV. Administrative Requirements

I. Background and Rationale

On September 12, 1996, the EPA published 40 CFR part 63, subpart JJJ—Group IV Polymers and Resins NESHAP (61 FR 48208). The final rule established a new subcategory for PET manufacture specified as the continuous TPA high viscosity multiple end finisher subcategory. The final rule also established standards for process contact cooling towers (PCCT) contained in 40 CFR 63.1329 for existing affected sources in the new subcategory. The final rule required existing affected sources in the continuous TPA high viscosity multiple end finisher subcategory to comply with 40 CFR 63.1329 beginning September 12, 1999 (*see* 40 CFR 63.1311(c)).

A petition has been submitted to the EPA requesting reconsideration of the technical basis for establishment of the continuous TPA high viscosity multiple end finisher subcategory (Docket Item: A–92–45; VI–A–1). The petition presents new information related to the production processes for the manufacture of PET that the petitioner claims calls into question the need and justification for a separate subcategory for the continuous TPA high viscosity multiple end finisher process. The information presented in the petition has led the EPA to accept the petitioner's request to reconsider the need for the continuous TPA high viscosity multiple end finisher subcategory. When compared to the other PET subcategories, there are two regulatory differences that pertain to affected sources in the continuous TPA high viscosity multiple end finisher subcategory; exemption from the equipment leaks provisions contained in 40 CFR 63.1331 and requirements to limit the concentration of ethylene glycol in PCCTs for existing affected sources under the provisions contained in 40 CFR 63.1329. Because affected sources in the continuous TPA high viscosity multiple end finisher subcategory are exempt from the equipment leaks provisions, no action is required by the EPA with regards to the equipment leaks provisions in response to the request to reconsider. However, as a result of the EPA's need to respond to the request to reconsider the need for the continuous TPA high viscosity multiple end finisher subcategory, existing affected sources in this subcategory cannot be certain of the final standards for PCCTs. If the EPA finds that the continuous TPA high viscosity multiple end finisher subcategory is not justified, existing affected sources in this subcategory will be subject to a PCCT performance standard that has yet to be determined. If the EPA finds that the continuous TPA high viscosity multiple end finisher subcategory is justified, existing affected sources in this subcategory will be subject to the current PCCT standard, but owners or operators will have lost considerable time in preparing for compliance.

At this time, representatives of one existing affected source in the continuous TPA high viscosity multiple end finisher subcategory have informed the EPA in writing (Docket Item: A–92–45; VI–D–8) that they are on the verge of committing to capital expenditures to purchase equipment necessary to comply with the current PCCT standard. Because of the uncertainty of the final standards for PCCTs and the impending need to commit to capital expenditures, representatives of this existing affected source have requested temporary relief from the PCCT standard. For these reasons, the EPA is providing a temporary extension of the compliance date specified in 40 CFR 63.1311(c) from September 12, 1999, until February 27, 2001, for the provisions contained in 40 CFR 63.1329 for existing affected sources producing PET using the continuous TPA high viscosity multiple end finisher process to allow the EPA to fully evaluate the petition for reconsideration and take any curative regulatory action necessary. The new compliance date is 3 years from the effective date of the rule. See 63 FR

CALIFORNIA—CARBON MONOXIDE

Designated area	Designation		Classification	
	Date[1]	Type	Date[1]	Type
Bakersfield Area:				
Kern County (part)	April 30, 1998	Attainment.		
Bakersfield Metropolitan Area (Urbanized part)				
Chico Area:				
Butte County (part)	April 30, 1998	Attainment.		
Chico Urbanized Area (Census Bureau Urbanized part).				
Fresno Area:				
Fresno County (part)	April 30, 1998	Attainment.		
Fresno Urbanized Area				
Lake Tahoe North Shore Area:				
Placer County (part)	April 30, 1998	Attainment.		
* * * * *				
Lake Tahoe South Shore Area:				
El Dorado County (part)	April 30, 1998	Attainment.		
Modesto Area:				
Stanislaus County (part)	April 30, 1998	Attainment.		
Modesto Urbanized Area (Census Bureau Urbanized Area).				
Sacramento Area:				
Census Bureau Urbanized Areas	April 30, 1998	Attainment.		
Placer County (part)				
Sacramento County (part)				
Yolo County (part)				
San Diego Area:				
San Diego County (part)	April 30, 1998	Attainment.		
San Francisco-Oakland-San Jose Area:				
Urbanized Areas	April 30, 1998	Attainment.		
Alameda County (part)				
Contra Costa County (part)				
Marin County (part)				
Napa County (part)				
San Francisco County				
San Mateo County (part)				
Santa Clara County (part)				
Solano County (part)				
Sonoma County (part)				
Stockton Area:				
San Joaquin County (part)	April 30, 1998	Attainment.		
Stockton Urbanized Area:				
* * * * *				

[1] This date is November 15, 1990, unless otherwise noted.

* * * * *

[FR Doc. 98–8416 Filed 3–30–98; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–5988–5]

RIN 2060–AH47

National Emission Standards for Hazardous Air Pollutants Emissions: Group IV Polymers and Resins

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule; extension of compliance.

SUMMARY: On September 12, 1996, the EPA published the Group IV Polymers and Resins NESHAP (61 FR 48208). This action temporarily extends the compliance date specified in 40 CFR 63.1311(c) for the provisions contained in 40 CFR 63.1329 for existing affected sources producing poly(ethylene terephthalate) (PET) using the continuous terephthalic acid (TPA) high viscosity multiple end finisher process because the EPA is in the process of responding to a request to reconsider relevant portions of the rule (Docket Item: A–92–45; VI–A–1). The EPA is providing this temporary extension to February 27, 2001 to complete reconsideration and any necessary revision to the rule. The EPA is providing this temporary extension pursuant to Clean Air Act section 301(a)(1).

DATES: The direct final rule will become effective May 20, 1998 without further notice unless the Agency receives relevant adverse comments on the parallel notice of proposed rulemaki by April 30, 1998. Should the Agenc receive such comments, it will publi a document informing the public tha this rule did not take effect. If relevar adverse comments are received on th proposal, they will be addressed in a subsequent final rule. For additional information concerning comments, se the parallel proposal notice found in Proposed Rules Section of this Federa Register.

ADDRESSES: *Comments.* Comments should be submitted (in duplicate, if possible) to: Air and Radiation Docke and Information Center (6102), Attention Docket Number A–92–45 (docket section below), room M–1500 U.S. Environmental Protection Agenc 401 M Street, SW, Washington, D.C.

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 600 *et seq.*, EPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities. 5 U.S.C. 603 and 604. Alternatively, EPA may certify that the rule will not have a significant impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

SIP approvals and redesignation to attainment under sections 107, 110, and subchapter I, part D of the Clean Air Act do not create any new requirements. Therefore, because the Federal SIP approval and redesignation to attainment do not impose any new requirements, the Administrator certifies that the actions do not have a significant impact on any small entities affected. Moreover, due to the nature of the Federal-State relationship under the CAA, preparation of a flexibility analysis would constitute Federal inquiry into the economic reasonableness of state action. The Clean Air Act forbids EPA to base its actions concerning SIPs on such grounds. *Union Electric Co.* v. *U.S. EPA*, 427 U.S. 246, 255–66 (1976); 42 U.S.C. 7410(a)(2).

C. Unfunded Mandates

Under Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to private sector, of $100 million or more. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

EPA has determined that the approval and redesignation action promulgated does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This Federal action approves pre-existing requirements under State or local law and redesignates areas to attainment, and imposes no new Federal requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

D. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register.** This rule is not a "major" rule as defined by 5 U.S.C. 804(2).

E. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by June 1, 1998. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements, Transportation.

40 CFR Part 81

Air pollution control, National parks.

Note: Incorporation by reference of the State Implementation Plan for the State of California was approved by the Director of the Federal Register on July 1, 1982.

Dated: March 4, 1998.

Felicia Marcus,

Regional Administrator, Region IX.

Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart F—California

2. Section 52.220 is amended by adding paragraphs (c)(252) and (253) to read as follows:

§ 52.220 Identification of plan.

* * * * *

(c) * * *

(252) Air Quality Management Plan for the following APCD was submitted on December 28, 1992, by the Governor's designee.

(i) Incorporation by reference. (A) San Joaquin Valley Unified Air Pollution Control District.

(*1*) Federal 1992 Air Quality Attainment Plan for Carbon Monoxide and Appendices adopted on November 18, 1992.

(253) Carbon Monoxide Redesignation Request and Maintenance Plan for ten federal planning areas submitted on July 3, 1996, by the Governor's designee.

(i) Incorporation by reference.

(A) California Air Resources Board. (*1*) Carbon Monoxide Redesignation Request and Maintenance Plan for the following areas: Bakersfield Metropolitan Area, Chico Urbanized Area, Fresno Urbanized Area, Lake Tahoe North Shore, Lake Tahoe South Shore, Modesto Urbanized Area, Sacramento Area, San Diego Area, San Francisco-Oakland-San Jose Area, and Stockton Urbanized Area adopted on April 26, 1996.

* * * * *

PART 81—[AMENDED]

1. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. In § 81.305, the table for California—Carbon Monoxide is amended by revising the entries for "Bakersfield Area," "Chico Area," "Fresno Area," "Lake Tahoe North Shore Area," " Lake Tahoe South Shore Area," "Modesto Area," "Sacramento Area," "San Diego Area," "San Francisco-Oakland-San Jose Area," and "Stockton Area" to read as follows:

§ 81.305 California.

* * * * *

Corrections

Federal Register
Vol. 63, No. 69
Friday, April 10, 1998

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD-FRL-5978-4]

RIN 2060-AE02

National Emission Standards for Hazardous Air Pollutants and Control Techniques Guideline Document for Source Categories: Aerospace Manufacturing and Rework Facilities

Correction

In rule document 98–6999, beginning on page 15006, in the issue of Friday, March 27, 1998, make the following correction:

§ 63.744 [Corrected]

On page 15018, in the second column, in amendatory instruction 7., in the ninth line, "(6)" should read "(c)".

BILLING CODE 1505-01-D

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

[Docket No. 96-27]

Anant N. Mauskar, M.D.; Grant of Restricted Registration

Correction

In notice document 98–7188, beginning on page 13687, in the issue of Friday, March 20, 1998, make the following correction:

On page 13688, in the first column, in the third full paragraph, four lines from the bottom "July" should read "Jury".

BILLING CODE 1505-01-D

20.0 Glossary of Definitions and Purposes

These definitions and purposes are specific to this method but have been conformed to common usage as much as possible.

20.1 Units of weight and measure and their abbreviations

20.1.1 Symbols.

°C degrees Celsius
µL microliter
< less than
> greater than
% percent

20.1.2 Alphabetical characters.

cm centimeter
g gram
h hour
ID inside diameter
in. inch
L liter
M Molecular ion
m meter
mg milligram
min minute
mL milliliter
mm millimeter
m/z mass-to-charge ratio
N normal; gram molecular weight of solute divided by hydrogen equivalent of solute, per liter of solution
OD outside diameter
pg picogram
ppb part-per-billion
ppm part-per-million
ppt part-per-trillion
psig pounds-per-square inch gauge
v/v volume per unit volume
w/v weight per unit volume

20.2 Definitions and acronyms (in alphabetical order).

Analyte: A chlorophenolic tested for by this method.

The analytes are listed in Table 1.

Calibration standard (CAL): A solution prepared from a secondary standard and/or stock solutions and used to calibrate the response of the instrument with respect to analyte concentration.

Calibration verification standard (VER): The mid-point calibration standard (CS3) that is used to verify calibration. See Table 4.

Chlorophenolics: collectively, the analytes listed in Table 1.

CS1, CS2, CS3, CS4, CS5: See Calibration standards and Table 4.

Field blank: An aliquot of reagent water or other reference matrix that is placed in a sample container in the laboratory or the field, and treated as a sample in all respects, including exposure to sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the field blank is to determine if the field or sample transporting procedures and environments have contaminated the sample.

GC: Gas chromatograph or gas chromatography.

HRGC: High resolution GC.

IPR: Initial precision and recovery; four aliquots of the diluted PAR standard analyzed to establish the ability to generate acceptable precision and accuracy. An IPR is performed prior to the first time this method is used and any time the method or instrumentation is modified.

K–D: Kuderna-Danish concentrator; a device used to concentrate the analytes in a solvent.

Laboratory blank: See Method blank.

Laboratory control sample (LCS): See Ongoing precision and recovery standard (OPR).

Laboratory reagent blank: See Method blank.

May: This action, activity, or procedural step is neither required nor prohibited.

May not: This action, activity, or procedural step is prohibited.

Method blank: An aliquot of reagent water that is treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, internal standards, and surrogates that are used with samples. The method blank is used to determine if analytes or interferences are present in the laboratory environment, the reagents, or the apparatus.

Minimum level (ML): The level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

MS: Mass spectrometer or mass spectrometry.

Must: This action, activity, or procedural step is required.

OPR: Ongoing precision and recovery standard (OPR): a laboratory blank spiked with known quantities of analytes. The OPR is analyzed exactly like a sample. Its purpose is to assure that the results produced by the laboratory remain within the limits specified in this method for precision and recovery.

PAR: Precision and recovery standard; secondary standard that is diluted and spiked to form the IPR and OPR.

Preparation blank: See Method blank.

Primary dilution standard: A solution containing the specified analytes that is purchased or prepared from stock solutions and diluted as needed to prepare calibration solutions and other solutions.

Quality control check sample (QCS): A sample containing all or a subset of the analytes at known concentrations. The QCS is obtained from a source external to the laboratory or is prepared from a source of standards different from the source of calibration standards. It is used to check laboratory performance with test materials prepared external to the normal preparation process.

Reagent water: Water demonstrated to be free from the analytes of interest and potentially interfering substances at the method detection limit for the analyte.

Relative standard deviation (RSD): The standard deviation times 100 divided by the mean.

RF: Response factor. See Section 10.5.1.

RR: Relative response. See Section 10.4.4.

RSD: See Relative standard deviation.

Should: This action, activity, or procedural step is suggested but not required.

Stock solution: A solution containing an analyte that is prepared using a reference material traceable to EPA, the National Institute of Science and Technology (NIST), or a source that will attest to the purity and authenticity of the reference material.

VER: See Calibration verification standard.

[FR Doc. 98–9613 Filed 4–14–98; 8:45 am]

BILLING CODE 6560–50–P

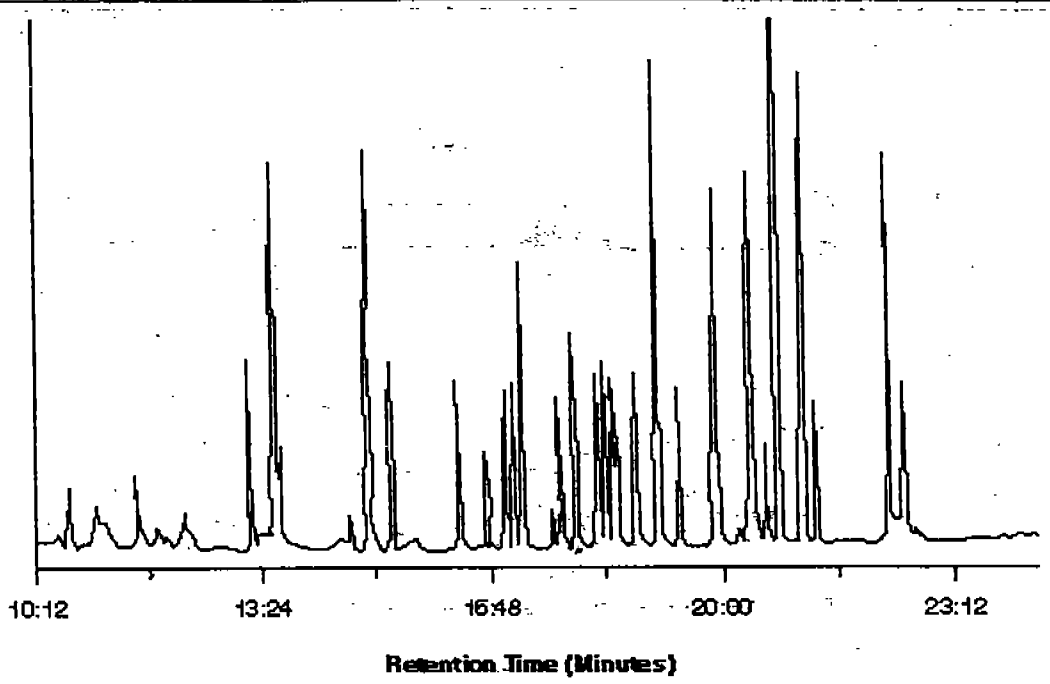


Figure 4. Chromatogram of Chlorophenolics

BILLING CODE 6560–50–C

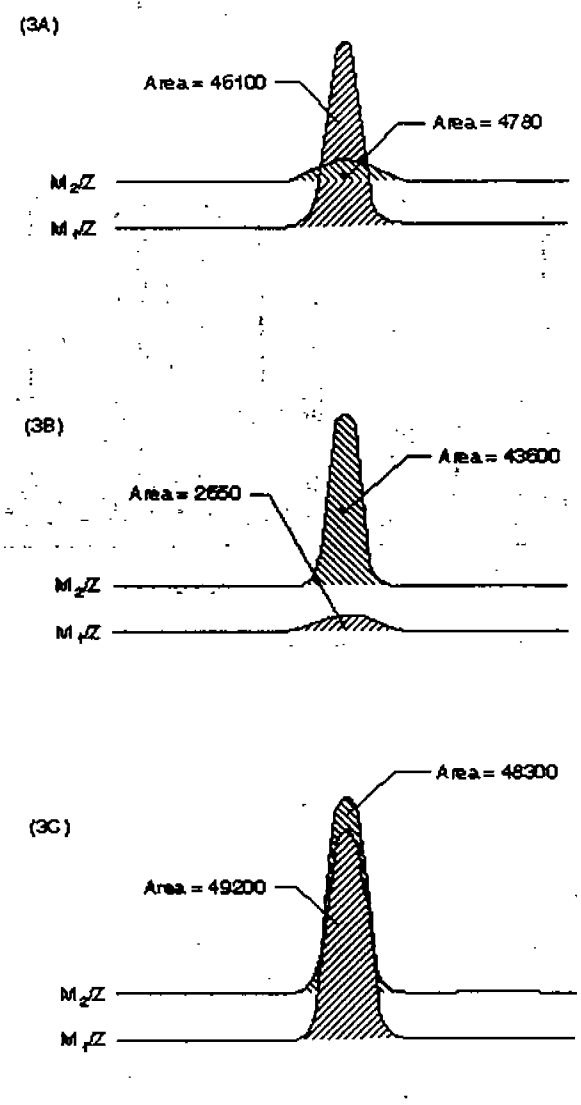


Figure 3. Extracted Ion-Current Profiles for (3A) Unlabeled Compound, (3B) Labeled Compound, and (3C) Equal Mixture of Unlabeled and Labeled Compounds.

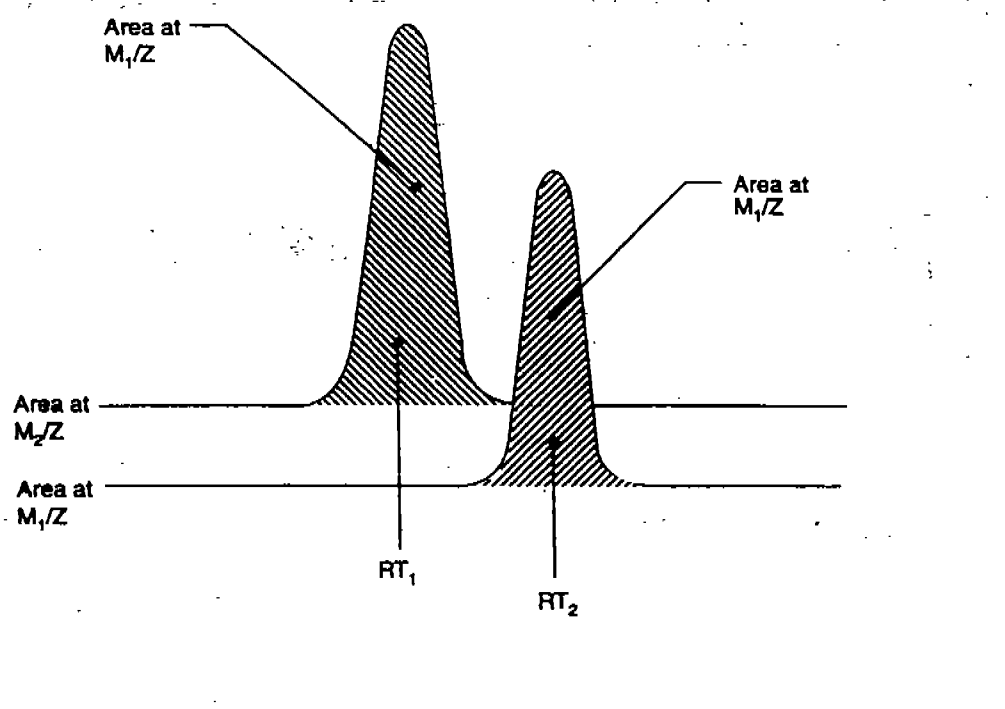
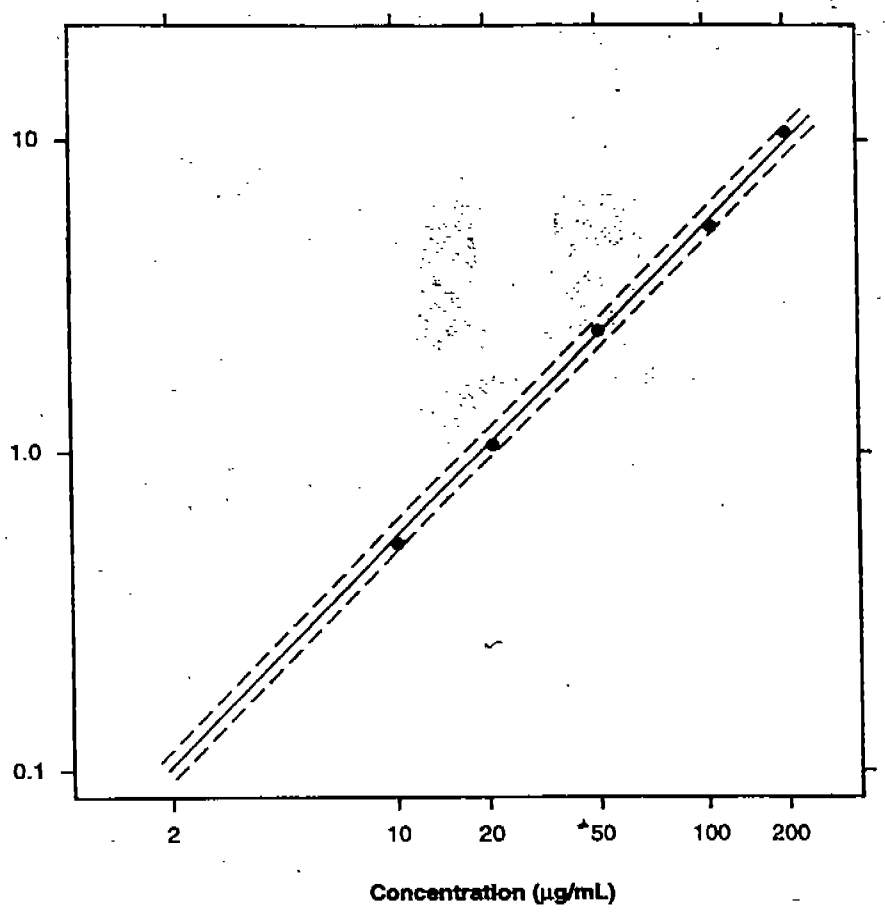


Figure 2. Extracted Ion-Current Profiles for Chromatographically Resolved Labeled (M_2/Z) and Unlabeld (M_1/Z) Pairs



The dotted lines enclose a ±10% error window.

52-020-21A

Figure 1. Relative Response Calibration Curve for Phenol

TABLE 4.—CHARACTERISTIC M/Z'S OF CHLOROPHENOLIC COMPOUNDS—Continued

Compound	Primary m/z
tetrachlorocatechol	248
tetrachlorocatechol-$^{13}C_6$	254
5-chlorovanillin	186
5-chlorovanillin-$^{13}C_6$	192
6-chlorovanillin	186
5,6-dichlorovanillin	220
2-chlorosyringaldehyde	216
2,6-dichlorosyringaldehyde	250
trichlorosyringol	256
Sample Matrix Internal Standard (SMIS)	
3,4,5-trichlorophenol	196
Instrument Internal Standard (IIS)	
2,2'-difluorobiphenyl	190

TABLE 5.—ACCEPTANCE CRITERIA FOR PERFORMANCE TESTS [1]

EGD No.[2]	Compound	Test conc.[3] (µg/mL)	Initial precision and recovery sec. 9.3.2 (percent)		Ongoing recovery sec. 9.6 (percent)	Labeled compound and SMIS recovery sec. 9.4 and 14.6	
			s	X		With ascorbic acid P (%)	Without ascorbic acid P (%)
1001	4-chlorophenol	25	64	72–144	40–236		
1202	2,4-dichlorophenol	50	14	84–120	84–118		
1102	2,4-dichlorophenol-d_3	25	54	64–160	56–170	58–135	27–143
1003	2,6-dichlorophenol	50	20	66–148	58–170		
1004	2,4,5-trichlorophenol	50	14	78–140	82–128		
1005	2,4,6-trichlorophenol	50	20	72–142	72–146		
1006	2,3,4,6-tetrachlorophenol	50	14	80–132	82–132		
1207	pentachlorophenol	100	6	90–111	84–120		
1107	pentachlorophenol-$^{13}C_6$	25	21	58–169	61–157	8–143	27–167
1208	4-chloroguaiacol	25	20	88–120	88–120		
1108	4-chloroguaiacol-$^{13}C_6$	25	104	68–148	64–152	59–121	43–168
1009	3,4-dichloroguaiaco[4]	50	18	80–126	82–126		
1010	4,5-dichloroguaiacol	50	14	82–121	80–128		
1011	4,6-dichloroguaiacol	50	16	82–126	86–120		
1012	3,4,5-trichloroguaiacol	50	16	78–130	80–134		
1013	3,4,6-trichloroguaiacol	50	16	64–152	74–140		
1214	4,5,6-trichloroguaiacol	50	14	92–106	88–116		
1114	4,5,6-trichloroguaiacol-$^{13}C_6$	25	48	66–146	74–140	48–131	51–139
1215	tetrachloroguaiacol	100	7	84–115	81–126		
1115	tetrachloroguaiacol-$^{13}C_6$	25	22	57–173	65–161	35–120	27–161
1016	4-chlorocatechol	25	48	76–140	80–124		
1017	3,4-dichlorocatechol	50	24	66–154	78–134		
1018	3,6-dichlorocatechol	50	16	78–136	84–126		
1219	4,5-dichlorocatechol	50	8	84–118	86–122		
1119	4,5-dichlorocatechol-$^{13}C_6$	25	78	68–144	66–142	33–129	0–190
1020	3,4,5-trichlorocatechol	100	17	60–166	72–128		
1021	3,4,6-trichlorocatechol[4]	100	17	74–138	64–149		
1222	tetrachlorocatechol	100	29	46–234	81–132		
1122	tetrachlorocatechol-$^{13}C_6$	25	39	48–227	63–152	14–118	0–184
1223	5-chlorovanillin	50	20	94–208	84–118		
1123	5-chlorovanillin-$^{13}C_6$	25	84	68–160	70–144	51–126	32–254
1024	6-chlorovanillin	50	22	82–128	80–126		
1025	5,6-dichlorovanillin	100	9	67–146	77–140		
1026	2-chlorosyringaldehyde	50	28	76–130	72–156		
1027	2,6-dichlorosyringaldehyde	100	14	82–129	60–183		
1028	trichlorosyringol	50	18	76–136	66–174		
	Sample Matrix Internal Standard						
184	3,4,5-trichlorophenol	100	47	62–185	68–144	56–116	24–167

[1] Specifications derived from multi-laboratory testing of draft method.
[2] Four-digit numbers beginning with 10 indicate a pollutant quantified by the internal standard method; four-digit numbers beginning with 11 indicate a labeled compound quantified by the internal standard method; four-digit numbers beginning with 12 indicate a pollutant quantified by isotope dilution.
[3] Test concentrations are in units of µg/mL.
[4] Specification derived from isomer.

BILLING CODE 6560-50-P

TABLE 2.—GAS CHROMATOGRAPHY AND METHOD DETECTION LIMITS FOR CHLOROPHENOLICS—Continued

EGD No.[1]	Compound	Retention time mean (sec)[2]	EGD ref No.	RRT window[3]	Minimum level[4] (µg/L)	MDL[5] (µg/L)
1026	2-chlorosyringaldehyde	1255	184	1.190–1.230	2.5	0.87
1107	pentachlorophenol-$^{13}C_6$	1267	164	1.511–1.561		
1207	pentachlorophenol	1268	1107	0.998–1.002	5.0	0.28
1020	3,4,5-trichlorocatechol	1268	184	1.208–1.238	5.0	0.53
1115	tetrachloroguaiacol-$^{13}C_6$	1289	164	1.537–1.587		
1215	tetrachloroguaiacol	1290	1115	0.998–1.002	5.0	0.23
1028	trichlorosyringol	1301	184	1.240–1.270	2.5	0.64
1122	tetrachlorocatechol-$^{13}C_6$	1365	164	1.630–1.690		
1222	tetrachlorocatechol	1365	1122	0.998–1.002	5.0	0.76
1027	2,6-dichlorosyringaldehyde	1378	184	1.309–1.349	5.0	1.13

[1] Four digit numbers beginning with 10 indicate a pollutant quantified by the internal standard method; four digit numbers beginning with 11 indicate a labeled compound quantified by the internal standard method; four digit numbers beginning with 12 indicate a pollutant quantified by isotope dilution.

[2] The retention times in this column are based on data from a single laboratory (reference 12), utilizing the GC conditions in Section 11.

[3] Relative retention time windows are estimated from EPA Method 1625.

[4] The minimum level (ML) is defined as the level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

[5] 40 CFR Part 136, Appendix B; from reference 2.

TABLE 3.—DFTPP MASS INTENSITY SPECIFICATIONS[1]

Mass	Intensity required
51	8 to 82% of m/z 198.
68	Less than 2% of m/z 69.
69	11 to 91% of m/z 198.
70	Less than 2% of m/z 69.
127	32 to 59% of m/z 198.
197	Less than 1% of m/z 198.
198	Base peak, 100% abundance.
199	4 to 9% of m/z 198.
275	11 to 30% of m/z 198.
441	44 to 110% of m/z 443.
442	30 to 86% of m/z 198.
443	14 to 24% of m/z 442.

[1] Reference 7.

TABLE 4.—CHARACTERISTIC M/Z'S OF CHLOROPHENOLIC COMPOUNDS

Compound	Primary m/z
4-chlorophenol	128
2,4-dichlorophenol	162
2,4-dichlorophenol-d_3	167
2,6-dichlorophenol	162
2,4,5-trichlorophenol	196
2,4,6-trichlorophenol	196
2,3,4,6-tetrachlorophenol	232
pentachlorophenol	266
pentachlorophenol-$^{13}C_6$	272
4-chloroguaiacol	158
4-chloroguaiacol-$^{13}C_6$	164
3,4-dichloroguaiacol	192
4,5-dichloroguaiacol	192
4,6-dichloroguaiacol	192
3,4,5-trichloroguaiacol	226
3,4,6-trichloroguaiacol	226
4,5,6-trichloroguaiacol	226
4,5,6-trichloroguaiacol-$^{13}C_6$	234
tetrachloroguaiacol	262
tetrachloroguaiacol-$^{13}C_6$	268
4-chlorocatechol	144
3,4-dichlorocatechol	178
3,6-dichlorocatechol	178
4,5-dichlorocatechol	178
4,5-dichlorocatechol-$^{13}C_6$	184
3,4,5-trichlorocatechol	212
3,4,6-trichlorocatechol	211

TABLE 1.—CHLOROPHENOLIC COMPOUNDS DETERMINED BY GCMS USING ISOTOPE DILUTION AND INTERNAL STANDARD TECHNIQUES

Compound	Pollutant		Labeled compound		
	CAS registry	EPA–EGD	Analog	CAS registry	EPA–EGD
4-chlorophenol	106–48–9	1001			
2,4-dichlorophenol	120–83–2	1002	d_3	93951–74–7	1102
2,6-dichlorophenol	87–65–0	1003			
2,4,5-trichlorophenol	95–95–4	1004			
2,4,6-trichlorophenol	88–06–2	1005			
2,3,4,6-tetrachlorophenol	58–90–2	1006			
pentachlorophenol	87–86–5	1007	$^{13}C_6$	85380–74–1	1107
4-chloroguaiacol	16766–30–6	1008	$^{13}C_6$	136955–39–0	1108
3,4-dichloroguaiacol	77102–94–4	1009			
4,5-dichloroguaiacol	2460–49–3	1010			
4,6-dichloroguaiacol	16766–31–7	1011			
3,4,5-trichloroguaiacol	57057–83–7	1012			
3,4,6-trichloroguaiacol	60712–44–9	1013			
4,5,6-trichloroguaiacol	2668–24–8	1014	$^{13}C_6$	136955–40–3	1114
tetrachloroguaiacol	2539–17–5	1015	$^{13}C_6$	136955–41–4	1115
4-chlorocatechol	2138–22–9	1016			
3,4-dichlorocatechol	3978–67–4	1017			
3,6-dichlorocatechol	3938–16–7	1018			
4,5-dichlorocatechol	3428–24–8	1019	$^{13}C_6$	136955–42–5	1119
3,4,5-trichlorocatechol	56961–20–7	1020			
3,4,6-trichlorocatechol	32139–72–3	1021			
tetrachlorocatechol	1198–55–6	1022	$^{13}C_6$	136955–43–6	1122
5-chlorovanillin	19463–48–0	1023	$^{13}C_6$	136955–44–7	1123
6-chlorovanillin	18268–76–3	1024			
5,6-dichlorovanillin	18268–69–4	1025			
2-chlorosyringaldehyde	76341–69–0	1026			
2,6-dichlorosyringaldehyde	76330–06–8	1027			
trichlorosyringol	2539–26–6	1028			
Sample matrix internal standard (SMIS)					
3,4,5-trichlorophenol	609–19–8	184			
Instrument internal standard (IIS)					
2,2'-difluorobiphenyl	388–82–9	164			

TABLE 2.—GAS CHROMATOGRAPHY AND METHOD DETECTION LIMITS FOR CHLOROPHENOLICS

EGD No.[1]	Compound	Retention time mean (sec)[2]	EGD ref No.	RRT window[3]	Minimum level[4] (µg/L)	MDL[5] (µg/L)
1001	4-chlorophenol	691	184	0.651–0.681	1.25	1.11
1003	2,6-dichlorophenol	796	184	0.757–0.779	2.5	1.39
1102	2,4-dichlorophenol-d_3	818	164	0.986–0.998		
1202	2,4-dichlorophenol	819	1102	0.997–1.006	2.5	0.15
164	2,2'-difluorobiphenyl (I.S.)	825	164	1.000		
1108	4-chloroguaiacol-$^{13}C_6$	900	164	1.077–1.103		
1208	4-chloroguaiacol	900	1108	0.998–1.002	1.25	0.09
1005	2,4,6-trichlorophenol	920	184	0.879–0.895	2.5	0.71
1004	2,4,5-trichlorophenol	979	184	0.936–0.952	2.5	0.57
1016	4-chlorocatechol	1004	184	0.961–0.975	1.25	0.59
1011	4,6-dichloroguaiacol	1021	184	0.979–0.991	2.5	0.45
1009	3,4-dichloroguaiacol	1029	184	0.986–0.998	2.5	0.52
184	3,4,5-trichlorophenol (I.S.)	1037	164	1.242–1.272		
1010	4,5-dichloroguaiacol	1071	184	1.026–1.040	2.5	0.52
1018	3,6-dichlorocatechol	1084	184	1.037–1.053	2.5	0.57
1006	2,3,4,6-tetrachlorophenol	1103	184	1.050–1.078	2.5	0.38
1123	5-chlorovanillin-$^{13}C_6$	1111	164	1.327–1.367		–
1223	5-chlorovanillin	1111	1123	0.998–1.001	2.5	1.01
1013	3,4,6-trichloroguaiacol	1118	184	1.066–1.090	2.5	0.46
1024	6-chlorovanillin	1122	184	1.070–1.094	2.5	0.94
1017	3,4-dichlorocatechol	1136	184	1.083–1.105	2.5	0.60
1119	4,5-dichlorocatechol-$^{13}C_6$	1158	164	1.384–1.424		
1219	4,5-dichlorocatechol	1158	1119	0.998–1.001	2.5	0.24
1012	3,4,5-trichloroguaiacol	1177	184	1.120–1.160	2.5	0.49
1114	4,5,6-trichloroguaiacol-$^{13}C_6$	1208	164	1.444–1.484		
1214	4,5,6-trichloroguaiacol	1208	1114	0.998–1.002	2.5	0.25
1021	3,4,6-trichlorocatechol	1213	184	1.155–1.185	5.0	0.44
1025	5,6-dichlorovanillin	1246	184	1.182–1.222	5.0	0.80

$$C_s = (\mu g/L) = \frac{(C_{ex} \times V_{ex})}{V_o}$$

Where:

C_s = Concentration of the pollutant in the sample.

C_{ex} = Concentration of the pollutant in the extract.

V_{ex} = Volume of the concentrated extract (typically 0.5 mL).

V_o = Volume of the original sample in liters.

14.6 Compute the recovery of each labeled compound and the SMIS as the ratio of concentration (or amount) found to the concentration (or amount) spiked, using the following equation:

$$\text{Percent recovery} = \frac{\text{Concentration found}}{\text{Concentration spiked}} \times 100$$

These percent recoveries are used to assess method performance according to Sections 9 and 13.

14.7 If the EICP area at the quantitation m/z for any compound exceeds the calibration range of the system, three approaches are used to obtain results within the calibration range.

14.7.1 If the recoveries of all the labeled compounds in the original sample aliquot meet the limits in Table 5, then the extract of the sample may be diluted by a maximum of a factor of 10, and the diluted extract reanalyzed.

14.7.2 If the recovery of any labeled compound is outside its limits in Table 5, or if a tenfold dilution of the extract will not bring the pollutant within the calibration range, then extract and analyze a dilute aliquot of the sample (Section 11). Dilute 100 mL, 10 mL, or an appropriate volume of sample to 1000 mL with reagent water and extract per Section 11.

14.7.3 If the recoveries of all labeled compounds in the original sample aliquot (Section 14.7.1) meet the limits in Table 5, and if the sample holding time has been exceeded, then the original sample extract is diluted by successive factors of 10, the DFB internal standard is added to give a concentration of 50 µg/mL in the diluted extract, and the diluted extract is analyzed. Quantitation of all analytes is performed using the DFB internal standard.

14.7.4 If the recoveries of all labeled compounds in the original sample aliquot (Section 14.7.1) or in the dilute aliquot (Section 14.7.2) (if a dilute aliquot was analyzed) do not meet the limits in Table 5, and if the holding time has been exceeded, re-sampling is required.

14.8 Results are reported for all pollutants, labeled compounds, and the sample matrix internal standard in standards, blanks, and samples, in units of µg/L.

14.8.1 Results for samples which have been diluted are reported at the least dilute level at which the area at the quantitation m/z is within the calibration range (Section 14.7).

14.8.2 For compounds having a labeled analog, results are reported at the least dilute level at which the area at the quantitation m/z is within the calibration range (Section 14.7) and the labeled compound recovery is within the normal range for the method (Section 13.3).

15.0 Method Performance

15.1 Single laboratory performance for this method is detailed in References 1, 2, and 11. Acceptance criteria were established from multiple laboratory use of the draft method.

15.2 A chromatogram of the ongoing precision and recovery standard (Section 7.14) is shown in Figure 4.

16.0 Pollution Prevention

16.1 The solvents used in this method pose little threat to the environment when recycled and managed properly.

16.2 Standards should be prepared in volumes consistent with laboratory use to minimize the volume of expired standards to be disposed.

17.0 Waste Management

17.1 It is the laboratory's responsibility to comply with all federal, state, and local regulations governing waste management, particularly the hazardous waste identification rules and land disposal restrictions, and to protect the air, water, and land by minimizing and controlling all releases from fume hoods and bench operations. Compliance with all sewage discharge permits and regulations is also required.

17.2 Samples preserved with HCl or H_2SO_4 to pH < 2 are hazardous and must be neutralized before being disposed, or must be handled as hazardous waste.

17.3 For further information on waste management, consult "The Waste Management Manual for Laboratory Personnel", and "Less is Better: Laboratory Chemical Management for Waste Reduction", both available from the American Chemical Society's Department of Government Relations and Science Policy, 1155 16th Street N.W., Washington, D.C. 20036.

18.0 References

18.1 "Chlorinated Phenolics in Water by In Situ Acetylation/GC/MS Determination," Method CP–86.01, National Council of the Paper Industry for Air and Stream Improvement, Inc., 260 Madison Avenue, New York, NY 10016 (July 1986).

18.2 "6240-Chlorinated Phenolics (Interim Standard)," Draft Version, U.S. Environmental Protection Agency, Manchester Laboratory, Manchester, Washington.

18.3 "Performance Tests for the Evaluation of Computerized Gas Chromatography/Mass Spectrometry Equipment and Laboratories," USEPA, EMSL Cincinnati, OH 45268, EPA–600/4–80–025 (April 1980).

18.4 "Working with Carcinogens," DHEW, PHS, CDC, NIOSH, Publication 77–206 (August 1977).

18.5 "OSHA Safety and Health Standards, General Industry," OSHA 2206, 29 CFR 1910 (January 1976).

18.6 "Safety in Academic Chemistry Laboratories," ACS Committee on Chemical Safety (1979).

18.7 "Interlaboratory Validation of U. S. Environmental Protection Agency Method 1625A, Addendum Report," SRI International, Prepared for Analysis and Evaluation Division (WH–557), USEPA, 401 M St. SW, Washington, DC 20460 (January 1985).

18.8 "Handbook of Analytical Quality Control in Water and Wastewater Laboratories," USEPA, EMSL, Cincinnati, OH 45268, EPA–600/4–79–019 (March 1979).

18.9 "Standard Practice for Sampling Water," ASTM Annual Book of Standards; ASTM, Philadelphia, PA, 76 (1980).

18.10 "Methods 330.4 and 330.5 for Total Residual Chlorine," USEPA, EMSL, Cincinnati, OH 45268, EPA 600/4–70–020 (March 1979).

18.11 "Determination of Chlorophenolics, Special Analytical Services Contract 1047, Episode 1886," Analytical Technologies, Inc., Prepared for W. A. Telliard, Industrial Technology Division (WH–552), USEPA, 401 M St. SW, Washington, DC 20460 (June 1990).

18.12 "Determination of Chlorophenolics by GCMS, Development of Method 1653," Analytical Technologies, Inc., Prepared for W. A. Telliard, Industrial Technology Division (WH–552), USEPA, 401 M St. SW, Washington, DC 20460 (May 1991).

19.0 Tables and Figures

device and direct a gentle stream of clean dry nitrogen into the concentrator. Rinse the sides of the concentrator tube with small volumes of hexane, and concentrate the extract to a final volume of 0.5 mL.

11.6 Spike each extract with 10 µL of the 2,2'-difluorobiphenyl IIS (Section 7.10) and transfer the concentrated extract to a clean screw-cap vial using hexane to rinse the concentrator tube. Seal the vial with a PTFE-lined lid, and mark the level on the vial. Label with the sample number and store in the dark at −20 to −10 °C until ready for analysis.

12.0 GCMS Analysis

12.1 Establish the following operating conditions:

Carrier gas flow: Helium at 30 cm/sec at 50 °C
Injector temperature: 300 °C
Initial temperature: 50 °C
Temperature program: 8 °C/min to 270 °C
Final hold: Until after 2,6-dichlorosyringaldehyde elutes

Adjust the GC conditions to meet the requirements in Section 9.6.1.1 and Table 2 for analyte separation and sensitivity. Once optimized, the same GC conditions must be used for the analysis of all standards, blanks, IPR and OPR aliquots, and samples.

12.2 Bring the concentrated extract (Section 11.6) or standard (Sections 7.13 and 7.14) to room temperature and verify that any precipitate has redissolved. Verify the level on the extract (Sections 7.13, 7.14, and 11.6) and bring to the mark with solvent if required.

12.3 Inject a 1-µL volume of the standard solution or extract using on-column or splitless injection. For 0.5 mL extracts, this 1-µL injection volume will contain 50 ng of the DFB internal standard. If an injection volume other than 1 µL is used, that volume must contain 50 ng of DFB.

12.4 Start the GC column temperature ramp upon injection. Start MS data collection after the solvent peak elutes. Stop data collection after the 2,6-dichlorosyringaldehyde peak elutes. Return the column to the initial temperature for analysis of the next sample.

13.0 Analysis of Complex Samples

Some samples may contain high levels (>1000 µg/L) of the compounds of interest, interfering compounds, and/or other phenolic materials. Some samples will not concentrate to 0.5 mL (Section 11.5); others will overload the GC column and/or mass spectrometer; others may contain amounts of phenols that may exceed the capacity of the derivatizing agent.

13.1 Analyze the dilute aliquot (Section 11.1.4) when the sample will not concentrate to 0.5 mL. If a dilute aliquot was not extracted, and the sample holding time (Section 8.4) has not been exceeded, dilute an aliquot of sample with reagent water, and derivatize and extract it (Section 11.1.4). Otherwise, dilute the extract (Section 14.7.3) and quantitate it by the internal standard method (Section 14.3).

13.2 Recovery of the 2,2'-difluorobiphenyl instrument internal standard: The EICP area of the internal standard should be within a factor of two of the area in the OPR or VER standard (Section 9.6). If the absolute areas of the labeled compounds and the SMIS are within a factor of two of the respective areas in the OPR or VER standard, and the DFB internal standard area is less than one-half of its respective area, then internal standard loss in the extract has occurred. In this case, analyze the extract from the dilute aliquot (Section 11.1.4).

13.3 Recovery of labeled compounds and the sample matrix internal standard (SMIS): SMIS and labeled compound recovery specifications have been developed for samples with and without the addition of ascorbic acid. Compare the recoveries to the appropriate limits in Table 5.

13.3.1 If SMIS or labeled compound recoveries are outside the limits given in Table 5 and the associated OPR analysis meets the recovery criteria, the extract from the dilute aliquot (Section 11.1.4) is analyzed as in Section 14.7.

13.3.2 If labeled compound or SMIS recovery is outside the limits given in Table 5 and the associated OPR analysis did not meet recovery criteria, a problem in the derivatization/extraction/concentration of the sample is indicated, and the sample must be rederivatized and reanalyzed.

14.0 Data Analysis and Calculations

14.1 Qualitative determination: Identification is accomplished by comparison of data from analysis of a sample or blank with data stored in the mass spectral libraries. Identification of a compound is confirmed when the following criteria are met:

14.1.1 The signals for m/z 43 (to indicate the presence of the acetyl derivative) and all characteristic m/z's stored in the spectral library (Section 10.2.4) shall be present and shall maximize within the same two consecutive scans.

14.1.2 Either (1) the background corrected EICP areas, or (2) the corrected relative intensities of the mass spectral peaks at the GC peak maximum shall agree within a factor of two (0.5 to 2 times) for all m/z's stored in the library.

14.1.3 The relative retention time shall be within the window specified in Table 2.

14.1.4 The m/z's present in the mass spectrum from the component in the sample that are not present in the reference mass spectrum shall be accounted for by contaminant or background ions. If the mass spectrum is contaminated, an experienced spectrometrist (Section 1.4) shall determine the presence or absence of the compound.

14.2 Quantitative determination by isotope dilution: By adding a known amount of a labeled compound to every sample prior to derivatization and extraction, correction for recovery of the pollutant can be made because the pollutant and its labeled analog exhibit the same effects upon derivatization, extraction, concentration, and gas chromatography. Relative response (RR) values for sample mixtures are used in conjunction with calibration curves described in Section 10.4 to determine concentrations directly, so long as labeled compound spiking levels are constant. For the phenol example given in Figure 1 (Section 10.4.1), RR would be equal to 1.114. For this RR value, the phenol calibration curve given in Figure 1 indicates a concentration of 27 µg/mL in the sample extract (C_{ex}).

14.2.1 Compute the concentration in the extract using the response ratio determined from calibration data (Section 10.4) and the following equation:

$$C_{ex}(\mu g/mL) = (A_n \times C_l)/(A_l \times RR)$$

Where:

C_{ex} = concentration of the pollutant in the extract.
A_n = area of the characteristic m/z for the pollutant.
C_l = concentration of the labeled compound in the extract.
A_l = area of the characteristic m/z for the labeled compound.
RR = response ratio from the initial calibration.

14.2.2 For the IPR (Section 9.3.2) and OPR (Section 9.6), compute the percent recovery of each pollutant using the equation in Section 14.6. The percent recovery is used for the evaluation of method and laboratory performance, in the form of IPR (Section 9.3.2) and OPR (Section 9.6).

14.3 Quantitative determination by internal standard: Compute the concentration using the response factor determined from calibration data (Section 10.5) and the following equation:

$$C_{ex}(\mu g/mL) = (A_s \times C_{is})/(A_{is} \times RF)$$

Where:

C_{ex} = concentration of the pollutant in the extract.
A_s = area of the characteristic m/z for the pollutant.
C_{is} = concentration of the internal standard in the extract (see note below).
A_{is} = area of the characteristic m/z for the internal standard.
RF = response factor from the initial calibration.

Note: When this equation is used to compute the extract concentrations of native compounds without labeled analogs, use the area (A_{is}) and concentration (C_{is}) of 3,4,5-trichlorophenol (SMIS) as the internal standard.

For the IPR (Section 9.3.2) and OPR (Section 9.6), compute the percent recovery using the equation in Section 14.6.

Note: Separate calibration curves will be required for samples with and without the addition of ascorbic acid, and also for both extraction procedures (stir-bar and separatory funnel) where applicable.

14.4 Compute the concentration of the labeled compounds and the SMIS using the equation in Section 14.3, but using the area and concentration of the 2,2'-difluorobiphenyl as the internal standard, and the area of the labeled compound or SMIS as A_s.

14.5 Compute the concentration of each pollutant compound in the sample using the following equation:

ascorbic acid to the pair associated with the final effluents, and not adding ascorbic acid to the pair associated with the in-process samples.

11.1.6 Ascorbic acid: Added to stabilize chlorocatechols. However, for pulp and paper industry in-process streams and other in-process wastewaters, the addition of ascorbic acid may convert chloro-o-quinones to catechols if these quinones are present. Separate calibration curves must be prepared with and without the addition of ascorbic acid (Section 7.13.2).

11.1.6.1 Spike 5 to 6 mL of the ascorbic acid solution (Section 7.2.2) into each final effluent sample, and the associated calibration standards, IPR and OPR aliquots, and blank.

11.1.6.2 For pulp and paper industry C-stage filtrates, E-stage filtrates, and untreated effluents, omit the ascorbic acid to prevent the conversion of chloro-o-quinones to catechols. Prepare calibration standards, IPR and OPR aliquots, and blanks associated with these samples without ascorbic acid as well.

11.1.7 Spike 1000 µL of the labeled compound spiking solution (Section 7.8) into the sample and QC aliquots.

11.1.8 Spike 500 µL of the nominal 50 µg/mL calibration solution (Section 7.13.4) into the OPR aliquot.

11.1.9 Adjust the pH of the sample aliquots to between 7.0 and 7.1. For calibration standards, IPR and OPR aliquots, and blanks, pH adjustment is not required.

11.1.10 Equilibrate all sample and QC solutions for approximately 15 minutes, with occasional stirring.

11.2 Derivatization: Because derivatization must proceed rapidly, particularly upon the addition of the K_2CO_3 buffer, it is necessary to work with one sample at a time until the derivatization step (Section 11.2.3) is complete.

11.2.1 Place a beaker containing a sample or QC aliquot on the magnetic stirrer in a fume hood, drop a clean stirring bar into the beaker, and increase the speed of the stirring bar until the vortex is drawn to the bottom of the beaker.

11.2.2 Measure 25 to 26 mL of K_2CO_3 buffer into a graduated cylinder or other container and 25 to 26 mL of acetic acid into another.

11.2.3 Add the K_2CO_3 buffer to the sample or QC aliquot, immediately (within one to three seconds) add the acetic anhydride, and stir for three to five minutes to complete the derivatization.

11.3 Extraction: Two procedures are described below for the extraction of derivatized samples. The choice of extraction procedure will depend on the sample type. For final effluent samples, either of two procedures may be utilized for extraction of derivatized samples. For samples of in-process wastewaters, the separatory funnel extraction procedure must be used.

Note: Whichever procedure is employed, the same extraction procedure must be used for calibration standards, IPR aliquots, OPR aliquots, blanks, and the associated field samples.

11.3.1 Stir-bar extraction of final effluents.

11.3.1.1 Add 200 mL (±20 mL) of hexane to the beaker and stir for three to five minutes, drawing the vortex to the bottom of the beaker.

11.3.1.2 Stop the stirring and drain the hexane and a portion of the water into a 500- to 1000-mL separatory funnel. Allow the layers to separate.

11.3.1.3 Drain the aqueous layer back into the beaker.

11.3.1.4 The formation of emulsions can be expected in any solvent extraction procedure. If an emulsion forms, the laboratory must take steps to break the emulsion before proceeding. Mechanical means of breaking the emulsion include the use of a glass stirring rod, filtration through glass wool, and other techniques. For emulsions that resist these techniques, centrifugation is nearly 100% effective.

If centrifugation is employed to break the emulsion, drain the organic layer into a centrifuge tube, cap the tube, and centrifuge for two to three minutes or until the phases separate. If the emulsion cannot be completely broken, collect as much of the organic phase as possible, and measure and record the volume of the organic phase collected.

If all efforts to break the emulsion fail, including centrifugation, and none of the organic phase can be collected, proceed with the dilute aliquot (Section 11.1.4.2). However, use of the dilute aliquot will sacrifice the sensitivity of the method, and may not be appropriate in all cases.

11.3.1.5 Drain the organic layer into a Kuderna-Danish (K–D) apparatus equipped with a 10-mL concentrator tube. Label the K–D apparatus. It may be necessary to pour the organic layer through a funnel containing anhydrous sodium sulfate to remove any traces of water from the extract.

11.3.1.6 Repeat the extraction (Section 11.3.1.1 through 11.3.1.5) two more times using another 200-mL of hexane for each extraction, combining the extracts in the K–D apparatus.

11.3.1.7 Proceed with concentration of the extract, as described in Section 11.4.

11.3.2 Separatory funnel extraction of either final effluents or in-process wastewaters.

11.3.2.1 Transfer the derivatized sample or QC aliquot to a 2-L separatory funnel.

11.3.2.2 Add 200 mL (±20 mL) of hexane to the separatory funnel. Cap the funnel and extract the sample by shaking the funnel for two to three minutes with periodic venting.

11.3.2.3 Allow the organic layer to separate from the water phase for a minimum of 10 minutes.

11.3.2.4 Drain the lower aqueous layer into the beaker used for derivatization (Section 11.2), or into a second clean 2-L separatory funnel. Transfer the solvent to a 1000-mL K–D flask. It may be necessary to pour the organic layer through a funnel containing anhydrous sodium sulfate to remove any traces of water from the extract.

11.3.2.5 The formation of emulsions can be expected in any solvent extraction procedure. If an emulsion forms, the laboratory must take steps to break the emulsion before proceeding. Mechanical means of breaking the emulsion include the use of a glass stirring rod, filtration through glass wool, and other techniques. For emulsions that resist these techniques, centrifugation may be required.

If centrifugation is employed to break the emulsion, drain the organic layer into a centrifuge tube, cap the tube, and centrifuge for two to three minutes or until the phases separate. If the emulsion cannot be completely broken, collect as much of the organic phase as possible, and measure and record the volume of the organic phase collected. If all efforts to break the emulsion, including centrifugation, fail and none of the organic phase can be collected, proceed with the dilute aliquot (Section 11.1.4.2). However, use of the dilute aliquot will sacrifice the sensitivity of the method, and may not be appropriate in all cases.

11.3.2.6 If drained into a beaker, transfer the aqueous layer to the 2-L separatory funnel (Section 11.3.2.1). Perform a second extraction using another 200 mL of fresh solvent.

11.3.2.7 Transfer the extract to the 1000-mL K–D flask in Section 11.3.2.4.

11.3.2.8 Perform a third extraction in the same fashion as above.

11.3.2.9 Proceed with concentration of the extract, as described in Section 11.4.

11.4 Macro concentration: Concentrate the extracts in separate 1000-mL K–D flasks equipped with 10-mL concentrator tubes. Add one to two clean boiling chips to the flask and attach a three-ball macro-Snyder column. Prewet the column by adding approximately 1 mL of hexane through the top. Place the K–D apparatus in a hot water bath so that the entire lower rounded surface of the flask is bathed with steam. Adjust the vertical position of the apparatus and the water temperature as required to complete the concentration in 15 to 20 minutes. At the proper rate of distillation, the balls of the column will actively chatter but the chambers will not flood. When the liquid has reached an apparent volume of 1 mL, remove the K–D apparatus from the bath and allow the solvent to drain and cool for at least 10 minutes. Remove the Snyder column and rinse the flask and its lower joint into the concentrator tube with 1 to 2 mL of hexane. A 5-mL syringe is recommended for this operation.

11.5 Micro-concentration: Final concentration of the extracts may be accomplished using either a micro-Snyder column or nitrogen evaporation.

11.5.1 Micro-Snyder column: Add a clean boiling chip and attach a two-ball micro-Snyder column to the concentrator tube. Prewet the column by adding approximately 0.5 mL hexane through the top. Place the apparatus in the hot water bath. Adjust the vertical position and the water temperature as required to complete the concentration in 5 to 10 minutes. At the proper rate of distillation, the balls of the column will actively chatter but the chambers will not flood. When the liquid reaches an apparent volume of approximately 0.2 mL, remove the apparatus from the water bath and allow to drain and cool for at least 10 minutes. Remove the micro-Snyder column and rinse its lower joint into the concentrator tube with approximately 0.2 mL of hexane. Adjust to a final volume of 0.5 mL.

11.5.2 Nitrogen evaporation: Transfer the concentrator tube to a nitrogen evaporation

$$R_x = \left[\frac{\text{area } m_1/z}{1}\right], \text{ at the retention time of the pollutant } (RT_2).$$

$$R_y = \left[\frac{1}{\text{area } m_2/z}\right], \text{ at the retention time of the labeled compound } (RT_1).$$

$$R_m = \left[\frac{\text{area at } m_1/z\ (\text{at } RT_2)}{\text{area at } m_2/z\ (\text{at } RT_1)}\right], \text{ as measured in the mixture of the pollutant and labeled compounds (Figure 2), and } RR = R_m.$$

10.4.4 When the pollutant-labeled pair is not separated (as occurs with carbon-13-labeled compounds), or when another labeled compound with interfering spectral masses overlaps the pollutant (a case which can occur with isomeric compounds), it is necessary to determine the contributions of the pollutant and labeled compound to the respective EICP areas. If the peaks are separated well enough to permit the data system or operator to remove the contributions of the compounds to each other, the equations in Section 10.4.3 apply. This usually occurs when the height of the valley between the two GC peaks at the same m/z is less than 70 to 90% of the height of the shorter of the two peaks. If significant GC and spectral overlap occur, RR is computed using the following equation:

$$RR = \frac{(R_y - R_m)(R_x + 1)}{(R_m - R_x)(R_y + 1)}$$

Where:

R_x is measured as shown in figure 3A,
R_y is measured as shown in figure 3B,
R_m is measured as shown in figure 3C.

For example, $R_x = 46100/4780 = 9.644$; $R_y = 2650/43600 = 0.0608$; $R_m = 49200/48300 = 1.1019$; thus, RR = 1.114. 10.4.5 To calibrate the analytical system by isotope dilution, analyze a 1-µL aliquot of each of the calibration standards (Section 7.13) using the procedure in Section 12. Compute the RR at each concentration.

10.4.6 Linearity: If the ratio of relative response to concentration for any compound is constant (less than 20% coefficient of variation) over the five-point calibration range, an averaged relative response/concentration ratio may be used for that compound; otherwise, the complete calibration curve for that compound shall be used over the five-point calibration range.

10.5 Calibration by internal standard: The method contains two types of internal standards, the sample matrix internal standard (SMIS) and the instrument internal standard (IIS), and they are used for different quantitative purposes. The 3,4,5-trichlorophenol sample matrix internal standard (SMIS) is used for measurement of all pollutants with no labeled analog and when the criteria for isotope dilution (Section 10.4) cannot be met. The 2,2′-difluorobiphenyl instrument internal standard (IIS) is used for determination of the labeled compounds and the SMIS. The results are used for intralaboratory statistics (Sections 9.4.4 and 9.6.3).

10.5.1 Response factors: Calibration requires the determination of response factors (RF) for both the pollutants with no labeled analog and for the labeled compounds and the SMIS. The response factor is defined by the following equation:

$$RF = \frac{(A_s \times C_{is})}{(A_{is} \times C_s)}$$

Where:

A_s=the area of the characteristic mass for the compound in the daily standard.
A_{is}=the area of the characteristic mass for the internal standard.
C_{is}=the concentration of the internal standard (µg/mL).
C_s=is the concentration of the compound in the calibration standard (µg/mL).

When this equation is used to determine the response factors for pollutant compounds without labeled analogs, use the area (A_{is}) and concentration (C_{is}) of 3,4,5-trichlorophenol (SMIS) as the internal standard. When this equation is used to determine the response factors for the labeled analogs and the SMIS, use the area (A_{is}) and concentration (C_{is}) of 2,2′-difluorobiphenyl as the internal standard.

10.5.2 The response factor is determined for at least five concentrations appropriate to the response of each compound (Section 7.13); nominally, 5, 10, 20, 50, and 100 µg/mL. The amount of SMIS added to each solution is the same (25 µg/mL) so that C_{is} remains constant. Likewise, the concentration of IIS is constant in each solution. The area ratio (A_s/A_{is}) is plotted versus the concentration ratio (C_s/C_{is}) for each compound in the standard to produce a calibration curve.

10.5.3 Linearity: If the response factor (RF) for any compound is constant (less than 35% coefficient of variation) over the five-point calibration range, an averaged response factor may be used for that compound; otherwise, the complete calibration curve for that compound shall be used over the five-point range.

10.6 Combined calibration: By using calibration solutions (Section 7.13) containing the pollutants, labeled compounds, and the internal standards, a single set of analyses can be used to produce calibration curves for the isotope dilution and internal standard methods. These curves are verified each shift (Section 9) by analyzing the OPR standard, or an optional calibration verification (VER) standard. Recalibration is required only if OPR criteria (Section 9.6 and Table 5) cannot be met.

11.0 Sample Derivatization, Extraction, and Concentration

The procedure described in this section uses a stir-bar in a beaker for the derivatization. The extraction procedures applied to samples depend on the type of sample being analyzed. Extraction of samples from in-process wastewaters is performed using a separatory funnel procedure. All calibrations, IPR, OPR, and blank analyses associated with in-process wastewater samples must be performed by the separatory funnel procedure.

Extraction of samples of final effluents and raw water may be performed using either the stir-bar procedure or the separatory funnel procedure. However, all calibrations, IPR, OPR, blank, and sample analyses must be performed using the same procedure. Both procedures are described below.

11.1 Preparation of all sample types for stir-bar derivatization.

11.1.1 Allow sample to warm to room temperature.

11.1.2 Immediately prior to measuring, shake sample vigorously to insure homogeneity.

11.1.3 Measure 1000 mL (±10 mL) of sample into a clean 2000-mL beaker. Label the beaker with the sample number.

11.1.4 Dilute aliquot(s).

11.1.4.1 Complex samples: For samples that are expected to be difficult to derivatize, concentrate, or are expected to overload the GC column or mass spectrometer, measure an additional 100 mL (±1 mL) into a clean 2000-mL beaker and dilute to a final volume of 1000-mL (±50 mL) with reagent water. Label with the sample number and as the dilute aliquot. However, to ensure adequate sensitivity, a 1000-mL aliquot must always be prepared and analyzed.

11.1.4.2 Pulp and paper industry samples: For in-process streams such as E-stage and C-stage filtrates and other in-process wastewaters, it may be necessary to prepare an aliquot at an additional level of dilution. In this case, dilute 10 mL (±0.1 mL) of sample to 1000-mL (±50 mL).

11.1.5 QC aliquots: For a batch of samples of the same type to be extracted at the same time (to a maximum of 20), place two 1000-mL (±10 mL) aliquots of reagent water in clean 2000-mL beakers. Label one beaker as the blank and the other as the ongoing precision and recovery (OPR) aliquot. Because final effluent samples are treated with ascorbic acid and in-process wastewater samples are not (see Section 11.1.6), prepare an OPR aliquot and a blank for the final effluent and a separate pair for the in-process samples. Treat these QC aliquots in the same fashion as the associated samples, adding

samples from the same batch. Alternatively, a separate calibration verification may be performed using an aliquot of the midpoint calibration standard from Section 7.13 (with a nominal concentration of 50µ g/mL). This alternative may be used to check instrument performance on failure of an OPR, or when samples extracted with an OPR aliquot are not analyzed within the same eight-hour analysis shift.

9.6.1.1 Retention times: The absolute retention time of 2,2'-difluorobiphenyl shall be within the range of 765 to 885 seconds, and the relative retention times of all pollutants and labeled compounds shall fall within the limits given in Table 2.

9.6.1.2 GC resolution: The valley height between 4,6-dichloroguaiacol and 3,4-dichloroguaiacol at m/z 192 shall not exceed 10% of the height of the taller of the two peaks.

9.6.1.3 Multiple peaks: Each compound injected shall give a single, distinct GC peak.

9.6.2 Compute the percent recovery of each pollutant (Table 1) by isotope dilution (Section 10.4) for those compounds that have labeled analogs. Compute the percent recovery of each pollutant that has no labeled analog by the internal standard method (Section 10.5), using the 3,4,5-trichlorophenol (SMIS) as the internal standard. Compute the percent recovery of the labeled compounds and the SMIS by the internal standard method, using the 2,2'-difluorobiphenyl as the internal standard.

9.6.2.1 For each compound, compare the recovery with the limits for ongoing precision and recovery in Table 5. If all compounds meet the acceptance criteria, system performance is acceptable and analysis of blanks and samples may proceed. If, however, any individual recovery falls outside of the range given, system performance is unacceptable for that compound. In this event, there may be a problem with the GCMS or with the derivatization/extraction/concentration systems.

9.6.2.2 GCMS system: To determine if the failure of the OPR test (Section 9.6.2.1) is due to instrument drift, analyze the current calibration verification extract (Section 7.13.4), calculate the percent recoveries of all compounds, and compare with the OPR recovery limits in Table 5. If all compounds meet these criteria, GCMS performance/stability is verified, and the failure of the OPR analysis is attributed to problems in the derivatization/extraction/concentration of the OPR. In this case, analysis of the sample extracts may proceed. However, failure of any of the recovery criteria in the analysis of a sample extract requires rederivatization of that sample (Sections 13.3.1 and 13.3.2). If, however, the performance/stability of the GCMS is not verified by analysis of the calibration verification extract, the GCMS requires recalibration and all extracts associated with the failed OPR must be reanalyzed.

9.6.3 Add results that pass the specifications in Section 9.6.2.1 to initial and previous ongoing data for each compound. Update QC charts to form a graphic representation of continued laboratory performance. Develop a statement of laboratory accuracy for each pollutant and labeled compound in each matrix type (reagent water, C-stage filtrate, E-stage filtrate, final effluent, etc.) by calculating the average percent recovery (R) and the standard deviation of percent recovery (sr). Express the accuracy as a recovery interval from R – 2sr to R + 2sr. For example, if R = 95% and sr = 5%, the accuracy is 85 to 105%.

9.7 The specifications contained in this method can be met if the apparatus used is calibrated properly, then maintained in a calibrated state. The standards used for calibration (Section 10) and for initial (Section 9.3.2) and ongoing (Section 9.6) precision and recovery should be identical, so that the most precise results will be obtained. The GCMS instrument in particular will provide the most reproducible results if dedicated to the settings and conditions required for the analyses of chlorophenolics by this method.

9.8 Depending on specific program requirements, field replicates may be collected to determine the precision of the sampling technique, and spiked samples may be required to determine the accuracy of the analysis when the internal standard method is used.

10.0 Calibration and Standardization

10.1 Assemble the GCMS and establish the operating conditions in Section 12. Analyze standards per the procedure in Section 12 to demonstrate that the analytical system meets the minimum levels in Table 2, and the mass-intensity criteria in Table 3 for 50 ng DFTPP.

10.2 Mass-spectral libraries: Detection and identification of compounds of interest are dependent upon spectra stored in user-created libraries.

10.2.1 Obtain a mass spectrum of the acetyl derivative of each chlorophenolic compound (pollutant, labeled compound, and the sample matrix internal standard) by derivatizing and analyzing an authentic standard either singly or as part of a mixture in which there is no interference between closely eluting components. That only a single compound is present is determined by examination of the spectrum. Fragments not attributable to the compound under study indicate the presence of an interfering compound.

10.2.2 Adjust the analytical conditions and scan rate (for this test only) to produce an undistorted spectrum at the GC peak maximum. An undistorted spectrum will usually be obtained if five complete spectra are collected across the upper half of the GC peak. Software algorithms designed to "enhance" the spectrum may eliminate distortion, but may also eliminate authentic m/z's or introduce other distortion.

10.2.3 The authentic reference spectrum is obtained under DFTPP tuning conditions (Section 10.1 and Table 3) to normalize it to spectra from other instruments.

10.2.4 The spectrum is edited by removing all peaks in the m/z 42 to 45 range, and saving the five most intense mass spectral peaks and all other mass spectral peaks greater than 10% of the base peak (excluding the peaks in the m/z 42 to 45 range). The spectrum may be further edited to remove common interfering m/z's. The spectrum obtained is stored for reverse search and for compound confirmation. 10.3 Minimum level: Demonstrate that the chlorophenolics are detectable at the minimum level (per all criteria in Section 14). The nominal 5 µg/mL calibration standard (Section 7.13) can be used to demonstrate this performance.

10.4 Calibration with isotope dilution: Isotope dilution is used when (1) labeled compounds are available, (2) interferences do not preclude its use, and (3) the quantitation m/z (Table 4) extracted ion-current profile (EICP) area for the compound is in the calibration range. Alternative labeled compounds and quantitation m/z's may be used based on availability. If any of the above conditions preclude isotope dilution, the internal standard calibration method (Section 10.5) is used.

10.4.1 A calibration curve encompassing the concentration range is prepared for each compound to be determined. The relative response (pollutant to labeled) vs. concentration in standard solutions is plotted or computed using a linear regression. The example in Figure 1 shows a calibration curve for phenol using phenol-d5 as the isotopic diluent. Also shown are the ±10% error limits (dotted lines). Relative response (RR) is determined according to the procedures described below. A minimum of five data points are employed for calibration.

10.4.2 The relative response of a pollutant to its labeled analog is determined from isotope ratio values computed from acquired data. Three isotope ratios are used in this process:

R_x = the isotope ratio measured for the pure pollutant.

R_y = the isotope ratio measured for the labeled compound.

R_m = the isotope ratio of an analytical mixture of pollutant and labeled compounds.

The m/z's are selected such that $R_x > R_y$. If R_m is not between $2R_y$ and $0.5R_x$, the method does not apply and the sample is analyzed by the internal standard method.

10.4.3 Capillary columns sometimes separate the pollutant-labeled pair when deuterium labeled compounds are used, with the labeled compound eluted first (Figure 2). For this case,

method or an alternative EPA method (Reference 10).

8.2.1.1 Dissolve a few crystals of potassium iodide in the sample and add three to five drops of a 1% starch solution. A blue color indicates the presence of residual chlorine.

8.2.1.2 If residual chlorine is found, add 1 mL of sodium thiosulfate solution (Section 7.2.1) for each 2.5 ppm of free chlorine or until the blue color disappears.

8.2.2 Acidification: Adjust pH of all aqueous samples to <2 with sulfuric acid (Section 7.1.2). Failure to acidify samples may result in positive interferences from continued chlorination reactions.

8.2.3 Refrigeration: Maintain sample temperature at 0 to 4 °C from time of collection until extraction, and maintain extracts at a temperature of 0 to 4° C from time of extraction until analysis.

8.3 Collect a minimum of 2000 mL of sample. This will provide a sufficient amount for all testing. Smaller amounts may be collected if the stream is known to contain high levels of chlorophenolics.

8.4 All samples must be acetylated and extracted within 30 days of collection, and must be analyzed within 30 days of acetylation. If labeled compound recoveries for a sample do not meet the acceptance criteria in Table 5 and the 30-day holding time is not met, a new sample must be collected.

9.0 Quality Control

9.1 Each laboratory that uses this method is required to operate a formal quality assurance program (Reference 8). The minimum requirements of this program consist of an initial demonstration of laboratory capability, analysis of samples spiked with labeled compounds to evaluate and document data quality, and analysis of standards and blanks as tests of continued performance. Laboratory performance is compared to established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

9.1.1 DFTPP spectrum validity shall be checked at the beginning of each eight-hour shift during which analyses are performed. This test is described in Section 9.2.

9.1.2 The laboratory shall make an initial demonstration of the ability to generate acceptable results with this method. This ability is established as described in Section 9.3.

9.1.3 The laboratory is permitted to modify this method to improve separations or lower the costs of measurements, provided all performance specifications are met. Each time a modification is made to the method, the laboratory is required to repeat the procedures in Sections 10.3 and 9.3.2 to demonstrate method performance. If the detection limits for the analytes in this method will be affected by the modification, the laboratory should demonstrate that each MDL (40 CFR 136, Appendix B) is less than or equal to the MDL in this method or one-third the regulatory compliance level, whichever is higher.

9.1.4 The laboratory shall spike all samples with labeled compounds and the sample matrix internal standard (SMIS) to monitor method performance. This test is described in Section 9.4. When results of these spikes indicate atypical method performance for samples, the samples are diluted to bring method performance within acceptable limits (Section 13).

9.1.5 Analyses of blanks are required to demonstrate freedom from contamination. The procedures and criteria for analysis of a blank are described in Section 9.5.

9.1.6 The laboratory shall, on an ongoing basis, demonstrate through analysis of the ongoing precision and recovery standard (Section 7.14) that the analysis system is in control. These procedures are described in Section 9.6.

9.1.7 The laboratory shall maintain records to define the quality of data that is generated. Development of accuracy statements is described in Section 9.4.4 and 9.6.3.

9.2 DFTPP spectrum validity: Inject 1 µL of the DFTPP solution (Section 7.11) either separately or within a few seconds of injection of the OPR standard (Section 9.6) analyzed at the beginning of each shift. The criteria in Table 3 shall be met.

9.3 Initial demonstration of laboratory capability.

9.3.1 Method Detection Limit (MDL): To establish the ability to detect the analytes in this method, the laboratory should determine the MDL per the procedure in 40 CFR 136, Appendix B using the apparatus, reagents, and standards that will be used in the practice of this method. MDLs less than or equal to the MDLs in Table 2 should be achieved prior to the practice of this method.

9.3.2 Initial precision and recovery (IPR): To establish the ability to demonstrate control over the analysis system and to generate acceptable precision and accuracy, the laboratory shall perform the following operations:

9.3.2.1 Derivatize, extract, concentrate, and analyze four 1000-mL aliquots of the ongoing precision and recovery standard (OPR; Section 7.14), according to the procedure in Section 11. Separate sets of IPR aliquots must be prepared with the addition of ascorbic acid and without.

9.3.2.2 Using results of the four analyses, compute the average percent recovery ($\bar{X}$) and the relative standard deviation of the recovery (s) for each compound, by isotope dilution for pollutants with a labeled analog, and by internal standard for pollutants with no labeled analog and for the labeled compounds and the SMIS.

9.3.2.3 For each compound, compare s and $\bar{X}$ with the corresponding limits for initial precision and recovery in Table 5. If s and $\bar{X}$ for all compounds meet the acceptance criteria, system performance is acceptable and analysis of blanks and samples may begin. If, however, any individual s exceeds the precision limit or any individual $\bar{X}$ falls outside the range for recovery, system performance is unacceptable for that compound. In this event, correct the problem and repeat the test (Section 9.3.2).

9.4 Labeled compound recovery: The laboratory shall spike all samples with labeled compounds and the sample matrix internal standard (SMIS) to assess method performance on the sample matrix.

9.4.1 Analyze each sample according to the method beginning in Section 11.

9.4.2 Compute the percent recovery (P) of the labeled compounds and the SMIS using the internal standard method (Section 14.3) with 2,2'-difluorobiphenyl as the reference compound.

9.4.3 Compare the labeled compound and SMIS recovery for each compound with the corresponding limits in Table 5. If the recovery of any compound falls outside its warning limit, method performance is unacceptable for that compound in that sample. Therefore, the sample is complex. The sample is diluted and reanalyzed per Section 13.

9.4.4 As part of the QA program for the laboratory, it is suggested, but not required, that method accuracy for samples be assessed and records maintained. After the analysis of five samples for which the labeled compounds pass the tests in Section 9.4.3, compute the average percent recovery (P) and the standard deviation of the percent recovery (sp) for the labeled compounds only. Express the accuracy assessment as a percent recovery interval from P − 2sp to P + 2sp for each matrix. For example, if P = 90% and sp = 10%, the accuracy interval is expressed as 70 to 110%. Update the accuracy assessment for each compound on a regular basis (e.g., after each 20 to 30 new accuracy measurements).

9.5 Blanks: Reagent water blanks are analyzed to demonstrate freedom from contamination.

9.5.1 Extract and concentrate a 1000-mL reagent water blank with each sample batch (samples started through the extraction process on the same eight-hour shift, to a maximum of 20 samples). Blanks associated with samples to which ascorbic acid is added must be prepared with ascorbic acid, and blanks associated with samples to which ascorbic acid is not added must be prepared without ascorbic acid. Analyze the blank immediately after analysis of the OPR (Section 7.14) to demonstrate freedom from contamination.

9.5.2 If any of the compounds of interest (Table 1) or any potentially interfering compound is found in an aqueous blank at greater than 5µg/L (assuming a response factor of one relative to the sample matrix internal standard for compounds not listed in Table 1), analysis of samples is halted until the source of contamination is eliminated and a blank shows no evidence of contamination at this level.

9.6 Calibration verification and ongoing precision and recovery: At the beginning of each eight-hour shift during which analyses are performed, analytical system performance is verified for all compounds. Analysis of DFTPP (Section 9.2) and the nominal 50µg/mL OPR (Section 11.1.5) is used to verify all performance criteria. Adjustment and/or recalibration, per Section 10, shall be performed until all performance criteria are met. Only after all performance criteria are met may samples and blanks be analyzed.

9.6.1 Analyze the extract of the OPR (Section 11.1.5) at the beginning of each eight-hour shift and prior to analysis of

libraries, process GCMS data, generate reports, and compute and record response factors.

6.14.1 Data acquisition: Mass spectra shall be collected continuously throughout the analysis and stored on a mass storage device.

6.14.2 Mass spectral libraries: User-created libraries containing mass spectra obtained from analysis of authentic standards shall be employed to reverse search GCMS runs for the compounds of interest (Section 10.2).

6.14.3 Data processing: The data system shall be used to search, locate, identify, and quantify the compounds of interest in each GCMS analysis. Software routines shall be employed to compute retention times, and to compute peak areas at the m/z's specified (Table 4). Displays of spectra, mass chromatograms, and library comparisons are required to verify results.

6.14.4 Response factors and multi-point calibrations: The data system shall be used to record and maintain lists of response factors (response ratios for isotope dilution) and multi-point calibration curves (Section 10). Computations of relative standard deviation (coefficient of variation) are used for testing calibration linearity. Statistics on initial (Section 9.3.2) and ongoing (Section 9.6) performance shall be computed and maintained.

7.0 Reagents and Standards

7.1 Reagents for adjusting sample pH.

7.1.1 Sodium hydroxide: Reagent grade, 6 N in reagent water.

7.1.2 Sulfuric acid: Reagent grade, 6 N in reagent water.

7.2 Reagents for sample preservation.

7.2.1 Sodium thiosulfate ($Na_2S_2O_3$) solution (1 N): Weigh 79 g $Na_2S_2O_3$ in a 1–L volumetric flask and dilute to the mark with reagent water.

7.2.2 Ascorbic acid solution: Prepare a solution of ascorbic acid in reagent water at a concentration of 0.1 g/mL. This solution must be prepared fresh on each day when derivatizations will be performed. Therefore, do not prepare more than will be used that day. (A 50-mL volume is sufficient for ten analyses).

7.3 Solvents: Hexane, acetone, and methanol. Distilled in glass (Burdick and Jackson, or equivalent).

7.4 Reagent water: Water in which the compounds of interest and interfering compounds are not detected by this method.

7.5 Reagents for derivatization.

7.5.1 Potassium carbonate (K_2CO_3).

7.5.1.1 Purification: Spread in a shallow baking dish, heat overnight at 400 to 500°C.

7.5.1.2 Solution: Dissolve 150 g purified K_2CO_3 in 250 mL reagent water.

7.5.2 Acetic anhydride: Redistilled reagent grade.

7.6 Analytical standards.

7.6.1 Derivatization: Because the chlorinated phenolics are determined as their acetate derivatives after in situ acetylation, the method requires that the calibration standards be prepared by spiking the underivatized materials into reagent water and carrying the spiked reagent water aliquot through the entire derivatization and extraction procedure that is applied to the field samples.

7.6.2 Standard solutions: Purchased as solutions or mixtures with certification to their purity, concentration, and authenticity, or prepared from materials of known purity and composition. If chemical purity of a compound is 98% or greater, the weight may be used without correction to compute the concentration of the standard. When not being used, standards are stored in the dark at −20 to −10 °C in screw-capped vials with PTFE-lined lids. A mark is placed on the vial at the level of the solution so that solvent evaporation loss can be detected. The vials are brought to room temperature prior to use.

7.6.3 If the chemical purity of any standard does not meet the 98% requirement above, the laboratory must correct all calculations, calibrations, etc., for the difference in purity.

7.7 Preparation of stock solutions: Prepare chlorovanillins and chlorosyringaldehydes in acetone, as these compounds are subject to degradation in methanol. Prepare the remaining chlorophenolics in methanol. Prepare all standards per the steps below. Observe the safety precautions in Section 5.

7.7.1 Dissolve an appropriate amount of assayed reference material in a suitable solvent. For example, weigh 50 mg (±0.1 mg) of pentachlorophenol in a 10-mL ground-glass-stoppered volumetric flask and fill to the mark with methanol. After the pentachlorophenol is completely dissolved, transfer the solution to a 15-mL vial with PTFE-lined cap.

7.7.2 Stock solutions should be checked for signs of degradation prior to the preparation of calibration or performance test standards and shall be replaced after six months, or sooner if comparison with quality control check standards indicates a change in concentration.

7.8 Labeled compound spiking solution: From stock solutions prepared as above, or from mixtures, prepare one spiking solution to contain the labeled chlorovanillin in acetone and a second spiking solution to contain the remaining chlorophenolics, including the 3,4,5-trichlorophenol sample matrix internal standard (SMIS), in methanol. The labeled compounds and SMIS are each at a concentration of 12.5 µg/mL.

7.9 Secondary standards for calibration: Using stock solutions (Section 7.7), prepare one secondary standard containing the chlorovanillins and chlorsyringaldehydes listed in Table 1 in acetone and a second secondary standard containing the remaining chlorophenolics in methanol. The monochlorinated phenol, guaiacol, and catechol are included at a concentration of 25 µg/mL; the trichlorinated catechols, tetrachlorinated guaiacol and catechol, pentachlorophenol, 5,6-dichlorovanillin, and 2,6-dichlorosyringaldehyde are included at a concentration of 100 µg/mL; and the remaining compounds are included at a concentration of 50 µg/mL, each in their respective solutions.

7.10 Instrument internal standard (IIS): Prepare a solution of 2,2'-difluorobiphenyl (DFB) at a concentration of 2.5 mg/mL in hexane.

7.11 DFTPP solution: Prepare a solution of DFTPP at 50 µg/mL in acetone.

7.12 Solutions for obtaining authentic mass spectra (Section 10.2): Prepare mixtures of compounds at concentrations which will assure authentic spectra are obtained for storage in libraries.

7.13 Preparation of calibration solutions.

7.13.1 Into five 1000-mL aliquots of reagent water, spike 50, 100, 200, 500 and 1000 µL of each of the two solutions in Section 7.9. Spike 1.00 mL of each of the two labeled compound spiking solutions (Section 7.8) into each of the five aliquots.

7.13.2 Using the procedure in Section 11, derivatize and extract each solution, and concentrate the extract to a final volume of 0.50 mL. This will produce calibration solutions of nominal 5, 10, 20, 50, and 100 µg/mL of the native chlorophenolics and a constant concentration of 25 µg/mL of each labeled compound and the SMIS (assuming 100% derivatization and recovery). As noted in Section 11.1.6, ascorbic acid is added to all samples of final effluents to stabilize chlorocatechols, but is not added to samples of pulp and paper in-process wastewaters. Therefore, it is necessary to prepare separate sets of five initial calibration standards with and without the addition of ascorbic acid. Also, in the event that the laboratory is extracting final effluent samples by both the stir-bar and separatory funnel procedures (see Section 11.3), initial calibration standards should be prepared by both methods.

7.13.3 These solutions permit the relative response (labeled to unlabeled) and the response factor to be measured as a function of concentration (Sections 10.4 and 10.5).

7.13.4 The nominal 50 µg/mL standard may also be used as a calibration verification standard (see Section 9.6).

7.14 Ongoing precision and recovery (OPR) standard: Used for determination of initial (Section 9.3.2) and ongoing (Section 9.6) precision and recovery. This solution is prepared by spiking 500 µL of each the two solutions of the secondary calibration standards (Section 7.9) and 1 mL of each of the two labeled compound spiking solutions (Section 7.8) into 1000 mL of reagent water.

7.15 Stability of solutions: All standard solutions (Sections 7.7 through 7.14) shall be analyzed within 48 hours of preparation and on a monthly basis thereafter for signs of degradation. Standards will remain acceptable if the peak area at the quantitation m/z relative to the DFB internal standard remains within ±15% of the area obtained in the initial analysis of the standard.

8.0 Sample Collection, Preservation, and Storage

8.1 Collect samples in glass containers (Section 6.1) following conventional sampling practices (Reference 9). Aqueous samples are collected in refrigerated bottles using automatic sampling equipment.

8.2 Sample preservation.

8.2.1 Residual chlorine: If the sample contains residual chlorine, the chlorine must be reduced to eliminate positive interference resulting from continued chlorination reactions. Immediately after sampling, test for residual chlorine using the following

3.0 Definitions

3.1 Chlorinated phenolics are the chlorinated phenols, guaiacols, catechols, vanillins, syringaldehydes and other compounds amenable to in situ acetylation, extraction, and determination by GCMS using this method.

3.2 Definitions for other terms used in this method are given in the glossary at the end of the method (Section 20.0).

4.0 Interferences

4.1 Solvents, reagents, glassware, and other sample processing hardware may yield artifacts and/or elevated baselines, causing misinterpretation of chromatograms and spectra. All materials used in the analysis shall be demonstrated to be free from interferences under the conditions of analysis by running method blanks initially and with each sample batch (samples started through the extraction process on a given eight-hour shift, to a maximum of 20). Specific selection of reagents and purification of solvents by distillation in all-glass systems may be required. Glassware and, where possible, reagents are cleaned by using solvent rinse and baking at 450 °C for a minimum of one hour.

4.2 Interferences co-extracted from samples will vary considerably from source to source, depending on the diversity of the site being sampled. Industry experience suggests that high levels of non-chlorinated phenols may cause poor recovery of the compounds of interest, particularly in samples collected in the vicinity of a source of creosote, such as a wood-preserving plant (Reference 1).

4.3 The internal standard, 3,4,5-trichlorophenol, has been reported to be an anaerobic degradation product of 2,3,4,5-tetrachlorophenol and/or pentachlorophenol (Reference 1). When an interference with this or another compound occurs, labeled pentachlorophenol or another labeled compound may be used as an alternative internal standard; otherwise, the internal standards and reference compounds must be used as specified in this method.

4.4 Blank contamination by pentachlorophenol has been reported (Reference 1) to be traceable to potassium carbonate; it has also been reported that this contamination may be removed by baking overnight at 400 to 500 °C.

4.5 Catechols are susceptible to degradation by active sites on injection port liners and columns, and are subject to oxidation to the corresponding chloro-o-benzoquinones (Reference 2). A small amount of ascorbic acid may be added to samples to prevent auto-oxidation (Reference 2; also see Section 11.1.6). For pulp and paper industry samples, ascorbic acid may be added to treated effluent samples only.

5.0 Safety

5.1 The toxicity or carcinogenicity of each compound or reagent used in this method has not been precisely determined; however, each chemical compound should be treated as a potential health hazard. Exposure to these compounds should be reduced to the lowest possible level. The laboratory is responsible for maintaining a current awareness file of OSHA regulations regarding the safe handling of the chemicals specified in this method. A reference file of materials safety data sheets (MSDSs) should be made available to all personnel involved in these analyses. Additional information on laboratory safety can be found in References 4 through 6.

5.2 Samples may contain high concentrations of toxic compounds, and should be handled with gloves and a hood opened to prevent exposure.

6.0 Equipment and Supplies

Note: Brand names, suppliers, and part numbers are for illustrative purposes only. No endorsement is implied. Equivalent performance may be achieved using apparatus and materials other than those specified here, but demonstration of equivalent performance that meets the requirements of this method is the responsibility of the laboratory.

6.1 Sampling equipment for discrete or composite sampling.

6.1.1 Sample bottles and caps.

6.1.1.1 Sample bottle: Amber glass, 1000-mL minimum, with screw-cap. If amber bottles are not available, samples shall be protected from light.

6.1.1.2 Bottle caps: Threaded to fit sample bottles. Caps shall be lined with PTFE.

6.1.1.3 Cleaning bottles: Detergent water wash, cap with aluminum foil, and bake at 450°C for a minimum of one hour before use.

6.1.1.4 Cleaning liners: Detergent water wash, reagent water (Section 7.4) and solvent rinse, and bake at approximately 200°C for a minimum of 1 hour prior to use.

6.1.1.5 Bottles and liners must be lot-certified to be free of chlorophenolics by running blanks according to this method. If blanks from bottles and/or liners without cleaning or with fewer cleaning steps show no detectable chlorophenolics, the bottle and liner cleaning steps that do not eliminate chlorophenolics may be omitted.

6.1.2 Compositing equipment: Automatic or manual compositing system incorporating glass containers cleaned per bottle cleaning procedure above. Sample containers are kept at 0 to 4 °C during sampling. Glass or PTFE tubing only shall be used. If the sampler uses a peristaltic pump, a minimum length of compressible silicone rubber tubing may be used in the pump only. Before use, the tubing shall be thoroughly rinsed with methanol, followed by repeated rinsing with reagent water (Section 7.4) to minimize sample contamination. An integrating flow meter is used to collect proportional composite samples.

6.2 Extraction apparatus.

6.2.1 Bottle or beaker: 1500-to 2000-mL capacity.

6.2.2 Separatory funnel: 500-to 2000-mL, glass, with PTFE stopcock.

6.2.3 Magnetic stirrer: Corning Model 320, or equivalent, with stirring bar.

6.3 Polyethylene gloves: For handling samples and extraction equipment (Fisher 11–394–110–B, or equivalent).

6.4 Graduated cylinders: 1000-mL, 100-mL, and 10-mL nominal.

6.5 Centrifuge: Capable of accepting 50-mL centrifuge tubes and achieving 3000 RPM.

6.5.1 Centrifuge tubes.

6.5.1.1 35-mL nominal, with PTFE-lined screw-cap.

6.5.1.2 15-mL nominal, conical graduated, with ground-glass stopper.

6.6 Concentration apparatus.

6.6.1 Kuderna-Danish (K–D) concentrator tube: 10-mL, graduated (Kontes K–570050–1025, or equivalent) with calibration verified. Ground-glass stopper (size 19/22 joint) is used to prevent evaporation of extracts.

6.6.2 Kuderna-Danish (K–D) evaporation flask: 1000-mL (Kontes K–570001–1000, or equivalent), attached to concentrator tube with springs (Kontes K–662750–0012).

6.6.3 Snyder column: Three-ball macro (Kontes K–503000–0232, or equivalent).

6.6.4 Snyder column: Two-ball micro (Kontes K–469002–0219, or equivalent).

6.6.5 Boiling chips: Approximately 10/40 mesh, extracted with methylene chloride and baked at 450 °C for a minimum of one hour.

6.6.6 Nitrogen evaporation apparatus: Equipped with a water bath controlled at 35 to 40 °C (N-Evap, Organomation Associates, Inc., South Berlin, MA, or equivalent), installed in a fume hood. This device may be used in place of the micro-Snyder column concentrator in Section 6.6.4 above.

6.7 Water bath: Heated, with concentric ring cover, capable of temperature control (± 2 °C), installed in a fume hood.

6.8 Sample vials: Amber glass, 1- to 3-mL, with PTFE-lined screw-cap.

6.9 Balances.

6.9.1 Analytical: Capable of weighing 0.1 mg.

6.9.2 Top loading: Capable of weighing 10 mg.

6.10 pH meter.

6.11 Gas chromatograph: Shall have splitless or on-column injection port for capillary column, temperature program with 50°C hold, and shall meet all of the performance specifications in Section 9.

6.12 Gas chromatographic column: 30 m (±5 m) × 0.25 mm (±0.02 mm) I.D. × 0.25 micron, 5% phenyl, 94% methyl, 1% vinyl silicone bonded-phase fused-silica capillary column (J & W DB–5, or equivalent).

6.13 Mass spectrometer: 70 eV electron impact ionization, shall repetitively scan from 42 to 450 amu in 0.95 to 1.00 second, and shall produce a unit resolution (valleys between m/z 441–442 less than 10% of the height of the 441 peak), background-corrected mass spectrum from 50 ng decafluorotriphenylphosphine (DFTPP) introduced through the GC inlet. The spectrum shall meet the mass-intensity criteria in Table 3 (Reference 7). The mass spectrometer shall be interfaced to the GC such that the end of the capillary column terminates within 1 cm of the ion source, but does not intercept the electron or ion beams. All portions of the column which connect the GC to the ion source shall remain at or above the column temperature during analysis to preclude condensation of less volatile compounds.

6.14 Data system: Shall collect and record MS data, store mass-intensity data in spectral

18.0 Glossary of Definitions and Purposes

These definitions and purposes are specific to this method but have been conformed to common usage as much as possible.

18.1 Units of weight and measure and their abbreviations.

18.1.1 Symbols.

°C degrees Celsius
µg microgram
µL microliter
< less than
> greater than
% percent

18.1.2 Alphabetical characters.

cm centimeter
g gram
h hour
ID inside diameter
in inch
L liter
m meter
mg milligram
min minute
mL milliliter
mm millimeter
N normal; gram molecular weight of solute divided by hydrogen equivalent of solute, per liter of solution
OD outside diameter
ppb part-per-billion
ppm part-per-million
ppt part-per-trillion
psig pounds-per-square inch gauge
v/v volume per unit volume
w/v weight per unit volume

18.2 Definitions and acronyms (in alphabetical order).

Analyte: AOX tested for by this method.

Calibration standard (CAL): A solution prepared from a secondary standard and/or stock solution which is used to calibrate the response of the instrument with respect to analyte concentration.

Calibration verification standard (VER): The mid-point calibration standard (CS3) that is used to verify calibration.

Field blank: An aliquot of reagent water or other reference matrix that is placed in a sample container in the laboratory or the field, and treated as a sample in all respects, including exposure to sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the field blank is to determine if the field or sample transporting procedures and environments have contaminated the sample.

IPR: Initial precision and recovery; four aliquots of the diluted PAR standard analyzed to establish the ability to generate acceptable precision and accuracy. An IPR is performed prior to the first time this method is used and any time the method or instrumentation is modified.

Laboratory blank: See Method blank.

Laboratory control sample (LCS): See Ongoing precision and recovery sample (OPR).

Laboratory reagent blank: See Method blank.

May: This action, activity, or procedural step is neither required nor prohibited.

May not: This action, activity, or procedural step is prohibited.

Method blank: An aliquot of reagent water that is treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, internal standards, and surrogates that are used with samples. The method blank is used to determine if analytes or interferences are present in the laboratory environment, the reagents, or the apparatus.

Minimum level (ML): The level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Must: This action, activity, or procedural step is required.

OPR: Ongoing precision and recovery standard; a laboratory blank spiked with a known quantity of analyte. The OPR is analyzed exactly like a sample. Its purpose is to assure that the results produced by the laboratory remain within the limits specified in this method for precision and recovery.

PAR: Precision and recovery standard; secondary standard that is diluted and spiked to form the IPR and OPR.

Preparation blank: See Method blank.

Primary dilution standard: A solution containing the specified analytes that is purchased or prepared from stock solutions and diluted as needed to prepare calibration solutions and other solutions.

Quality control check sample (QCS): A sample containing all or a subset of the analytes at known concentrations. The QCS is obtained from a source external to the laboratory or is prepared from a source of standards different from the source of calibration standards. It is used to check laboratory performance with test materials prepared external to the normal preparation process.

Reagent water: Water demonstrated to be free from the analyte of interest and potentially interfering substances at the method detection limit for the analyte.

Relative standard deviation (RSD): The standard deviation multiplied by 100, divided by the mean.

RSD: See Relative standard deviation.

Should: This action, activity, or procedural step is suggested but not required.

Stock solution: A solution containing an analyte that is prepared using a reference material traceable to EPA, the National Institute of Science and Technology (NIST), or a source that will attest to the purity and authenticity of the reference material.

VER: See Calibration verification standard.

Method 1653—Chlorinated Phenolics in Wastewater by In Situ Acetylation and GCMS

1.0 Scope and Application

1.1 This method is for determination of chlorinated phenolics (chlorinated phenols, guaiacols, catechols, vanillins, syringaldehydes) and other compounds associated with the Clean Water Act; the Resource Conservation and Recovery Act; and the Comprehensive Environmental Response, Compensation, and Liability Act; and that are amenable to in situ acetylation, extraction, and analysis by capillary column gas chromatography/mass spectrometry (GCMS). This method is based on existing methods for determination of chlorophenolics in pulp and paper industry wastewaters (References 1 and 2).

1.2 The chemical compounds listed in Table 1 may be determined in waters and, specifically, in in-process streams and wastewaters associated with the pulp and paper industry. The method is designed to meet the survey and monitoring requirements of the Environmental Protection Agency (EPA).

1.3 The detection limit of this method is usually dependent on the level of interferences rather than instrumental limitations. The method detection limits (MDLs) in Table 2 typify the minimum quantity that can be detected with no interferences present.

1.4 The GCMS portions of this method are for use only by persons experienced with GCMS or under the close supervision of such qualified persons. Laboratories unfamiliar with analyses of environmental samples by GCMS should run the performance tests in Reference 3 before beginning.

1.5 Any modification of the method beyond those expressly permitted is subject to the application and approval of alternative test procedures under 40 CFR Parts 136.4 and 136.5.

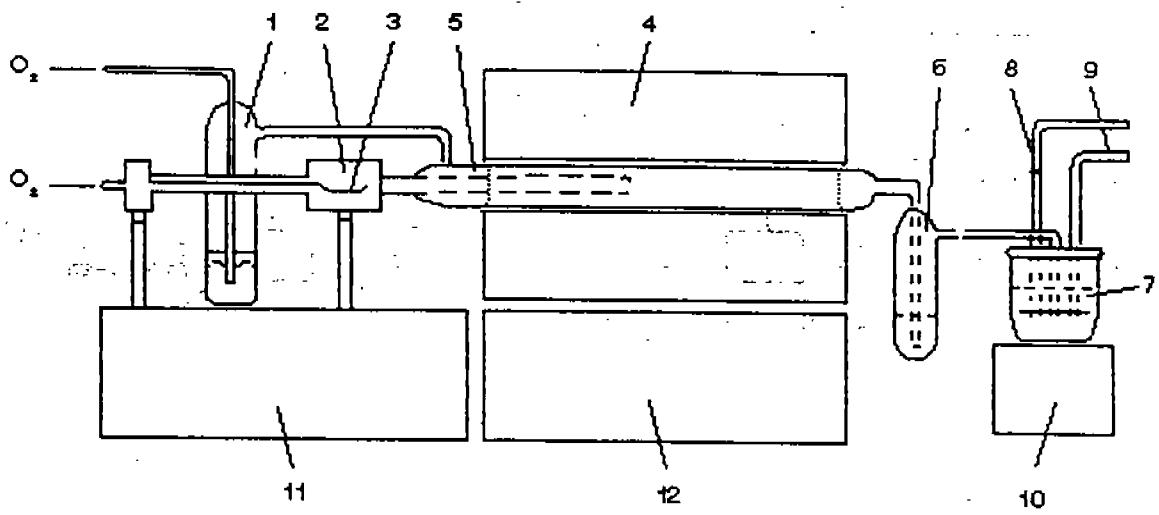
2.0 Summary of Method

2.1 A 1000-mL aliquot of water is spiked with stable isotopically labeled analogs of the compounds of interest and an internal standard. The solution is adjusted to neutral pH, potassium carbonate buffer is added, and the pH is raised to 9–11.5. The chlorophenolics are converted in situ to acetates by the addition of acetic anhydride. After acetylation, the solution is extracted with hexane. The hexane is concentrated to a final volume of 0.5 mL, an instrument internal standard is added, and an aliquot of the concentrated extract is injected into the gas chromatograph (GC). The compounds are separated by GC and detected by a mass spectrometer (MS). The labeled compounds and internal standard serve to correct the variability of the analytical technique.

2.2 Identification of a pollutant (qualitative analysis) is performed by comparing the relative retention time and mass spectrum to that of an authentic standard. A compound is identified when its relative retention time and mass spectrum agree.

2.3 Quantitative analysis is performed in one of two ways by GCMS using extracted ion-current profile (EICP) areas: (1) For those compounds listed in Table 1 for which standards and labeled analogs are available, the GCMS system is calibrated and the compound concentration is determined using an isotope dilution technique; (2) for those compounds listed in Table 1 for which authentic standards but no labeled compounds are available, the GCMS system is calibrated and the compound concentration is determined using an internal standard technique.

2.4 Quality is assured through reproducible calibration and testing of the extraction and GCMS systems.



1. Stripping Device
2. Sample inlet for AOX
3. AOX Sample
4. Furnace
5. Combustion Tube
6. Absorber filled with H_2SO_4
7. Titration cell
8. Working electrodes
9. Measuring electrodes
10. Stirrer
11. Titration micro-processor
12. Gas flow and temperature control device

Figure 4. Schematic of an AOX Apparatus

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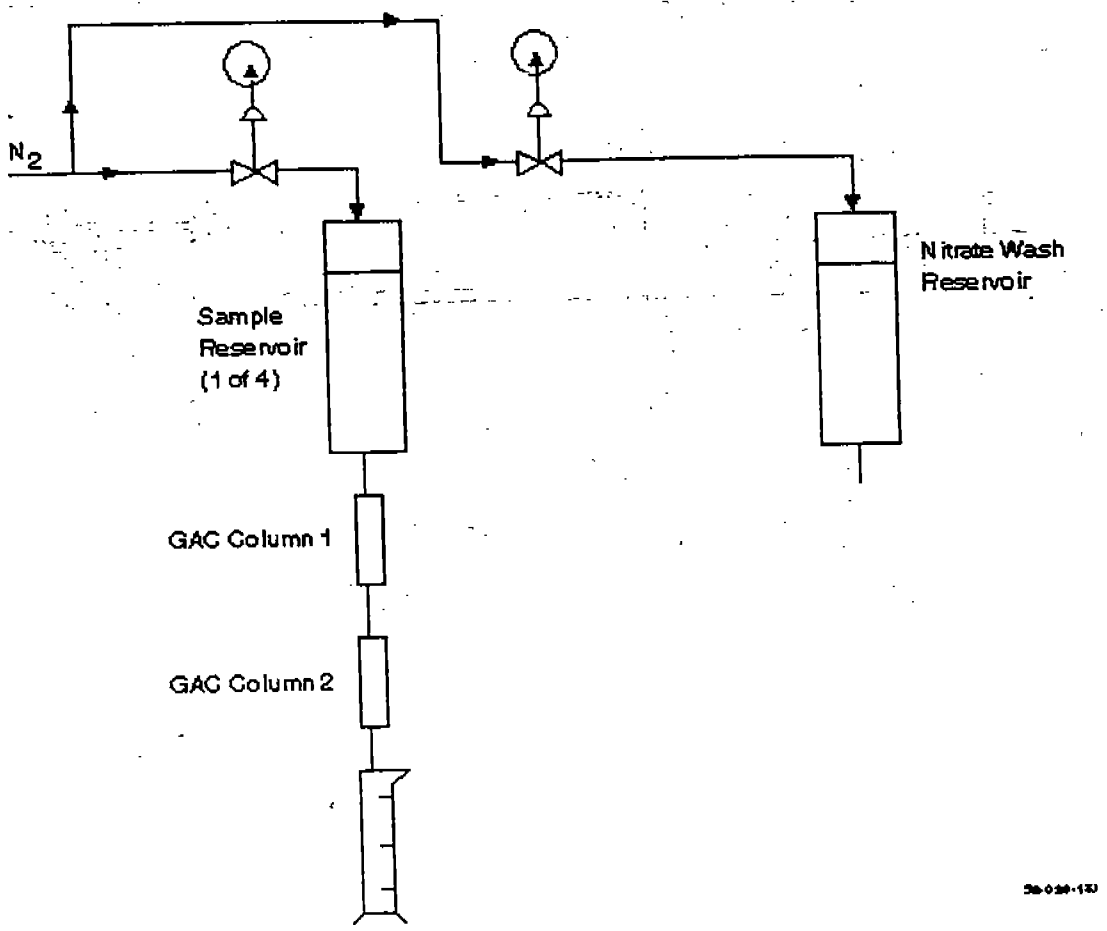


Figure3. Schematic of the Column Adsorption System

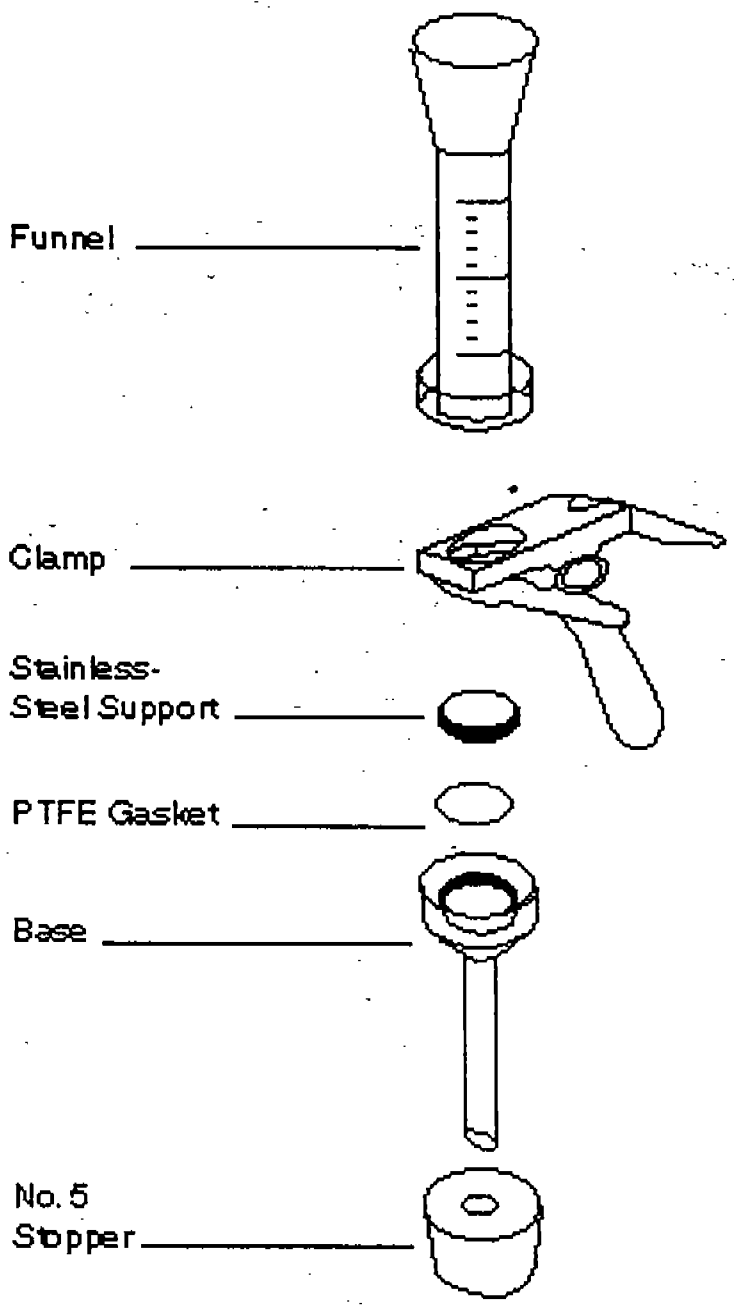


Figure 2. Filter Apparatus

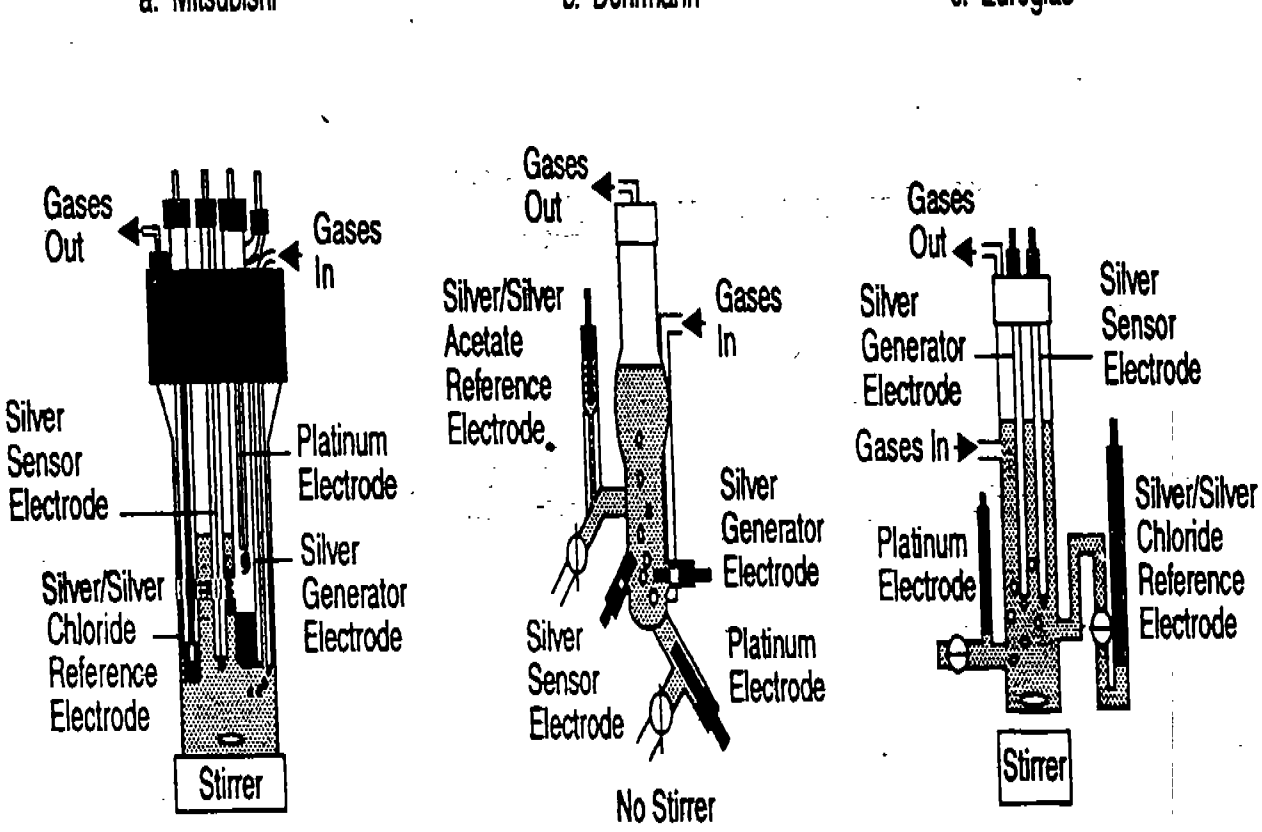


Figure 1. Microcoulometric Titration Cells (from Reference 7)

13.0 Method Performance

The specifications contained in this method are based on data from a single laboratory and from a large-scale study of the pulp and paper industry.

14.0 Pollution Prevention

14.1 The solvents used in this method pose little threat to the environment when recycled and managed properly.

14.2 Standards should be prepared in volumes consistent with laboratory use to minimize the volume of expired standards to be disposed.

15.0 Waste Management

15.1 It is the laboratory's responsibility to comply with all federal, state, and local regulations governing waste management, particularly the hazardous waste identification rules and land disposal restrictions, and to protect the air, water, and land by minimizing and controlling all releases from fume hoods and bench operations. Compliance with all sewage discharge permits and regulations is also required.

15.2 Samples preserved with HCl or H_2SO_4 to pH <2 are hazardous and must be neutralized before being disposed, or must be handled as hazardous waste. Acetic acid and silver acetate solutions resulting from cell flushing must be disposed of in accordance with all applicable federal, state, and local regulations.

15.3 For further information on waste management, consult "The Waste Management Manual for Laboratory Personnel," and "Less is Better: Laboratory Chemical Management for Waste Reduction," both available from the American Chemical Society's Department of Government Relations and Science Policy, 1155 16th Street N.W., Washington, D.C. 20036.

16.0 References

16.1 "Total Organic Halide, Methods 450.1—Interim," Prepared by Stephen Billets and James J. Lichtenberg, USEPA, Office of Research and Development, Physical and Chemical Methods Branch, EMSL-Cincinnati, Cincinnati, OH 45268, EPA 600/4–81–056 (1981).

16.2 Method 9020, USEPA Office of Solid Waste, "Test Methods for Evaluating Solid Waste, SW–846," Third Edition, 1987.

16.3 "Determination of Adsorbable Organic Halogens (AOX)," "German Standard Methods for the Analysis of Water, Waste Water and Sludge—General Parameters of Effects and Substances," Deutsche Industrie Norm (DIN) Method 38 409, Part 14, DIN German Standards Institute, Beuth Verlag, Berlin, Germany (1987).

16.4 "Water Quality: Determination of Adsorbable Organic Halogens (AOX)," International Organization for Standard/Draft International Standardization (ISO/DIS) Method 9562 (1988).

16.5 "Organically Bound Chlorine by the AOX Method," SCAN–W 9:89, Secretariat, Scandinavian Pulp, Paper and Board Testing Committee, Box 5604, S–11486, Stockholm, Sweden (1989).

16.6 Method 5320, "Dissolved Organic Halogen," from "Standard Methods for the Examination of Water and Wastewater," 5320, American Public Health Association, 1015 15th St. NW, Washington, DC 20005 (1989).

16.7 "Canadian Standard Method for the Determination of Adsorbable Organic Halides (AOX) in Waters and Wastewaters," Environment Canada and The Canadian Pulp and Paper Association (1990).

16.8 40 CFR Part 136, Appendix B.

16.9 "Working with Carcinogens," DHEW, PHS, CDC, NIOSH, Publication 77–206, (Aug 1977).

16.10 "OSHA Safety and Health Standards, General Industry" OSHA-2206, 29 CFR 1910 (Jan 1976).

16.11 "Safety in Academic Chemistry Laboratories," ACS Committee on Chemical Safety (1979).

16.12 "Methods 330.4 and 330.5 for Total Residual Chlorine," USEPA, EMSL-Cincinnati, Cincinnati, OH 45268, EPA–4–79–020 (March 1979).

16.13 "Validation of Method 1650: Determination of Organic Halide," Analytical Technologies Inc., ERCE Contract 87–3410, November 15, 1990. Available from the EPA Sample Control Center, DynCorp, 300 N. Lee St., Alexandria, VA 22314 (703–519–1140).

17.0 Figures

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11.3.3.3 Once the flow rate for the blank has been established, the same adsorption conditions must be applied to all subsequent samples during that eight-hour shift, or until another method blank is processed, whichever comes first. To aid in overcoming breakthrough problems, a lower gas pressure (and, therefore, flow rate) may be used for processing of samples, if desired. If the sample adsorption unit is disassembled or cleaned, the flow rate must be checked before processing additional samples.

11.3.3.4 Elute the pair of columns with 2 mL of nitrate wash solution. The flow rate of nitrate wash solution must not exceed 3 mL/min.

11.3.3.5 Separate the columns and mark for subsequent analysis.

11.3.4 The adsorption of sample volumes is performed in a similar fashion. Fill the sample reservoir with the sample volume chosen for the analysis (Section 11.1), that has been preserved as described in Section 8. All analyses must be performed with this volume (sample volume plus reagent water, as needed) in order to maintain a flow rate no greater than that determined for the blank (see Section 11.3.3).

11.3.4.1 Use the same gas pressure for sample adsorption as is used for the blank.

11.3.4.2 Elute the columns with 2 mL of the nitrate wash solution.

11.3.4.3 Separate the columns and mark for subsequent analysis.

11.3.5 If it is desirable to make measurements at levels lower than can be achieved with the sample volume chosen, or if the instrument response of an undiluted sample is less than three times the instrument response of the blank (Section 12.6.3), a larger sample volume must be used.

11.4 Combustion and titration.

11.4.1 Polycarbonate filter and GAC from batch adsorption.

11.4.1.1 Place the folded polycarbonate filter containing the GAC in a quartz combustion boat, close the airlock, and proceed with the automated sequence.

11.4.1.2 Record the signal from the micro-coulometer for a minimum integration time of 10 minutes and determine the concentration of Cl^- from calibration data, per Section 12.

11.4.2 Columns from column adsorption.

11.4.2.1 Using the push rod, push the carbon and the Cerafelt plug(s) from the first column into a combustion boat. Proceed with the automated sequence.

11.4.2.2 Record the signal from the micro-coulometer for a minimum integration time of 10 minutes and determine the concentration of Cl^- for the first column from calibration data, per Section 12.

11.4.2.3 Repeat the automated sequence with the second column.

11.4.2.4 Determine the extent of breakthrough of organic halides from the first column to the second column, as described in Section 12.

11.4.3 The two columns that are used for the method blank must be combusted separately, as is done for samples. 11.5 Duplicate sample analysis: All samples to be reported for regulatory compliance purposes must be analyzed in duplicate. This requirement applies to both the batch and column adsorption procedures. In addition, if it is necessary to dilute the sample for the purposes of reducing breakthrough or maintaining the concentration within the calibration range, a more or less dilute sample must be analyzed. The adsorption volumes used for analysis of undiluted samples, diluted samples, and all replicates must be the same as the volume used for QC tests and calibration (Sections 9 and 10).

11.5.1 Using results from analysis of one sample volume (Section 11.4) and the procedure in Section 11.1.2, determine if the dilution used was within the calibration range of the instrument and/or if breakthrough exceeded the specification in Section 12.3.1. If the breakthrough criterion was exceeded or the sample was not within the calibration range, adjust the dilution volume as needed. If the breakthrough criterion was not exceeded and the sample dilution was within the calibration range, a second volume at the same dilution level may be used.

11.5.2 Adsorb the sample using the same technique (batch or column) used for the first sample volume. Combust the GAC from the second volume as described in Section 11.4, and calculate the results as described in Section 12. Compare the results of the two analyses as described in Section 12.4.

11.5.3 Duplicate analyses are not required for method blanks, as different dilution levels are not possible.

11.5.4 Duplicate analyses of the PAR standard used for calibration verification (Section 9.10) are not required.

12.0 Data Analysis and Calculations

12.1 Batch Adsorption Method: Calculate the blank-subtracted concentration of adsorbable organic halide detected in each sample (in micrograms of chloride per liter) using the following equation:

$$AOX(\mu g/L) = \frac{(C - B)}{V}$$

Where:

C=µg Cl^- from micro-coulometer for the sample

B=µg Cl^- from micro-coulometer for the reagent water blank (Section 9.4.1)

V = volume of sample in liters

This calculation is performed for each of the two dilution levels analyzed for each sample.

12.2 Column Adsorption Method: Calculate the blank-subtracted concentration of adsorbable organic halide detected in each sample (in micrograms of chloride per liter) using the following equation:

$$AOX(\mu g/L) = \frac{\left[(C_1 + C_2) - (B_1 + B_2)\right]}{V}$$

Where:

C_1=µg Cl^- from micro-coulometer for first column from the sample

C_2=µg Cl^- from micro-coulometer for second column from the sample

B_1=µg from micro-coulometer for first column from the reagent water blank (Section 9.4.1)

B_2=µg Cl^- from micro-coulometer for second column from the reagent water blank (Section 9.4.1)

V=volume of sample in liters

12.3 Percent breakthrough: For each sample analyzed by the column method, calculate the percent breakthrough of halide from the first column to the second column, using the following equation:

$$\%\,\text{Breakthrough} = \frac{(C_2 - B_2)(100)}{\left[(C_1 - B_1) + (C_2 - B_2)\right]}$$

12.3.1 For samples to be reported for regulatory compliance purposes, the percent breakthrough must be less than or equal to 25% for both of the two analyses performed on each sample (see Section 11.5).

12.3.2 If the breakthrough exceeds 25%, dilute the affected sample further, maintaining the amount of halide at least three times higher than the level of blank, and reanalyze the sample. Ensure that the sample is also analyzed at a second level of dilution that is at least a factor of 2 different (and still higher than three times the blank).

12.4 Relative percent difference (RPD): Calculate the relative percent difference between the results of the two analyses of each sample, using the following equation:

$$RPD = \frac{200\left|(AOX_1 - AOX_2)\right|}{\left[(AOX_1 + AOX_2)\right]}$$

12.5 High concentrations of AOX: If the amount of halide from either analysis exceeds the calibration range, dilute the sample and reanalyze, maintaining at least a factor of 2 difference in the dilution levels of the two portions of the sample used.

12.6 Low concentrations of AOX: The blank-subtracted final result from the batch procedure or the sum of the blank-subtracted results from the two carbon columns should be significantly above the level of the blank.

12.6.1 If the instrument response for a sample exceeds the instrument response for the blank by a factor of at least 3, the result is acceptable.

12.6.2 If the instrument response for a sample is less than three times the instrument response for the blank, and the sample has been diluted, analyze a less dilute aliquot of sample.

12.6.3 If the instrument response of an undiluted sample containing AOX above the minimum level is less than three times the instrument response for the blank, the result is suspect and may not be used for regulatory compliance purposes. In this case, find the cause of contamination, correct the problem, and reanalyze the sample under the corrected conditions.

12.7 Report results that meet all of the specifications in this method as the mean of the blank-subtracted values from Section 12.1 or 12.2 for the two analyses at different dilution levels, in µg/L of Cl^- (not as 2,4,6-trichlorophenol), to three significant figures. Report the RPD of the two analyses. For samples analyzed by the column procedure, also report the percent breakthrough.

prepared for that point, this standard shall be analyzed, and the calibration factor (Section 10.6.3) and calibration linearity (Section 10.6.4) shall be computed using the new calibration point. All points used in the calibration must meet the 80 to 111% recovery specification.

11.0 Procedure

11.1 Sample dilution: Many samples will contain high concentrations of halide. If analyzed without dilution, the micro-coulometer can be overloaded, resulting in frequent cell cleaning and downtime. The following guidance is provided to assist in estimating dilution levels.

11.1.1 Paper and pulp mills that employ chlorine bleaching: Samples from pulp mills that use a chlorine bleaching process may overload the micro-coulometer. To prevent system overload, the maximum volume suggested for paper industry samples that employ halide in the bleaching process is 100 mL. An adsorption volume as small as 25 mL may be used, provided the concentration of AOX in the sample can be measured reliably, as defined by the requirements in Section 9.11. To minimize volumetric error, an adsorption volume less than 25 mL may not be used. If AOX cannot be measured reliably in a 100-mL sample volume, a sample volume to a maximum of 1000 mL must be used. The sample and adsorption volumes are suggested for paper industry samples employing chlorine compounds in the bleaching process:

Paper or pulp mill stream	Sample volume (mL)*	Adsorption volume (mL)
Evaporator condensate	100.0	100
Process water	100.0	100
Pulp mill effluent	30.0	50
Paper mill effluent	10.0	25
Combined mill effluent	5.0	25
Combined bleach effluent	1.0	25
C-stage filtrate	0.5	25
E-stage filtrate	0.5	25

*Assumes dilution to final volume of 100 mL. All sample aliquots (replicates, diluted samples) must be analyzed using the same fixed final volume (sample volume plus reagent water, as needed).

11.1.2 Sample dilution procedure.

11.1.2.1 Partially fill a precleaned volumetric flask with pH < 2 reagent water, allowing for the volume of sample to be added.

11.1.2.2 Mix sample thoroughly by tumbling or shaking vigorously.

11.1.2.3 Immediately withdraw the required sample aliquot using a pipet or micro-syringe.

Note: Because it will be necessary to rinse the pipet or micro-syringe (Section 11.1.2.5), it may be necessary to pre-calibrate the pipet or micro-syringe to assure that the exact volume desired will be delivered.

11.1.2.4 Dispense or inject the aliquot into the volumetric flask.

11.1.2.5 Rinse the pipet or syringe with small portions of reagent water and add to the flask.

11.1.2.6 Dilute to the mark with pH < 2 reagent water.

11.1.3 All samples to be reported for regulatory compliance monitoring purposes must be analyzed in duplicate, as described in Section 11.5.

11.1.4 Pulp and Paper in-process samples: The concentration of organic halide in in-process samples has been shown to be 20 to 30% greater using the micro-column adsorption technique than using the batch adsorption technique. For this reason, the micro-column technique shall be used for monitoring in-process samples. Examples of in-process samples include: combined bleach plant effluent, C-stage filtrate, and E-stage filtrate.

11.2 Batch adsorption and filtration.

11.2.1 Place the appropriate volume of sample (diluted if necessary), preserved as described in Section 8, into an Erlenmeyer flask.

11.2.2 Add 5 mL of nitrate stock solution to the sample aliquot.

11.2.3 Add one level scoop of activated carbon that has passed the quality control tests in Section 9.

11.2.4 Shake the suspension for at least one hour in a mechanical shaker.

11.2.5 Filter the suspension through a polycarbonate membrane filter. Filter by suction until the liquid level reaches the top of the carbon.

11.2.6 Wash the inside surface of the filter funnel with 25 mL (±5 mL) of nitrate wash solution in several portions. After the level of the final wash reaches the top of the GAC, filter by suction until the cake is barely dry. The time required for drying should be minimized to prevent exposure of the GAC to halogen vapors in the air, but should be sufficient to permit drying of the cake so that excess water is not introduced into the combustion apparatus. A drying time of approximately 10 seconds under vacuum has been shown to be effective for this operation.

11.2.7 Carefully remove the top of the filter holder, making sure that no carbon is lost. This operation is most successfully performed by removing the clamp, tilting the top of the filter holder (the funnel portion) to one side, and lifting upward.

11.2.8 Using a squeeze bottle or micro-syringe, rapidly rinse the carbon from the inside of the filter holder onto the filter cake using small portions of wash solution. Allow the cake to dry under vacuum for no more than 10 seconds after the final rinse. Immediately turn the vacuum off.

11.2.9 Using tweezers, carefully fold the polycarbonate filter in half, then in fourths, making sure that no carbon is lost.

11.3 Column adsorption.

11.3.1 Column preparation: Prepare a sufficient number of columns for one day's operation as follows:

11.3.1.1 In a glove box or area free from halide vapors, place a plug of Cerafelt into the end of a clean glass column.

11.3.1.2 Fill the glass column with one level scoop (approximately 40 mg) of granular activated carbon that has passed the quality control tests in Section 9.

11.3.1.3 Insert a Cerafelt plug into the open end of the column to hold the carbon in place.

11.3.1.4 Store the columns in a glass jar with PTFE lined screw-cap to prevent infiltration of halide vapors from the air.

11.3.2 Column setup.

11.3.2.1 Install two columns in series in the adsorption module.

11.3.2.2 If the sample is known or expected to contain particulates that could prevent free flow of sample through the micro-columns, a Cerafelt plug is placed in the tubing ahead of the columns. If a measurement of the OX content of the particulates is desired, the Cerafelt plug can be washed with nitrate solution, placed in a combustion boat, and processed as a separate sample.

11.3.3 Adjusting sample flow rate: Because the flow rate used to load the sample onto the columns can affect the ability of the GAC to adsorb organic halides, the flow rate of the method blank is measured, and the gas pressure used to process samples is adjusted acccrdingly. The flow rate of the blank, which is composed of acidified reagent water and contains no particulate matter, should be greater than the flow rate of any sample containing even small amounts of particulate matter.

11.3.3.1 Fill the sample reservoir with the volume of reagent water chosen for the analysis (Section 9.4.1.2) that has been preserved and acidified as described in Section 8. Cap the reservoir.

11.3.3.2 Adjust the gas pressure per the manufacturer's instructions. Record the time required for the entire volume of reagent water to pass through both columns. The flow rate must not exceed 3 mL/min over the duration of the time required to adsorb the volume. If this flow rate is exceeded, adjust gas pressure, prepare another blank, and repeat the adsorption.

9.6.1 The procedure for preparing duplicate sample aliquots is described in Section 11.5.

9.6.2 Calculate the RPD by following the same procedure described in Section 12.4.

9.6.3 If the RPD is greater than 20%, the analyses must be repeated.

9.6.4 If the RPD remains greater than 20%, the result may not be reported for regulatory compliance purposes.

9.7 The specifications in this method can be met if the apparatus used is calibrated properly and maintained in a calibrated state. The standards used for calibration (Section 10), calibration verification (Section 9.9), and for initial (Section 9.2.2) and ongoing (Section 9.10) precision and recovery should be identical, so that the most precise results will be obtained.

9.8 Depending on specific program requirements, field duplicates may be collected to determine the precision of the sampling technique.

9.9 At the beginning and end of each eight-hour shift during which analyses are performed, system performance and calibration are verified. Verification of system performance and calibration may be performed more frequently, if desired.

9.9.1 If performance and calibration are verified at the beginning and end of each shift (or more frequently), samples analyzed during that period are considered valid.

9.9.2 If performance and calibration are not verified at both the beginning and end of a shift (or more frequently), samples analyzed during that period must be reanalyzed.

9.9.3 If calibration is verified at the beginning of a shift, recalibration using the five standards described in Section 10.6 is not necessary; otherwise, the instrument must be recalibrated prior to analyzing samples (Section 10).

9.9.4 Cell maintenance and other changes to the analytical system that can affect system performance may not be performed during the eight-hour (or shorter) shift.

9.10 Calibration verification and ongoing precision and recovery: Calibration and system performance are verified by the analysis of the 100 µg/L PAR standard.

9.10.1 Analyze a blank (Section 9.4) and analyze the PAR standard (Section 7.12.4) immediately thereafter at the beginning and end of each shift. Compute the concentration of organic halide in the blank and in the PAR standard using the procedures in Section 12. The blank shall be less than 2 µg Cl^- (20 µg/L equivalent).

9.10.2 Subtract the result for the blank from the result of the PAR standard using the procedures in Section 12, and compute the percent recovery of the blank-subtracted PAR standard. The percent recovery shall be in the range of 78 to 116%.

9.10.3 If the recovery is within this range, the analytical process is in control and analysis of blanks and samples may proceed. If, however, the recovery is not within the acceptable range, the analytical process is not in control. In this event, correct the problem and repeat the ongoing precision and recovery test (Section 9.10), or recalibrate (Sections 10.5 through 10.6).

9.10.4 If the recovery is not within the acceptable range for the PAR standard analyzed at the end of the eight-hour shift, correct the problem, repeat the ongoing precision and recovery test (Section 9.10), or recalibrate (Sections 10.5 through 10.6), and reanalyze the sample batch that was analyzed during the eight-hour shift.

9.10.5 If the recovery is within the acceptable range at the end of the shift, and samples are to be analyzed during the next eight-hour shift, the end of shift verification may be used as the beginning of shift verification for the subsequent shift, provided the next eight-hour shift begins as the first shift ends.

9.11 It is suggested but not required that the laboratory develop a statement of data quality for AOX and develop QC charts to form a graphic demonstration of method performance. Add results that pass the specification in Section 9.10.2 to initial and previous ongoing data. Develop a statement of data quality by calculating the average percent recovery (R) and the standard deviation of percent recovery (s_r). Express the accuracy as a recovery interval from $R - 2s_r$ to $R + 2s_r$. For example, if R=95% and s_r=5%, the accuracy is 85 to 105%.

10.0 Calibration and Standardization

10.1 Assemble the OX system and establish the operating conditions necessary for analysis. Differences between various makes and models of instruments will require different operating procedures. Laboratories should follow the operating instructions provided by the manufacturer of their particular instrument. Sensitivity, instrument detection limit, precision, linear range, and interference effects must be investigated and established for each particular instrument. Calibration is performed when the instrument is first set up and when calibration cannot be verified (Section 9.9).

10.2 Cell performance test: Inject 100 µL of the sodium chloride solution (10 µg Cl^-; Section 7.4) directly into the titration cell electrolyte. Adjust the instrument to produce a reading of 10 µg Cl^-.

10.3 Combustion system test: This test can be used to assure that the combustion/micro-coulometer systems are performing properly without introduction of carbon. This test should be used during initial instrument setup and when instrument performance indicates a problem with the combustion system.

10.3.1 Designate a quartz boat for use with the ammonium chloride (NH_4Cl) solution only.

10.3.2 Inject 100 µL of the NH_4Cl solution (Section 7.5) into this boat and proceed with the analysis.

10.3.3 The result shall be between 9.5 and 10.5 µg Cl^-. If the recovery is not between these limits, the combustion or micro-coulometer systems are not performing properly. Check the temperature of the combustion system, verify that there are no leaks in the combustion system, confirm that the cell is performing properly (Section 10.2), and then repeat the test.

10.4 Trichlorophenol combustion test: This test can be used to assure that the combustion/micro-coulometer systems are performing properly when carbon is introduced. It should be used during instrument setup and when it is necessary to isolate the adsorption and combustion steps.

10.4.1 Inject 10 µL of the 1 mg/mL trichlorophenol stock solution (Section 7.12.2) onto one level scoop of GAC in a quartz boat.

10.4.2 Immediately proceed with the analysis to prevent loss of trichlorophenol and to prevent contamination of the carbon.

10.4.3 The result shall be between 9.0 and 11.0 µg Cl^-. If the recovery is not between these limits, the combustion/micro-coulometer system shall be adjusted and the test repeated until the result falls within these limits.

10.5 Background level of Cl^-: Determine the average background level of Cl^- for the entire analytical system as follows:

10.5.1 Using the procedure in Section 11 (batch or column) that will be used for the analysis of samples, determine the background level of Cl^- in each of three portions of reagent water. The volume of reagent water used shall be the same as the volume used for analysis of samples.

10.5.2 Calculate the average (mean) concentration of Cl^- and the standard deviation of the concentration.

10.5.3 The sum of the average concentration plus two times the standard deviation of the concentration shall be less than 20 µg/L. If not, the water or carbon shall be replaced, or the adsorption system moved to an area free of organic halide vapors, and the test (Section 10.5) shall be repeated. Only after this test is passed may calibration proceed.

10.6 Calibration by external standard: A calibration line encompassing the calibration range is developed using solutions of 2,4,6-trichlorophenol.

10.6.1 Analyze each of the five calibration solutions (Section 7.12.3) using the procedure in Section 11 (batch or column) that will be used for the analysis of samples, and the same procedure that was used for determination of the system background (Section 10.5). Analyze these solutions beginning with the lowest concentration and proceeding to the highest. Record the response of the micro-coulometer to each calibration solution.

10.6.2 Prepare a method blank as described in Section 9.4. Subtract the value of the blank from each of the five calibration results, as described in Section 12.

10.6.3 Calibration factor (ratio of response to concentration) Using the blank subtracted results, compute the calibration factor at each calibration point, and compute the average calibration factor and the relative standard deviation (coefficient of variation; Cv) of the calibration factor over the calibration range.

10.6.4 Linearity: The Cv of the calibration factor shall be less than 20%; otherwise, the calibration shall be repeated after adjustment of the combustion/micro-coulometer system and/or preparation of fresh calibration standards.

10.6.5 Using the average calibration factor, compute the percent recovery at each calibration point. The recovery at each calibration point shall be within the range of 80 to 111%. If any point is not within this range, a fresh calibration standard shall be

136, Appendix B) is less than or equal to the MDL in this method or one-third the regulatory compliance level, whichever is higher.

9.1.3 The laboratory shall spike 10% of the samples with known concentrations of 2,4,6-trichlorophenol to monitor method performance and matrix interferences (interferences caused by the sample matrix). This test is described in Section 9.3. When results of these spikes indicate atypical method performance for samples, the samples are diluted to bring method performance within acceptable limits.

9.1.4 Analyses of blanks are required to demonstrate freedom from contamination. The procedures and criteria for analysis of blanks are described in Section 9.4.

9.1.5 The laboratory shall, on an ongoing basis, demonstrate through the analysis of the precision and recovery (PAR) standard that the analysis system is in control. These procedures are described in Section 9.10.

9.1.6 The laboratory shall perform quality control tests on the granular activated carbon. These procedures are described in Section 9.5.

9.1.7 Samples are analyzed in duplicate to demonstrate precision. These procedures are described in Section 9.6.

9.2 Initial demonstration of laboratory capability.

9.2.1 Method Detection Limit (MDL): To establish the ability to detect AOX, the laboratory should determine the MDL per the procedure in 40 CFR 136, Appendix B using the apparatus, reagents, and standards that will be used in the practice of this method. An MDL less than or equal to the MDL in Section 1.3 should be achieved prior to the practice of this method.

9.2.2 Initial precision and recovery (IPR): To establish the ability to generate acceptable precision and recovery, the laboratory shall perform the following operations:

9.2.2.1 Analyze four aliquots of the PAR standard (Section 7.12.4) and a method blank according to the procedures in Sections 9.4 and 11.

9.2.2.2 Using the blank-subtracted results of the set of four analyses, compute the average percent recovery (X) and the standard deviation of the percent recovery (s) for the results.

9.2.2.3 The average percent recovery shall be in the range of 81 to 114 µg/L and the standard deviation shall be less than 8 µg/L. If X and s meet these acceptance criteria, system performance is acceptable and analysis of blanks and samples may begin. If, however, s exceeds the precision limit or X falls outside the range for recovery, system performance is unacceptable. In this case, correct the problem and repeat the test.

9.3 Matrix spikes: The laboratory shall spike a minimum of 10% of samples from a given matrix type (e.g., C-stage filtrate, produced water, treated effluent) in duplicate (MS/MSD). If only one sample from a given matrix type is analyzed, an additional two aliquots of that sample shall be spiked.

9.3.1 The concentration of the analytes spiked into the MS/MSD shall be determined as follows:

9.3.1.1 If, as in compliance monitoring, the concentration of OX is being checked against a regulatory concentration limit, the spiking level shall be at that limit or at one to five times higher than the background concentration determined in Section 9.3.2, whichever concentration is higher.

9.3.1.2 If the concentration of OX is not being checked against a regulatory limit, the spike shall be at the concentration of the precision and recovery standard (PAR; Section 7.12.4) or at one to five times higher than the background concentration determined in Section 9.3.2, whichever concentration is higher.

9.3.2 Analyze one sample out of each batch of 10 samples from each site to determine the background concentration of AOX. If necessary, prepare a solution of 2,4,6-trichlorophenol appropriate to produce a level in the sample one to five times the background concentration. Spike two additional sample aliquots with spiking solution and analyze them to determine the concentration after spiking.

9.3.2.1 Compute the percent recovery of each analyte in each aliquot:

$$\% \text{ Recovery} = \frac{100\ (\text{Found} - \text{Background})}{T}$$

where:

T is the true value of the spike

9.3.2.2 Compute the relative percent difference (RPD) between the two results (not between the two recoveries) as described in Section 12.4.

9.3.2.3 If the RPD is less than 20%, and the recoveries for the MS and MSD are within the range of 78 to 116%, the results are acceptable.

9.3.2.4 If the RPD is greater than 20%, analyze two aliquots of the precision and recovery standard (PAR).

9.3.2.4.1 If the RPD for the two aliquots of the PAR is greater than 20%, the analytical system is out of control. In this case, repair the problem and repeat the analysis of the sample batch, including the MS/MSD.

9.3.2.4.2 If, however, the RPD for the two aliquots of the PAR is less than 20%, dilute the sample chosen for the MS/MSD by a factor of 2–10 (to remain within the working range of the analytical system) and repeat the MS/MSD test. If the RPD is still greater than 20%, the result may not be reported for regulatory compliance purposes. In this case, choose another sample for the MS/MSD and repeat analysis of the sample batch.

9.3.2.5 If the percent recovery for both the MS and MSD are less than 78% or greater than 116%, analyze the precision and recovery (PAR) standard.

9.3.2.5.1 If the recovery of the PAR is outside the 78 to 116% range, the analytical system is out of control. In this case, repair the problem and repeat the analysis of the sample batch, including the MS/MSD.

9.3.2.5.2 If the recovery of the PAR is within the range of 78 to 116%, dilute the sample, MS, and MSD by a factor of 2–10 (to remain within the working range of the analytical system) and re-analyze. If the results of the dilute analyses remain outside of the acceptable range, these results may not be reported for regulatory compliance purposes. In this case, choose another sample for the MS/MSD and repeat the analysis of the sample batch.

9.4 Blanks.

9.4.1 Reagent water blanks: Analyzed to demonstrate freedom from contamination.

9.4.1.1 Analyze a reagent water blank with each batch of samples. The blank must be analyzed immediately preceding calibration verification to allow for blank subtraction and to demonstrate freedom from contamination and memory effects, and must include all details of the procedure to be followed when analyzing samples.

9.4.1.2 Prepare the reagent water blank using a volume of reagent water equivalent to the volume used for sample preparation (Section 11.1). If using the micro-column procedure, adsorb the method blank using two columns, as described in Section 11. Combust the GAC from each column separately, as described in Section 11.

9.4.1.3 If the result from the blank from the batch method or the sum of the results from two columns is more than 20 µg/L, analysis of samples is halted until the source of contamination is eliminated and a blank shows no evidence of contamination at this level.

9.4.2 Nitrate-washed GAC blanks: Analyzed daily to demonstrate that the GAC is free from contamination.

9.4.2.1 Nitrate-washed GAC blank for the batch procedure: Analyze a batch nitrate-washed GAC blank by adding a scoop of dry GAC to the assembled filter apparatus containing the polycarbonate membrane and washing the GAC with the nitrate wash solution (Section 7.10) using the procedure in Section 11.2.6.

9.4.2.2 Nitrate-washed GAC blank for the column procedure: Analyze a column nitrate-washed GAC blank by assembling two carbon columns in series and washing the columns with the nitrate wash solution (Section 7.10) using the procedure in Section 11.3.4.2. Analyze the GAC in each column separately. The results of the second analysis must be within ±0.2 µg Cl^- of the first. A difference greater than 0.2 µg Cl^- indicates a lack of homogeneity in the GAC that could introduce unacceptable variability. If the difference exceeds this amount, the GAC should be replaced.

9.4.3 The result for the reagent water blank (Section 9.4.1) shall not exceed the result for the nitrate wash blank (Section 9.4.2.1 or 9.4.2.2) by more than 0.5 µg Cl^-.

9.5 Granular activated carbon (GAC) batch testing: Each lot number or batch of activated carbon received from a supplier is tested once before use to ensure adequate quality. Use only GAC that meets the test criteria below.

9.5.1 Contamination test: Analyze a scoop of GAC. Reject carbon if the amount of OX exceeds 1 µg (25 µg Cl^-/g).

9.5.2 Inorganic chloride adsorption test: Attempt to adsorb NaCl from 100 mL of a solution containing 100 mg/L in reagent water. Wash with nitrate solution and analyze. The amount of halide should be less than 1 µg Cl^- larger than the blank. A larger amount indicates significant uptake of inorganic chloride by the carbon. Reject carbon if the 1 µg level is exceeded.

9.6 Samples that are being used for regulatory compliance purposes shall be analyzed in duplicate.

prevent backflush of electrolyte is highly recommended.

6.5.2 Micro-coulometer system: Capable of detecting the equivalent of 0.2 µg of Cl^- at a signal-to-noise ratio of 2; capable of detecting the equivalent of 1 µg of Cl^- with a relative standard deviation less than 10%, and capable of accumulating a minimum of the equivalent of 500 µg of Cl^- before a change of electrolyte is required.

6.5.2.1 Micro-coulometer cell: The three cell designs presently in use are shown in Figure 1. Cell operation is described in Section 2.

6.5.2.2 Cell controller: Electronics capable of measuring the small currents generated in the cell and accumulating and displaying the charge produced by hydrogen halides entering the cell. A strip-chart recorder is desirable for display of accumulated charge.

6.6 Miscellaneous glassware: nominal sizes are specified below; other sizes may be used, as necessary.

6.6.1 Volumetric flasks: 5-, 10-, 25-, 50-, 100-, and 1000-mL.

6.6.2 Beakers: 100-, 500-, and 1000-mL.

6.6.3 Volumetric pipets: 1- and 10-mL with pipet bulbs.

6.6.4 Volumetric micro-pipets: 10-, 20-, 50-, 100-, 200-, and 500-µL with pipet control (Hamilton 0010. or equivalent).

6.6.5 Graduated cylinders: 10-, 100-, and 1000-mL.

6.7 Micro-syringes: 10-, 50-, and 100-µL.

6.8 Balances.

6.8.1 Top-loading, capable of weighing 0.1 g.

6.8.2 Analytical, capable of weighing 0.1 mg.

6.9 pH meter.

6.10 Wash bottles: 500- to 1000-mL, PTFE or polyethylene.

6.11 Strip-chart recorder: suggested but not required—useful for determining end of integration (Section 11.4.2).

7.0 Reagents and Standards

7.1 Granular activated carbon (GAC): 75 to 150 µm (100 to 200 mesh); (Dohrmann, Mitsubishi, Carbon Plus, or equivalent), with chlorine content less than 1 µg Cl^- per scoop (< 25 µg Cl^- per gram), adsorption capacity greater than 1000 µg Cl^- (as 2,4,6-trichlorophenol) per scoop (>25,000 µg/g), inorganic halide retention of less than 1 µg Cl^- per scoop in the presence of 10 mg of inorganic halide (< 20 µg Cl^- per gram in the presence of 2500 mg of inorganic halide), and that meets the other test criteria in this method.

7.2 Reagent water: Water in which organic halide is not detected by this method.

7.2.1 Preparation: Reagent water may be generated by:

7.2.1.1 Activated carbon: Pass tap water through a carbon bed (Calgon Filtrasorb-300, or equivalent).

7.2.1.2 Water purifier: Pass tap water through a purifier (Millipore Super Q, or equivalent).

7.2.2 pH adjustment: Adjust the pH of the reagent water to < 2 with nitric acid for all reagent water used in this method, except for the acetic acid solution (Section 7.13).

7.3 Nitric acid (HNO_3): Concentrated, analytical grade.

7.4 Sodium chloride (NaCl) solution (100 µg/mL of Cl^-): Dissolve 0.165g NaCl in 1000 mL reagent water. This solution is used for cell testing and for the inorganic halide rejection test.

7.5 Ammonium chloride (NH_4Cl) solution (100 µg/mL of Cl^-): Dissolve 0.1509 g NH_4Cl in 1000 mL reagent water.

7.6 Sulfuric acid: Reagent grade (specific gravity 1.84).

7.7 Oxygen: 99.9% purity.

7.8 Carbon Dioxide: 99.9% purity.

7.9 Nitrate stock solution: In a 1000-mL volumetric flask, dissolve 17g of $NaNO_3$ in approximately 100 mL of reagent water, add 1.4 mL nitric acid (Section 7.3) and dilute to the mark with reagent water.

7.10 Nitrate wash solution: Dilute 50 mL of nitrate stock solution (Section 7.9) to 1000 mL with reagent water.

7.11 Sodium thiosulfate ($Na_2S_2O_3$) solution (1 N): Weigh 79 grams of $Na_2S_2O_3$ in a 1-L volumetric flask and dilute to the mark with reagent water.

7.12 Trichlorophenol solutions.

Note: The calibration solutions in this section employ 100-mL volumes. For determinations requiring a larger or smaller volume, increase or decrease the size of the volumetric flasks commensurately. For example, if a 1-L sample is to be analyzed, use 1000-mL flasks (Sections 7.12.3.1 and 7.12.4) and 10 times the volume of reagent water (Sections 7.12.3.1 and 7.12.4). The volume of stock solution added to the calibration solutions and precision and recovery (PAR) test solution remain as specified (Sections 7.12.3.2 and 7.12.4) so that the same amount of chloride is delivered to the coulometric cell regardless of the volume of the calibration and PAR solutions.

7.12.1 Methanol: HPLC grade.

7.12.2 Trichlorophenol stock solution (1.0 mg/mL of Cl^-): Dissolve 0.186 g of 2,4,6-trichlorophenol in 100 mL of halide-free methanol.

7.12.3 Trichlorophenol calibration solutions.

7.12.3.1 Place approximately 90 mL of reagent water in each of five 100-mL volumetric flasks.

7.12.3.2 Using a calibrated micro-syringe or micro-pipets, add 2, 5, 10, 30, and 80 µL of the trichlorophenol stock solution (Section 7.12.2) to the volumetric flasks and dilute each to the mark with reagent water to produce calibration solutions of 2, 5, 10, 30, and 80 µg Cl^- per 100 mL of solution (20, 50, 100, 300, and 800 µg/L).

7.12.3.3 Some instruments may have a calibration range that does not extend to 800 µg/L (80 µg of Cl^-). For those instruments, a narrower dynamic range may be used. However, if the concentration of halide in a sample exceeds that range, the sample must be diluted to bring the concentration within the range calibrated.

7.12.4 Trichlorophenol precision and recovery (PAR) test solution (10 µg/L of Cl^-): Partially fill a 100-mL volumetric flask, add 10 µL of the stock solution (Section 7.12.2), and dilute to the mark with reagent water.

7.13 Acetic acid solution: Containing 30 to 70% acetic acid in deionized water, per the instrument manufacturer's instructions.

8.0 Sample Collection, Preservation, and Storage

8.1 Sample preservation.

8.1.1 Residual chlorine: If the sample is known or suspected to contain free chlorine, the chlorine must be reduced to eliminate positive interference that may result from continued chlorination reactions. A knowledge of the process from which the sample is collected may be of value in determining whether dechlorination is necessary. Immediately after sampling, test for residual chlorine using the following method or an alternative EPA method (Reference 12):

8.1.1.1 Dissolve a few crystals of potassium iodide in the sample and add three to five drops of a 1% starch solution. A blue color indicates the presence of residual chlorine.

8.1.1.2 If residual chlorine is found, add 1 mL of sodium thiosulfate solution (Section 7.11) for each 2.5 ppm of free chlorine or until the blue color disappears. Do not add an excess of sodium thiosulfate. Excess sodium thiosulfate may cause decomposition of a small fraction of the OX.

8.1.2 Acidification: Adjust the pH of aqueous samples to < 2 with nitric acid. Acidification inhibits biological activity and stabilizes chemical degradation, including possible dehalogenation reactions that may occur at high pH. Acidification is necessary to facilitate thorough adsorption.

8.1.3 Refrigeration: Maintain samples at a temperature of 0 to 4° C from time of collection until analysis.

8.2 Collect the amount of sample necessary for analysis (Section 11) and all QC tests (Section 9) in an amber glass bottle of the appropriate size (Section 6.1.1).

8.3 Analyze samples no less than three days nor more than six months after collection.

9.0 Quality Control

9.1 Each laboratory that uses this method is required to operate a formal quality assurance program. The minimum requirements of this program consist of an initial demonstration of laboratory capability, an ongoing analysis of standards and blanks as tests of continued performance, and analysis of matrix spike and matrix spike duplicate (MS/MSD) samples to assess accuracy and precision. Laboratory performance is compared to established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

9.1.1 The laboratory shall make an initial demonstration of the ability to produce acceptable results with this method. This ability is demonstrated as described in Section 9.2.

9.1.2 The laboratory is permitted to modify this method to improve separations or lower the costs of measurements, provided that all performance specifications are met. Each time a modification is made to the method, the laboratory is required to repeat the procedures in Sections 9.2.2 and 10 to demonstrate continued method performance. If the detection limit of the method will be affected by the modification, the laboratory should demonstrate that the MDL (40 CFR

used in the analysis results in contamination. Separate air handling systems, charcoal filters, and glove boxes can be used to minimize this exposure.

4.4 Activated carbon.

4.4.1 The purity of each lot of activated carbon must be verified before each use by measuring the adsorption capacity and the background level of halogen (Section 9.5). The stock of activated carbon should be stored in its granular form in a glass container that is capped tightly. Protect carbon at all times from sources of halogen vapors.

4.4.2 Inorganic substances such as chloride, chlorite, bromide, and iodide will adsorb on activated carbon to an extent dependent on their original concentration in the aqueous solution and the volume of sample adsorbed. Treating the activated carbon with a solution of nitrate causes competitive desorption of inorganic halide species. However, if the inorganic halide concentration is greater than 2,000 times the organic halide concentration, artificially high results may be obtained.

4.4.3 Halogenated organic compounds that are weakly adsorbed on activated carbon are only partially recovered from the sample. These include certain alcohols and acids such as chloroethanol and chloroacetic acid that can be removed from activated carbon by the nitrate wash.

4.5 Polyethylene gloves should be worn when handling equipment surfaces in contact with the sample to prevent transfer of contaminants that may be present on the hands.

5.0 Safety

5.1 The toxicity or carcinogenicity of each reagent used in this method has not been precisely determined; however, each chemical substance should be treated as a potential health hazard. Exposure to these substances should be reduced to the lowest possible level. The laboratory is responsible for maintaining a current awareness file of OSHA regulations regarding the safe handling of the chemicals specified in this method. A reference file of material safety data sheets (MSDSs) should be made available to all personnel involved in the chemical analysis. Additional information on laboratory safety can be found in References 9 through 11.

5.2 This method employs strong acids. Appropriate clothing, gloves, and eye protection should be worn when handling these substances.

5.3 Field samples may contain high concentrations of toxic volatile compounds. Sample containers should be opened in a hood and handled with gloves that will prevent exposure.

6.0 Equipment and Supplies

Note: Brand names, suppliers, and part numbers are for illustrative purposes only. No endorsement is implied. Equivalent performance may be achieved using apparatus and materials other than those specified here, but demonstration of equivalent performance that meets the requirements of this method is the responsibility of the laboratory.

6.1 Sampling equipment.

6.1.1 Bottles: 100- to 4000-mL, amber glass, sufficient for all testing (Section 8.2). Detergent water wash, chromic acid rinse, rinse with tap and distilled water, cover with aluminum foil, and heat to 450°C for at least one hour before use.

6.1.2 PTFE liner: Cleaned as above and baked at 100 to 200°C for at least one hour.

6.1.3 Bottles and liners must be lot certified to be free of organic halide by running blanks according to this method.

6.2 Scoop for granular activated carbon (GAC): Capable of precisely measuring 40 mg (±5 mg) GAC (Dohrmann Measuring Cup 521–021, or equivalent).

6.3 Batch adsorption and filtration system.

6.3.1 Adsorption system: Rotary shaker, wrist action shaker, ultrasonic system, or other system for assuring thorough contact of sample with activated carbon. Systems different from the one described below must be demonstrated to meet the performance requirements in Section 9 of this method.

6.3.1.1 Erlenmeyer flasks: 250- to 1500-mL with ground-glass stopper, for use with rotary shaker.

6.3.1.2 Shake table: Sybron Thermolyne Model LE "Big Bill" rotator/shaker, or equivalent.

6.3.1.3 Rack attached to shake table to permit agitation of 16 to 25 samples simultaneously.

6.3.2 Filtration system (Figure 2).

6.3.2.1 Vacuum filter holder: Glass, with fritted-glass support (Fisher Model 09–753E, or equivalent).

6.3.2.2 Polycarbonate filter: 0.40 to 0.45 micron, 25-mm diameter (Micro Separations Inc, Model K04CP02500, or equivalent).

6.3.2.3 Filter forceps: Fisher Model 09–753–50, or equivalent, for handling filters. Two forceps may better aid in handling filters. Clean by washing with detergent and water, rinsing with tap and deionized water, and air drying on aluminum foil.

6.3.2.4 Vacuum flask: 500- to 1500-mL (Fisher 10–1800, or equivalent).

6.3.2.5 Vacuum Source: A pressure/vacuum pump, rotary vacuum pump, or other vacuum source capable of providing at least 610 mm (24 in.) Hg vacuum at 30 L/min free air displacement.

6.3.2.6 Stopper and tubing to mate the filter holder to the flask and the flask to the pump.

6.3.2.7 Polyethylene gloves: (Fisher 11–394–110–B, or equivalent).

6.4 Column adsorption system.

6.4.1 Adsorption module: Dohrmann AD–2, Mitsubishi TXA–2, or equivalent with pressurized sample and nitrate-wash reservoirs, adsorption columns, column housings, gas and gas pressure regulators, and receiving vessels. For each sample reservoir, there are two adsorption columns connected in series. A small steel funnel for filling the columns and a rod for pushing out the carbon are also required. A schematic of the column adsorption system is shown in Figure 3.

6.4.2 Adsorption columns: Pyrex, 5 ± 0.2 cm long × 2 mm ID, to hold 40 mg of granular activated carbon (GAC).

6.4.3 Cerafelt: Johns-Manville, or equivalent, formed into plugs using stainless steel borer (2 mm ID) with ejection rod (available from Dohrmann or Mitsubishi) to hold 40 mg of granular activated carbon (GAC). Caution: Handle Cerafelt with gloves.

6.4.4 Column holders: To support adsorption columns.

6.5 Combustion/micro-coulometer system: Commercially available as a single unit or assembled from parts. At the time of the writing of this method, organic halide units were commercially available from the Dohrmann Division of Rosemount Analytical, Santa Clara, California; Euroglas BV, Delft, the Netherlands; and Mitsubishi Chemical Industries, Ltd., Tokyo, Japan.

6.5.1 Combustion system: Older systems may not have all of the features shown in Figure 4. These older systems may be used provided the performance requirements (Section 9) of this method are met.

6.5.1.1 Combustion tube: Quartz, capable of being heated to 800 to 1000 °C and accommodating a boat sampler. The tube must contain an air lock for introduction of a combustion boat, connections for purge and combustion gas, and connection to the micro-coulometer cell.

6.5.1.2 Tube furnace capable of controlling combustion tube in the range of 800 to 1000 °C.

6.5.1.3 Boat sampler: Capable of holding 35 to 45 mg of activated carbon and a polycarbonate filter, and fitting into the combustion tube (Section 6.5.1.1). Some manufacturers offer an enlarged boat and combustion tube for this purpose. Under a time-controlled sequence, the boat is first moved into an evaporation zone where water and other volatiles are evaporated, and then into the combustion zone where the carbon and all other organic material in the boat are burned in a flowing oxygen stream. The evolved gases are transported by a non-reactive carrier gas to the micro-coulometer cell.

6.5.1.4 Motor driven boat sampler: Capable of advancing the combustion boat into the furnace in a reproducible time sequence. A suggested time sequence is as follows:

A. Establish initial gas flow rates: 160 mL/min CO_2; 40 mL/min O_2.

B. Sequence start.

C. Hold boat in hatch for five seconds to allow integration for baseline subtraction.

D. Advance boat into vaporization zone.

E. Hold boat in vaporization zone for 110 seconds.

F. Establish gas flow rates for combustion: 200 mL/min O_2; 0 mL/min CO_2; advance boat into pyrolysis zone (800°C).

G. Hold boat in pyrolysis zone for six minutes.

H. Return gas flow rates to initial values; retract boat into hatch to cool and to allow remaining HX to be swept into detector (approximately two minutes).

I. Stop integration at 10 minutes after sequence start.

Note: If the signal from the detector does not return to baseline, it may be necessary to extend the pyrolysis time.The sequence above may need to be optimized for each instrument.

6.5.1.5 Absorber: Containing sulfuric acid to dry the gas stream after combustion to

SUBPART L

[PSNS for non-integrated mills where filter and non-woven papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.040)(47.5)/y	0.0080
Trichlorophenol	(0.013)(47.5)/y	0.0025
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART L

[PSNS for non-integrated mills where paperboard is produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.037)(11.2)/y	0.0017
Trichlorophenol	(0.012)(11.2)/y	0.00054
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

Appendix A to Part 430—Methods 1650 and 1653

Method 1650—Adsorbable Organic Halides by Adsorption and Coulometric Titration

1.0 Scope and Application

1.1 This method is for determination of adsorbable organic halides (AOX) associated with the Clean Water Act; the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation, and Liability Act; and other organic halides amenable to combustion and coulometric titration. The method is designed to meet the survey and monitoring requirements of the Environmental Protection Agency (EPA).

1.2 The method is applicable to the determination of AOX in water and wastewater. This method is a combination of several existing methods for organic halide measurements (References 1 through 7).

1.3 The method can be used to measure organically-bound halides (chlorine, bromine, iodine) present in dissolved or suspended form. Results are reported as organic chloride (Cl^-). The detection limit of the method is usually dependent on interferences rather than instrumental limitations. A method detection limit (MDL; Reference 8) of 6.6 µg/L, and a minimum level (ML; Section 18) of 20 µg/L, can be achieved with no interferences present.

1.4 This method is for use by or under the supervision of analysts experienced in the use of a combustion/micro-coulometer. Each laboratory that uses this method must demonstrate the ability to generate acceptable results using the procedures described in Section 9.2.

1.5 Any modification of the method beyond those expressly permitted (Section 9.1.2) is subject to application and approval of an alternate test procedure under 40 CFR 136.4 and 136.5.

2.0 Summary of Method

2.1 Sample preservation: Residual chlorine that may be present is removed by the addition of sodium thiosulfate. Samples are adjusted to a pH < 2 and maintained at 0 to 4°C until analysis.

2.2 Sample analysis: Organic halide in water is determined by adsorption onto granular activated carbon (GAC), washing the adsorbed sample and GAC to remove inorganic halide, combustion of the sample and GAC to form the hydrogen halide, and titration of the hydrogen halide with a micro-coulometer, as shown in Figure 1.

2.3 Micro-coulometer.

2.3.1 This detector operates by maintaining a constant silver-ion concentration in a titration cell. An electric potential is applied to a solid silver electrode to produce silver ions in the cell. As hydrogen halide produced from the combustion of organic halide enters the cell, it is partitioned into an acetic acid electrolyte where it precipitates as silver halide. The current produced is integrated over the combustion period. The electric charge is proportional to the number of moles of halogen captured in the cell (Reference 6).

2.3.2 The mass concentration of organic halides is reported as an equivalent concentration of organically bound chloride (Cl^-).

3.0 Definitions

3.1 Adsorbable organic halides is defined as the analyte measured by this method. The nature of the organo-halides and the presence of semi-extractable material will influence the amount measured and interpretation of results.

3.2 Definitions for terms used in this method are given in the glossary at the end of the method (Section 18).

4.0 Interferences

4.1 Solvents, reagents, glassware, and other sample processing hardware may yield elevated readings from the micro-coulometer. All materials used in the analysis shall be demonstrated to be free from interferences under the conditions of analysis by running method blanks initially and with each sample batch (samples started through the adsorption process in a given eight-hour shift, to a maximum of 20 samples). Specific selection of reagents and purification of solvents may be required.

4.2 Glassware is cleaned by detergent washing in hot water, rinsing with tap water and distilled water, capping with aluminum foil, and baking at 450°C for at least one hour. For some glassware, immersion in a chromate cleaning solution prior to detergent washing may be required. If blanks from glassware without cleaning or with fewer cleaning steps show no detectable organic halide, the cleaning steps that do not eliminate organic halide may be omitted.

4.3 Most often, contamination results from methylene chloride vapors in laboratories that perform organic extractions. Heating, ventilating, and air conditioning systems that are shared between the extraction laboratory and the laboratory in which organic halide measurements are performed transfer the methylene chloride vapors to the air in the organic halide laboratory. Exposure of the activated carbon

containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART L

[PSES for non-integrated mills where tissue papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(22.9)/y	0.0031
Trichlorophenol	(0.010)(22.9)/y	0.00096
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART L

[PSES for non-integrated mills where filter and non-woven papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(59.9)/y	0.0080
Trichlorophenol	(0.010)(59.9)/y	0.0025
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART L

[PSES for non-integrated mills where paperboard is produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(12.9)/y	0.0017
Trichlorophenol	(0.010)(12.9)/y	0.00054
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

§ 430.127 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART L

[PSNS for non-integrated mills where tissue papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.038)(19.1)/y	0.0031
Trichlorophenol	(0.012)(19.1)/y	0.00096
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0028	(0.035)(19.1)/y
Trichlorophenol	0.00096	(0.012)(19.1)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART L

[NSPS for non-integrated mills where filter and non-woven papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	17.1	8.3	5.6
TSS	15.0	6.6	4.0
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0072	(0.037)(47.5)/y
Trichlorophenol	0.0025	(0.013)(47.5)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART L

[NSPS for non-integrated mills where paperboard is produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.0	1.9	1.3
TSS	3.5	1.5	0.9
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0016	(0.033)(11.2)/y
Trichlorophenol	0.00054	(0.012)(11.2)/y

y = wastewater discharged in kgal per ton at all times.

(1) Within the range of 5.0 to 9.0 at all times.

§ 430.126 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-

SUBPART L

[BAT effluent limitations for non-integrated mills where tissue papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0028	(0.029)(22.9)/y
Trichlorophenol	0.00096	(0.010)(22.9)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART L

[BAT effluent limitations for non-integrated mills where filter and non-woven papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0072	(0.029)(59.9)/y
Trichlorophenol	0.0025	(0.010)(59.9)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART L

[BAT effluent limitations for non-integrated mills where paperboard is produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0016	(0.029)(12.9)/y
Trichlorophenol	0.00054	(0.010)(12.9)/y
y = wastewater discharged in kgal per ton of product.		

§ 430.125 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART L

[NSPS for non-integrated mills where tissue papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	7.0	3.4	2.3
TSS	6.0	2.6	1.6
pH	(1)	(1)	(1)

SUBPART L

[BPT effluent limitations for non-integrated mills where tissue papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	11.4	6.25	3.49
TSS	10.25	5.0	2.84
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART L

[BPT effluent limitations for non-integrated mills where filter and non-woven papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	29.6	16.3	9.1
TSS	26.6	13.0	7.4
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART L

[BPT effluent limitations for non-integrated mills where paperboard is produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers	Non-continuous dischargers (Annual average)	
		Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	6.5	3.6	2.0
TSS	5.8	2.8	1.6
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.122 of this subpart for the best practicable control technology currently available (BPT).

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART K

[PSNS for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.044)(31.1)/y	0.0056
Trichlorophenol	(0.014)(31.1)/y	0.0018
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART K

[PSNS for non-integrated mills where lightweight papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.041)(38.2)/y	0.0065
Trichlorophenol	(0.013)(38.2)/y	0.0020
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART K

[PSNS for non-integrated mills where lightweight papers are produced from purchased pulp—electrical grade papers subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.037)(66.8)/y	0.010
Trichlorophenol	(0.012)(66.8)/y	0.0032
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

Subpart L—Tissue, Filter, Non-Woven, and Paperboard From Purchased Pulp Subcategory

§ 430.120 Applicability; description of the tissue, filter, non-woven, and paperboard from purchased pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of tissue papers at non-integrated mills, filter and non-woven papers at non-integrated mills, and paperboard at non-integrated mills. The production of electrical grades of board and matrix board is not included in this subpart.

§ 430.121 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART K—Continued

[PSES for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Trichlorophenol	(0.010)(42.3)/y	0.0018
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART K

[PSES for non-integrated mills where lightweight papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(48.7)/y	0.0065
Trichlorophenol	(0.010)(48.7)/y	0.0032
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART K

[PSES for non-integrated mills where lightweight papers are produced from purchased pulp—electrical grade papers subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(76.9)/y	0.010
Trichlorophenol	(0.010)(76.9)/y	0.0032
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

§ 430.117 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART K

[PSNS for non-integrated mills where fine paper is produced from purchased pulp—wood fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.052)(9.4)/y	0.0020
Trichlorophenol	(0.016)(9.4)/y	0.0064
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0059	(0.037)(38.2)/y
Trichlorophenol	0.0020	(0.013)(38.2)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[NSPS for non-integrated mills where lightweight papers are produced from purchased pulp—electrical grade papers subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	24.1	11.7	7.9
TSS	21.1	9.2	5.6
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0093	(0.033)(66.8)/y
Trichlorophenol	0.0032	(0.012)(66.8)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.116 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART K

[PSES for non-integrated mills where fine paper is produced from purchased pulp—wood fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(15.2)/y	0.0020
Trichlorophenol	(0.010)(15.2)/y	0.00064
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART K

[PSES for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(42.3)/y	0.0056

SUBPART K

[NSPS for non-integrated mills where fine paper is produced from purchased pulp—wood fiber furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (Annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.5	1.9	1.0
TSS	4.4	2.3	1.2
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0018	(0.047)(9.4)/y
Trichlorophenol	0.00064	(0.016)(9.4)/y

y=wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[NSPS for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	7.8	4.2	2.2
TSS	9.5	4.9	2.6
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0051	(0.039)(31.1)/y
Trichlorophenol	0.0018	(0.014)(31.1)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[NSPS for non-integrated mills where lightweight papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	13.7	6.7	4.5
TSS	12.0	5.2	3.2
pH	(1)	(1)	(1)

SUBPART K

[BAT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp—wood fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0018	(0.029)(15.2)/y
Trichlorophenol	0.00064	(0.010)(15.2)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART K

[BAT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0051	(0.029)(42.3)/y
Trichlorophenol	0.0018	(0.010)(42.3)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART K

[BAT effluent limitations for non-integrated mills where lightweight papers are produced from purchased pulp]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0059	(0.029)(48.7)/y
Trichlorophenol	0.0020	(0.010)(48.7)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART K

[BAT effluent limitations for non-integrated mills where lightweight papers are produced from purchased pulp—electrical grade papers subdivision]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0093	(0.029)(76.9)/y
Trichlorophenol	0.0032	(0.010)(76.9)/y
y = wastewater discharged in kgal per ton of product.		

§ 430.115 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART K—Continued

[BPT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[BPT effluent limitations for non-integrated mills where lightweight papers are produced from purchased pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	24.1	13.2	7.37
TSS	21.6	10.6	6.0
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[BPT effluent limitations for non-integrated mills where lightweight papers are produced from purchased pulp— electrical grade papers subdivision

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	38.0	20.9	11.7
TSS	34.2	16.7	9.5
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.102 of this subpart for the best practicable control technology currently available (BPT).

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART J

[PSNS for secondary fiber non-deink facilities where molded products from wastepaper are produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product*
Pentachlorophenol	(0.118)(5.7)/y	0.0028
Trichlorophenol	(0.037)(5.7)/y	0.00088
y = wastewater discharged in kgal per ton of product.		

*The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

Subpart K—Fine and Lightweight Papers from Purchased Pulp Subcategory

§ 430.110 Applicability; description of the fine and lightweight papers from purchased pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of: fine paper at nonintegrated mills; and lightweight paper at nonintegrated mills.

§ 430.111 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided in paragraphs (b) and (c) of this section, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

(b) Cotton fiber furnish subdivision mills are those mills where significant quantities of cotton fibers (equal to or greater than 4 percent of the total product) are used in the production of fine papers.

(c) Wood fiber furnish subdivision mills are those mills where cotton fibers are not used in the production of fine papers.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART K

[BPT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp—wood fiber furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	8.2	4.25	2.4
TSS	11.0	5.9	3.2
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART K

[BPT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp—cotton fiber furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	17.4	9.1	5.1
TSS	24.3	13.1	7.2

SUBPART J

[PSES for secondary fiber non-deink facilities where molded products from wastepaper are produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.032)(21.1)y	0.0028
Trichlorophenol	(0.010)(21.1)y	0.00088

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

§ 430.107 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART J

[PSNS for secondary fiber non-deink facilities where paperboard from wastepaper is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.072)(3.2)/y	0.00096
Trichlorophenol	(0.023)(3.2)/y	0.00030

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART J

[PSNS for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.171)(2.7)/y	0.0019
Trichlorophenol	(0.053)(2.7)/y	0.00060

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART J

[PSNS for secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.049)(16.3)/y	0.0034
Trichlorophenol	(0.015)(16.3)/y	0.0011

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0026	(0.107)(5.7)/y
Trichlorophenol	0.00088	(0.037)(5.7)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.106 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART J

[PSES for secondary fiber non-deink facilities where paperboard from wastepaper is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(7.2)/y	0.00096
Trichlorophenol	(0.010)(7.2)/y	0.00030
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART J

[PSES for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(14.4)y	0.0019
Trichlorophenol	(0.010)(14.4)y	0.00060
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART J

[PSES for secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.032)(25.2)y	0.0034
Trichlorophenol	(0.010)(25.2)/y	0.0011
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART J—Continued

[NSPS for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0017	(0.155)(2.7)/y
Trichlorophenol	0.00060	(0.053)(2.7)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART J

[NSPS for secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.6	2.5	1.3
TSS	10.2	5.3	2.8
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.045)(16.3)/y
Trichlorophenol	0.0011	(0.015)(16.3)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART J

[NSPS for secondary fiber non-deink facilities where molded products from wastepaper are produced without deinking]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	2.1	1.1	0.58
TSS	4.4	2.3	1.21
pH	(1)	(1)	(1)

SUBPART J

[NSPS for secondary fiber non-deink facilities where paperboard from wastepaper is produced—noncorrugating medium furnish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	2.6	1.4	0.73
TSS	3.5	1.8	0.95
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00087	(0.065)(3.2)/y
Trichlorophenol	0.00030	(0.023)(3.2)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART J

[NSPS for secondary fiber non-deink facilities where paperboard from wastepaper is produced—corrugating medium finish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.9	2.1	1.1
TSS	4.4	2.3	1.2
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00087	(0.065)(3.2)/y
Trichlorophenol	0.00030	(0.023)(3.2)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART J

[NSPS for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	1.7	0.94	0.49
TSS	2.7	1.40	0.74

SUBPART J

[BAT effluent limitations for secondary fiber non-deink facilities where paperboard from wastepaper is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00087	(0.029)(7.2)/y
Trichlorophenol	0.00030	(0.010)(7.2)/y

y = wastewater discharged in kgal per ton of product.

SUBPART J

[BAT effluent limitations for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0017	(0.029)(14.4)/y
Trichlorophenol	0.00060	(0.010)(14.4)/y

y = wastewater discharged in kgal per ton of product.

SUBPART J

[BAT effluent limitations for secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.029)(25.2)/y
Trichlorophenol	0.0011	(0.010)(25.2)/y

y = wastewater discharged in kgal per ton of product.

SUBPART J

[BAT effluent limitations for secondary fiber non-deink facilities where molded products from wastepaper are produced without deinking]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0026	(0.029)(21.1)/y
Trichlorophenol	0.00088	(0.010)(21.1)/y

y = wastewater discharged in kgal per ton of product.

§ 430.105 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART J

[BPT effluent limitations for secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average days)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	13.7	7.1	4.0
TSS	17.05	9.2	5.1
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART J

[BPT effluent limitations for secondary fiber non-deink facilities where molded products from wastepaper are produced without deinking]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average days)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.4	2.3	1.3
TSS	10.8	5.8	3.2
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.102 of this subpart for the best practicable control technology currently available (BPT).

(b) For secondary fiber non-deink facilities where paperboard from wastepaper is produced, non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD5 and TSS by 1.77 and 2.18.

(c) For secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced, non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD5 and TSS by 1.90 and 1.90.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

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

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

SUBPART J

[BPT effluent limitations for secondary fiber non-deink facilities where paperboard from wastepaper is produced—noncorrugating medium finish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	3.0	1.5
TSS	5.0	2.5
pH	(1)	(1)

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

SUBPART J

[BPT effluent limitations for secondary fiber non-deink facilities where paperboard from wastepaper is produced—corrugating medium finish subdivision]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	5.7	2.8
TSS	9.2	4.6
pH	(1)	(1)

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

SUBPART J

[BPT effluent limitations for secondary fiber non-deink facilities where builders' paper and roofing felt from wastepaper are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	5.0	3.0
TSS	5.0	3.0
pH	(1)	(1)
Setteable Solids	(2)	(2)

1 Within the range of 6.0 to 9.0 at all times.
2 Not to exceed 0.2 ml/l.

(b) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

§ 430.97 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART I

[Facilities where fine paper is produced]

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.049)(15.9)/y	0.0033
Trichlorophenol	(0.126)(15.9)/y	0.0084
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

SUBPART I

[Facilities where tissue paper is produced]

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.040)(19.5)/y	0.0033
Trichlorophenol	(0.103)(19.5)/y	0.0084
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

SUBPART I

[Facilities where newsprint is produced]

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.048)(16.2)/y	0.0033
Trichlorophenol	(0.015)(16.2)/y	0.0010
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

Subpart J—Secondary Fiber Non-Deink Subcategory

§ 430.100 Applicability; description of the secondary fiber non-deink subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of: paperboard from wastepaper; tissue paper from wastepaper without deinking at secondary fiber mills; molded products from wastepaper without deinking at secondary fiber mills; and builders' paper and roofing felt from wastepaper.

§ 430.101 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

(b) Noncorrugating medium furnish subdivision mills are mills where recycled corrugating medium is not used in the production of paperboard.

(c) Corrugating medium furnish subdivision mills are mills where only recycled corrugating medium is used in the production of paperboard.

SUBPART I

[Facilities where newsprint is produced]
[NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	6.0	3.2	1.7
TSS	12.0	6.3	3.3
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.044)(16.2)/y
Trichlorophenol	0.0010	(0.015)(16.2)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.96 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART I

[Facilities where fine or tissue paper is produced]

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(24.4)/y	0.0033
Trichlorophenol	(0.082)(24.4)/y	0.0084
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

SUBPART I

[Facilities where newsprint is produced]

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.032)(24.4)/y	0.0033
Trichlorophenol	(0.010)(24.4)/y	0.0010
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART I

[Facilities where fine paper is produced]

[NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	5.7	3.1	1.6
TSS	8.7	4.6	2.4
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.045)(15.9)/y
Trichlorophenol	0.0069	(0.104)(15.9)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART I

[Facilities where tissue paper is produced]

[NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	9.6	5.2	2.72
TSS	13.1	6.8	3.58
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.036)(19.5)/y
Trichlorophenol	0.0069	(0.085)(19.5)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART I

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	18.1	9.4	5.3
TSS	24.05	12.95	7.12
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.92 of this subpart for the best practicable control technology currently available (BPT).

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART I

[Facilities where fine or tissue paper is produced]

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.029)(24.4)/y
Trichlorophenol	0.0069	(0.068)(24.4)/y

y = wastewater discharged in kgal per ton of product.

SUBPART I

[Facilities where newsprint is produced]

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.029)(24.4)/y
Trichlorophenol	0.0010	(0.010)(24.4)/y

y = wastewater discharged in kgal per ton of product.

§ 430.95 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration

SUBPART G

[PSNS for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.016)(16.8)/y	0.0011
Trichlorophenol	(0.014)(16.8)/y	0.00099
Zinc	(3.0)(16.8)/y	0.21
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART G

[PSNS for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.016)(15.4)/y	0.0010
Trichlorophenol	(0.014)(15.4)/y	0.00092
Zinc	(3.0)(15.4)/y	0.19
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

(b) [Reserved]

Subpart H—Non-Wood Chemical Pulp Subcategory

§ 430.80 Applicability; description of the non-wood chemical pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp and paper at non-wood chemical pulp mills. This subcategory includes, but is not limited to, mills producing non-wood pulps from chemical pulping processes such as kraft, sulfite, or soda.

§ 430.81 Specialized definitions.

The general definitions, abbreviations, and methods of analysis set forth in 40 CFR 401 and § 430.01 of this part shall apply to this subpart.

§ 430.82 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT). [Reserved]

§ 430.83 Effluent limitations representing the degree of effluent reduction attainable by the application of best conventional pollutant control technology (BCT). [Reserved]

§ 430.84 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT). [Reserved]

§ 430.85 New source performance standards (NSPS). [Reserved]

§ 430.86 Pretreatment standards for existing sources (PSES). [Reserved]

§ 430.87 Pretreatment standards for new sources (PSNS). [Reserved]

Subpart I—Secondary Fiber Deink Subcategory

§ 430.90 Applicability; description of the secondary fiber deink subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at deink mills.

§ 430.91 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART G

[PSES for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/1)	Kg/kkg (or pounds per 1,000 1b) of product[a]
Pentachlorophenol	(0.011) (23.8)/y	0.0011
Trichlorophenol	(0.010) (23.8)/y	0.00099
Zinc	(3.0) (23.8)/y	0.30
y = wasterwater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART G

[PSNS for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.011)(21.9)/y	0.0010
Trichlorophenol	(0.010)(21.9)/y	0.00092
Zinc	(3.0)(21.9)/y	0.27
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

(b) [Reserved]

§ 430.77 Pretreatment standards for new sources (PSNS).

(a) The following applies to mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process; mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs; and mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs: except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS). Pentachlorophenol and trichlorophenol limitations are only applicable at facilities where chlorophenolic-containing biocides are used. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. Zinc limitations are only applicable at facilities where zinc hydrosulfite is used as a bleaching agent. Permittees not using zinc hydrosulfite as a bleaching agent must certify to the permit issuing authority that they are not using this bleaching compound:

SUBPART G

[PSNS for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.017)(13.8)/y	0.00097
Trichlorophenol	(0.015)(13.8)/y	0.00088
Zinc	(3.0)(13.8)/y	0.17
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART G

[NSPS mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.5	1.9	0.99
TSS	5.8	3.0	1.58
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0010	(0.016) (15.4)/y
Trichlorophenol	0.00092	(0.014) (15.4)/y
Zinc	0.19	(3.0) (15.4)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

(b) [Reserved]

§ 430.76 Pretreatment standards for existing sources (PSES).

(a) The following applies to mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process; mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs; and mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs: except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). Pentachlorophenol and trichlorophenol limitations are only applicable at facilities where chlorophenolic-containing biocides are used. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. Zinc limitations are only applicable at facilities where zinc hydrosulfite is used as a bleaching agent. Permittees not using zinc hydrosulfite as a bleaching agent must certify to the permit-issuing authority that they are not using this bleaching compound. PSES must be attained on or before July 1, 1984:

SUBPART G

[PSES for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/1)	Kg/kkg (or pounds per 1,000 1b) of product [a]
Pentachlorophenol	(0.011) (21.1)/y	0.00097
Trichlorophenol	(0.010) (21.1)/y	0.00088
Zinc	(3.0) (21.1)/y	0.26

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

production of pulp and coarse paper, mo' 'ed pulp products, and newsprint at gro ndwood mills occurs; and mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs: any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Pentachlorophenol and trichlorophenol limitations are only applicable at facilities where chlorophenolic-containing biocides are used. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. Zinc limitations are only applicable at facilities where zinc hydrosulfite is used as a bleaching agent. Permittees not using zinc hydrosulfite as a bleaching agent must certify to the permit issuing authority that they are not using this bleaching compound:

SUBPART G

[NSPS for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.6	2.5	1.3
TSS	8.7	4.6	2.4
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00097	(0.017)(13.8)/y
Trichlorophenol	0.00088	(0.015)(13.8)/y
Zinc	0.17	(3.0)(13.8)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[NSPS for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.6	2.5	1.3
TSS	7.3	3.8	2.0
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0011	(0.016)(16.8)/y
Trichlorophenol	0.00099	(0.014)(16.8)/y
Zinc	0.21	(3.0)(16.8)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.72 of this subpart for the best practicable control technology currently available (BPT).

(b) [Reserved]

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

(a) The following applies to mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process; mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs; and mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs: except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Pentachlorophenol and trichlorophenol limitations are only applicable at facilities where chlorophenolic-containing biocides are used. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. Zinc limitations are only applicable at facilities where zinc hydrosulfite is used as a bleaching agent. Permittees not using zinc hydrosulfite as a bleaching agent must certify to the permit issuing authority that they are not using this bleaching compound:

SUBPART G

[BAT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00097	(0.011)(21.1)/y
Trichlorophenol	0.00088	(0.010)(21.1)/y
Zinc	0.26	(3.0)(21.1)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART G

[BAT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0011	(0.011)(23.8)/y
Trichlorophenol	0.00099	(0.010)(23.8)/y
Zinc	0.30	(3.0)(23.8)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART G

[BAT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0010	(0.011)(21.9)/y
Trichlorophenol	0.00092	(0.010)(21.9)/y
Zinc	0.27	(3.0)(21.9)/y
y = wastewater discharged in kgal per ton of product.		

(b) [Reserved]

§ 430.75 New source performance standards (NSPS).

(a) The following applies to mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process; mechanical pulp facilities where the integrated

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
Zinc	0.34	0.17	0.11

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
Zinc	0.26	0.13	0.09

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
Zinc	0.30	0.15	0.10

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
Zinc	0.275	0.135	0.090

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

(a)(1) The following applies to: mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs; and mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs:

(2) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.15	0.05
TSS	0.60	0.35	0.15
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.25	0.1	0.05
TSS	0.45	0.25	0.15
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.2	0.05	0.05
TSS	0.4	0.25	0.15
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(e) For those mills using zinc hydrosulfite as a bleaching agent in the manufacturing process, the following effluent limitations are to be added to the base limitations set forth in paragraph (a) of this section. Permittees not using zinc hydrosulfite as a bleaching agent must certify to the permit issuing authority that they are not using this bleaching compound. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations, but shall be subject to annual average effluent limitations:

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.05	0.05
TSS	0.20	0.15	0.10
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.05	0.05
TSS	0.2	0.15	0.10
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to the annual average effluent limitations:

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.05	0.05
TSS	0.55	0.3	0.15
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	1.1	0.55	0.35
TSS	1.95	1.1	0.60
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to the annual average effluent limitations:

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.05	0.05	0.05
TSS	0.25	0.15	0.10
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.05	0.05	0.05
TSS	0.30	0.15	0.05
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations:

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.9	0.45	0.25
TSS	2.6	1.45	0.80
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.9	0.45	0.3
TSS	2.7	1.45	0.75
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	1.15	0.55	0.30
TSS	2.0	1.1	0.60
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G—Continued

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood mills are produced through the application of the thermo-mechanical process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	10.6	5.55	3.12
TSS	15.55	8.35	4.59
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	7.45	3.9	2.19
TSS	12.75	6.85	3.76
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where the integrated production of pulp and fine paper at groundwood mills occurs]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	6.85	3.6	2.0
TSS	11.75	6.3	3.5
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART F—Continued

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Trichlorophenol	(0.010)(10.3)/y	0.00043
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

§ 430.67 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART F

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.045)(7.3)/y	0.0014
Trichlorophenol	(0.014)(7.3)/y	0.00043
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass equivalent limitations.

Subpart G—Mechanical Pulp Subcategory

§ 430.70 Applicability; description of the mechanical pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from: the production of pulp and paper at groundwood chemi-mechanical mills; the production of pulp and paper at groundwood mills through the application of the thermo-mechanical process; the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills; and the integrated production of pulp and fine paper at groundwood mills.

§ 430.71 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART G

[BPT effluent limitations for mechanical pulp facilities where pulp and paper at groundwood chemi-mechanical mills are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	13.5	7.05	3.96
TSS	19.75	10.65	5.85

SUBPART F

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0012	(0.029)(10.3)/y
Trichlorophenol	0.00043	(0.010)(10.3)/y
y = wastewater discharged in kgal per ton of product.		

§ 430.65 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART F

[NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.0	1.6	0.84
TSS	5.8	3.0	1.6
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0012	(0.041)(7.3)/y
Trichlorophenol	0.00043	(0.014)(7.3)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.66 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART F

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.032)(10.3)/y	0.0014

(c) An indirect discharger must demonstrate compliance with the pretreatment standards in paragraphs (a)(2) or (a)(3) of this section, as applicable, by monitoring for all pollutants at the point where the wastewater containing those pollutants leaves the bleach plant.

§ 430.58 Best management practices (BMPs).

The definitions and requirements set forth in 40 CFR 430.03 apply to facilities in this subpart.

Subpart F—Semi-Chemical Subcategory

§ 430.60 Applicability; description of the semi-chemical subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at semi-chemical mills.

§ 430.61 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

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

SUBPART F

[BPT effluent limitations for ammonia base mills]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	8.0	4.0
TSS	10.0	5.0
pH	(1)	(1)

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

SUBPART F

[BPT effluent limitations for sodium base mills]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	8.7	4.35
TSS	11.0	5.5
pH	(1)	(1)

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

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.62 of this subpart for the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD5 by 1.36 and TSS by 1.36.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1,000 lb), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART E.—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant parameter	PSNS (TCF)	
	Maximum for any 1 day	Monthly average
AOX	<ML [a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(3)(i) The following pretreatment standards apply to each indirect discharger in the specialty grade sulfite pulp segment that is a new source:

SUBPART E.—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	(c)
TCDF [a]	<ML [b]	(c)
Trichlorosyringol [a]	<ML [b]	(c)
3,4,5-trichlorocatechol [a]	<ML [b]	(c)
3,4,6-trichlorocatechol [a]	<ML [b]	(c)
3,4,5-trichloroguaiacol [a]	<ML [b]	(c)
3,4,6-trichloroguaiacol [a]	<ML [b]	(c)
4,5,6-trichloroguaiacol [a]	<ML [b]	(c)
2,4,5-trichlorophenol [a]	<ML [b]	(c)
2,4,6-trichlorophenol [a]	<ML [b]	(c)
Tetrachlorocatechol [a]	<ML [b]	(c)
Tetrachloroguaiacol [a]	<ML [b]	(c)
2,3,4,6-tetrachlorophenol [a]	<ML [b]	(c)
Pentachlorophenol [a]	<ML [b]	(c)

[a] These limitations do not apply with respect to fiber lines operated by any indirect discharger that discloses to the pretreatment control authority, at the time it submits the report required under 40 CFR 403.12 (b), (d), or (e), that it uses a TCF bleaching process at that fiber line.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(ii) The following pretreatment standards apply with respect to each new source fiber line operated by an indirect discharger producing specialty grade sulfite pulps if the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line:

SUBPART E.—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant parameter	PSNS (TCF)	
	Maximum for any 1 day	Monthly average
AOX	<ML [a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(b) The following pretreatment standards shall apply to each new source indirect dischargers unless the indirect discharger certifies to the pretreatment control authority that it is not using these compounds as biocides. In cases when POTWs find it necessary to impose mass effluent standards, equivalent mass standards are provided as guidance:

SUBPART E

Pollutant or pollutant property	Supplemental PSNS	
	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058exp (0.017x).	((0.015)(9.12)exp(0.017x))/y
Trichlorophenol	0.0043exp (0.017x).	((0.114)(9.12)exp(0.017x))/y
x = percent sulfite pulp in final product. y = wastewater discharged in kgal per ton of product.		

SUBPART E—Continued

Pollutant or pollutant property	Supplemental PSES	
	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Trichlorophenol x = percent sulfite pulp in final product. y = wastewater discharged in kgal per ton of product.	0.0043exp(0.017x)	((0.082)(12.67)exp(0.017x))/y

(c) An indirect discharger must demonstrate compliance with the pretreatment standards in paragraphs (a)(2) or (a)(3) of this section, as applicable, by monitoring for all pollutants at the point where the wastewater containing those pollutants leaves the bleach plant.

§ 430.57 Pretreatment standards for new sources (PSNS).

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

(a) (1) The following pretreatment standards apply to each indirect discharger in the calcium-, magnesium-, or sodium-based sulfite pulp segment that is a new source:

SUBPART E

[Production of Calcium-, Magnesium-, or Sodium-Based Sulfite Pulps]

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	Monthly average
	kg/kkg (or pounds per 1,000 lb) of product	
AOX	<ML [a]	[b]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(2)(i) The following standards apply to each indirect discharger in the ammonium-based sulfite pulp segment that is a new source:

SUBPART E.—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	[c]
TCDF [a]	<ML [b]	[c]
Trichlorosyringol [a]	<ML [b]	[c]
3,4,5-trichlorocatechol [a]	<ML [b]	[c]
3,4,6-trichlorocatechol [a]	<ML [b]	[c]
3,4,5-trichloroguaiacol [a]	<ML [b]	[c]
3,4,6-trichloroguaiacol [a]	<ML [b]	[c]
4,5,6-trichloroguaiacol [a]	<ML [b]	[c]
2,4,5-trichlorophenol [a]	<ML [b]	[c]
2,4,6-trichlorophenol [a]	<ML [b]	[c]
Tetrachlorocatechol [a]	<ML [b]	[c]
Tetrachloroguaiacol [a]	<ML [b]	[c]
2,3,4,6-tetrachlorophenol [a]	<ML [b]	[c]
Pentachlorophenol [a]	<ML [b]	[c]

[a] These limitations do not apply with respect to fiber lines operated by any indirect discharger that discloses to the pretreatment control authority, at the time it submits the report required under 40 CFR 403.12 (b), (d), or (e), that it uses a TCF bleaching process at that fiber line.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(ii) The following pretreatment standards apply with respect to each new source fiber line operated by an indirect discharger producing ammonium-based sulfite pulps if the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line:

(ii) The following pretreatment standards apply with respect to each new source fiber line operated by an indirect discharger producing ammonium-based sulfite pulps if the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant parameter	PSNS (TCF)	
	Maximum for any 1 day	Monthly average
AOX	<ML [a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(3)(i) The following pretreatment standards apply to all indirect dischargers in the specialty grade sulfite pulp segment:

SUBPART E—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	(c)
TCDF [a]	<ML [b]	(c)
Trichlorosyringol [a]	<ML [b]	(c)
3,4,5-trichlorocatechol [a]	<ML [b]	(c)
3,4,6-trichlorocatechol [a]	<ML [b]	(c)
3,4,5-trichloroguaiacol [a]	<ML [b]	(c)
3,4,6-trichloroguaiacol [a]	<ML [b]	(c)
4,5,6-trichloroguaiacol [a]	<ML [b]	(c)
2,4,5-trichlorophenol [a]	<ML [b]	(c)
2,4,6-Trichlorophenol [a]	<ML [b]	(c)
Tetrachlorocatechol [a]	<ML [b]	(c)
Tetrachloroguaiacol [a]	<ML [b]	(c)
2,3,4,6-tetrachlorophenol [a]	<ML [b]	(c)
Pentachlorophenol [a]	<ML [b]	(c)

[a] These limitations do not apply with respect to fiber lines operated by any indirect discharger that discloses to the pretreatment control authority, at the time it submits the report required under 40 CFR 403.12(b), (d), or (e), that it uses a TCF bleaching process at that fiber line.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(ii) The following pretreatment standards apply with respect to each fiber line operated by an indirect discharger producing specialty grade sulfite pulps if the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line. These pretreatment standards must be attained on or before April 16, 2001:

SUBPART E

Pollutant or pollutant parameter	PSES (TCF)	
	Maximum for any 1 day	Monthly average
AOX	<ML [a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(b) The following pretreatment standards apply to each indirect discharger, in accordance with the previous subcategorization scheme, unless it certifies to the pretreatment control authority that it is not using these compounds as biocides. In cases when POTWs find it necessary to impose mass effluent limitations, equivalent mass limitations are provided as guidance:

SUBPART E

Pollutant or pollutant property	Supplemental PSES	
	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058exp(0.017x)	((0.011)(12.67)exp(0.017x))/y

(c) The following standards apply to each new source regardless of when it commenced discharge, unless it certifies to the permitting authority that it is not using these compounds as biocides. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply. Concentration limitations will only apply to non-continuous dischargers:

SUBPART E

[Supplemental NSPS]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058exp(0.017x)	((0.015)(9.12)exp(0.017x))/y
Trichlorophenol	0.0036exp(0.017x)	((0.094)(9.12)exp(0.017x))/y
x = percent sulfite pulp in final product.		
y = wastewater discharged in kgal per ton of product.		

(d) Pursuant to 40 CFR 122.44(i) and 122.45(h), a discharger must demonstrate compliance with the standards in paragraphs (b)(2) or (b)(3) of this section, as applicable, by monitoring for all pollutants (except for AOX, COD, BOD5, TSS, and pH) at the point where the wastewater containing those pollutants leaves the bleach plant. The permitting authority may impose effluent limitations and/or monitoring requirements on internal wastestreams for any other pollutants covered in this section as appropriate under 40 CFR 122.44(i) and 122.45(h).

§ 430.56 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES).

(a) The following pretreatment standards must be attained on or before April 16, 2001.

(1) The following pretreatment standards apply to all indirect dischargers in the calcium-, magnesium-, or sodium-based sulfite pulp segment:

SUBPART E

[Production of Calcium-, Magnesium-, or Sodium-based Sulfite Pulps]

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Monthly average
	kg/kkg (or pounds per 1,000 lb) of product	
AOX	>ML [a]	[b]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(2)(i) The following pretreatment standards apply to all indirect dischargers in the ammonium-based sulfite pulp segment:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	[c]
TCDF [a]	<ML [b]	[c]
Trichlorosyringol [a]	<ML [b]	[c]
3,4,5-trichlorocatechol [a]	<ML [b]	[c]
3,4,6-trichlorocatechol [a]	<ML [b]	[c]
3,4,5-trichloroguaiacol [a]	<ML [b]	[c]
3,4,6-trichloroguaiacol [a]	<ML [b]	[c]
4,5,6-trichloroguaiacol [a]	<ML [b]	[c]
2,4,5-trichlorophenol [a]	<ML [b]	[c]
2,4,6-trichlorophenol [a]	<ML [b]	[c]
Tetrachlorocatechol [a]	<ML [b]	[c]
Tetrachloroguaiacol [a]	<ML [b]	[c]
2,3,4,6-tetrachlorophenol [a]	<ML [b]	[c]
Pentachlorophenol [a]	<ML [b]	[c]

[a] These limitations do not apply with respect to fiber lines operated by any indirect discharger that discloses to the pretreatment control authority, at the time it submits the report required under 40 CFR 403.12(b), (d), or (e), that it uses a TCF bleaching process at that fiber line.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS—Continued

Pollutant or pollutant property	NSPS (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
COD	(c)	(c)	(c)	(c)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(3)(i) The following standards apply to all new sources in the specialty grade sulfite pulp segment:

SUBPART E—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant property	NSPS	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	(c)
TCDF [a]	<ML [b]	(c)
Chloroform [a]	(d)	(d)
Trichlorosyringol [a]	<ML [b]	(c)
3,4,5-trichlorocatechol [a]	<ML [b]	(c)
3,4,6-trichlorocatechol [a]	<ML [b]	(c)
3,4,5-trichloroguaiacol [a]	<ML [b]	(c)
3,4,6-trichloroguaiacol [a]	<ML [b]	(c)
4,5,6-trichloroguaiacol [a]	<ML [b]	(c)
2,4,5-trichlorophenol [a]	<ML [b]	(c)
2,4,6-trichlorophenol [a]	<ML [b]	(c)
Tetrachlorocatechol [a]	<ML [b]	(c)
Tetrachloroguaiacol	<ML [b]	(c)
2,3,4,6-tetrachlorophenol [a]	<ML [b]	(c)
Pentachlorophenol [a]	<ML [b]	(c)

	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	(d)	(d)	(d)	(d)
COD	(d)	(d)	(d)	(d)

[a] These limitations do not apply with respect to fiber lines that use a TCF bleaching process as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[d] [Reserved].

(ii) The following standards apply to all new sources within the specialty grade sulfite pulp segment with respect to each fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

SUBPART E—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant property	NSPS (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1000 lb) of product			
AOX	<ML [a]	(b)	<ML [a]	(b)
COD	(c)	(c)	(c)	(c)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

SUBPART E

[Production of Calcium-, Magnesium-, or Sodium-based Sulfite Pulps]

Pollutant or pollutant property	NSPS			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	<ML [a]	[b]	<ML [a]	[b]
COD	[c]	[c]	[c]	[c]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(2)(i) The following standards apply to all new sources in the ammonium-based sulfite pulp segment:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	NSPS	
	Maximum for any 1 day	Monthly average
TCDD [a]	<ML [b]	[c]
TCDF [a]	<ML [b]	[c]
Chloroform [a]	[d]	[d]
Trichlorosyringol [a]	<ML [b]	[c]
3,4,5-trichlorocatechol [a]	<ML [b]	[c]
3,4,6-trichlorocatechol [a]	<ML [b]	[c]
3,4,5-trichloroguaiacol [a]	<ML [b]	[c]
3,4,6-trichloroguaiacol [a]	<ML [b]	[c]
4,5,6-trichloroguaiacol [a]	<ML [b]	[c]
2,4,5-trichlorophenol [a]	<ML [b]	[c]
2,4,6-trichlorophenol [a]	<ML [b]	[c]
Tetrachlorocatechol [a]	<ML [b]	[c]
Tetrachloroguaiacol [a]	<ML [b]	[c]
2,3,4,6-tetrachlorophenol [a]	<ML [b]	[c]
Pentachlorophenol [a]	<ML [b]	[c]

	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	[d]	[d]	[d]	[d]
COD	[d]	[d]	[d]	[d]

[a] These limitations do not apply with respect to fiber lines that use a TCF bleaching process as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[d] [Reserved].

(ii) The following standards apply to all new sources in the ammonium-based sulfite pulp segment with respect to each fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	NSPS (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1000 lb) of product			
AOX	<ML [a]	[b]	<ML [a]	[b]

[a] [Reserved].

(ii) The following effluent limitations apply to dischargers in the specialty grade pulp segment with respect to each fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

SUBPART E—PRODUCTION OF SPECIALTY GRADE PULPS

Pollutant or pollutant property	BAT effluent limitations (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1000 lb) of product			
AOX	<ML [a]	[b]	<ML [a]	[b]
COD	[c]	[c]	[c]	[c]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(b) The following additional effluent limitations apply to each discharger subject to this section in accordance with the previous subcatgorization scheme unless it certifies to the permitting authority that it is not using these compounds as biocides. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply. Concentration limitations will only apply to non-continuous dischargers:

SUBPART E

[Supplemental BAT effluent limitations]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058exp(0.017x)	((0.011)(12.67)exp(0.017x))/y
Trichlorophenol	0.0036exp(0.017x)	((0.068)(12.67)exp(0.017x))/y
x = percent sulfite pulp in final product.		
y = wastewater discharged in kgal per ton of product.		

(c) Pursuant to 40 CFR 122.44(i) and 122.45(h), a discharger must demonstrate compliance with the limitations in paragraphs (a)(2) or (a)(3) of this section, as applicable, by monitoring for all pollutants (except for AOX and COD) at the point where the wastewater containing those pollutants leaves the bleach plant. The permitting authority may impose effluent limitations and/or monitoring requirements on internal wastestreams for any other pollutants covered in this section as appropriate under 40 CFR 122.44(i) and 122.45(h).

§ 430.55 New source performance standards (NSPS).

New sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) The following standards apply to each new source regardless of when it commenced discharge:

SUBPART E

[1982 NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	4.38exp(0.017x)	2.36exp(0.017x)	Average of daily values for 30 consecutive days divided by 1.91.
TSS	5.81exp(0.017x)	3.03exp(0.017x)	Average of daily values for 30 consecutive days divided by 1.90.
pH	[1]	[1]	[1]
x = percent sulfite pulp in final product.			

[1] Within the range of 5.0 to 9.0 at all times.

(b) The following standards apply with respect to each new source fiber line that commences discharge after June 15, 1998.

(1) The following standards apply to all new sources in the calcium-, magnesium-, or sodium-based sulfite pulp segment:

	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	(d)	(d)	(d)	(d)
COD	(d)	(d)	(d)	(d)

[a] These limitations do not apply with respect to fiber lines that use a TCF bleaching process as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[d] [Reserved].

(ii) The following effluent limitations apply to all dischargers in the ammonium-based sulfite pulp segment with respect to each fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	BAT effluent limitations (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1000 lb) of product			
AOX	<ML [a]	(b)	<ML [a]	(b)
COD	(c)	(c)	(c)	(c)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(3)(i) The following effluent limitations apply to all dischargers in the specialty grade pulp segment:

SUBPART E—PRODUCTION OF SPECIALTY GRADE SULFITE PULPS

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Monthly Average
TCDD [a]	<ML [b]	(c)
TCDF [a]	<ML [b]	(c)
Chloroform [a]	(d)	(c)
Trichlorosyringol [a]	<ML [b]	(c)
3,4,5-trichlorocatechol [a]	<ML [b]	(c)
3,4,6-trichlorocatechol [a]	<ML [b]	(c)
3,4,5-trichloroguaiacol [a]	<ML [b]	(c)
3,4,6-trichloroguaiacol [a]	<ML [b]	(c)
4,5,6-trichloroguaiacol [a]	<ML [b]	(c)
2,4,5-trichlorophenol [a]	<ML [b]	(c)
2,4,6-trichlorophenol [a]	<ML [b]	(c)
Tetrachlorocatechol [a]	<ML [b]	(c)
Tetrachloroguaiacol [a]	<ML [b]	(c)
2,3,4,6-tetrachlorophenol [a]	<ML [b]	(c)
Pentachlorophenol [a]	<ML [b]	(c)

	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	(d)	(d)	(d)	(d)
COD	(d)	(d)	(d)	(d)

[a] These limitations do not apply with respect to fiber lines that use a TCF bleaching process as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.
[b] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[c] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.7	0.35	0.2
TSS	1.70	0.9	0.5
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). The limitations shall be the same as those specified for conventional pollutants in § 430.52 of this subpart for the best practicable control technology currently available (BCT).

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

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

(a) (1) The following effluent limitations apply to all dischargers in the calcium-, magnesium-, or sodium-based sulfite pulp segment:

SUBPART E

[Production of Calcium-, Magnesium-, or Sodium-based Sulfite Pulps]

Pollutant or pollutant property	BAT effluent limitations			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg (or pounds per 1,000 lb) of product			
AOX	<ML[a]	(b)	<ML[a]	(b)
COD	(c)	(c)	(c)	(c)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(2)(i) The following effluent limitations apply to all dischargers in the ammonium-based sulfite pulp segment:

SUBPART E—PRODUCTION OF AMMONIUM-BASED SULFITE PULPS

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Monthly average
TCDD[a]	<ML[b]	(c)
TCDF[a]	<ML[b]	(c)
Chloroform[a]	(d)	(c)
Trichlorosyringol[a]	<ML[b]	(c)
3,4,5-trichlorocatechol[a]	<ML[b]	(c)
3,4,6-trichlorocatechol[a]	<ML[b]	(c)
3,4,5-trichloroguaiacol[a]	<ML[b]	(c)
3,4,6-trichloroguaiacol[a]	<ML[b]	(c)
4,5,6-trichloroguaiacol[a]	<ML[b]	(c)
2,4,5-trichlorophenol[a]	<ML[b]	(c)
2,4,6-trichlorophenol[a]	<ML[b]	(c)
Tetrachlorocatechol[a]	<ML[b]	(c)
Tetrachloroguaiacol[a]	<ML[b]	(c)
2,3,4,6-tetrachlorophenol[a]	<ML[b]	(c)
Pentachlorophenol[a]	<ML[b]	(c)

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.1	0.05
TSS	2.55	1.35	0.75
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.35	0.2	0.1
TSS	2.55	1.35	0.75
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations:

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.35	0.2	0.1
TSS	1.7	0.9	0.5
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E—Continued

[Continuous digesters; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations:

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	2.7	1.45	0.80
TSS	7.5	3.95	2.19
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E

[BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.05	1.6	0.90
TSS	7.5	3.95	2.19
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations:

SUBPART E—Continued

[Bisulfite liquor/barometric condensers; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
H	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.
NOTE: Limitations above do not apply to mills using continuous digesters.

SUBPART E

[Acid sulfite liquor/surface condensers; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
OD5	29.75	15.5	8.71
SS	43.95	23.65	12.99
H	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.
NOTE: Limitations above do not apply to mills using continuous digesters.

SUBPART E

[Acid sulfite liquor/barometric condensers; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	32.5	16.9	9.49
TSS	52.2	28.1	15.44
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.
NOTE: Limitations above do not apply to mills using continuous digesters.

SUBPART E

[Continuous digesters; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	38.15	19.85	11.
TSS	53.75	28.95	15.91

SUBPART E

[Acid sulfite liquor/surface condensers; BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	32.3	16.8	9.44
TSS	43.95	23.65	12.99
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E

[Acid sulfite liquor/barometric condensers; BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	35.55	18.5	10.39
TSS	52.2	28.1	15.44
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E

[Bisulfite liquor/surface condensers; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	26.7	13.9	7.81
TSS	43.95	23.65	12.99
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.
NOTE: Limitations above do not apply to mills using continuous digesters.

SUBPART E

[Bisulfite liquor/barometric condensers; BPT effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	29.4	15.3	8.60
TSS	52.2	28.1	15.44

Subpart E—Papergrade Sulfite Subcategory

§ 430.50 Applicability; description of the papergrade sulfite subcategory.

The provisions of this subpart apply to discharges resulting from the: integrated production of pulp and paper at papergrade sulfite mills, where blow pit pulp washing techniques are used; and the integrated production of pulp and paper at papergrade sulfite mills where vacuum or pressure drums are used to wash pulp.

§ 430.51 Specialized definitions.

(a) Except as provided in paragraphs (b) and (c) of this section, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part apply to this subpart.

(b) *Sulfite cooking liquor* is defined as bisulfite cooking liquor when the pH of the liquor is between 3.0 and 6.0 and as acid sulfite cooking liquor when the pH is less than 3.0.

(c) For this subpart, the segments for the papergrade sulfite subcategory are defined as follows:

(1) The calcium-, magnesium-, or sodium-based sulfite pulp segment consists of papergrade sulfite mills where pulp and paper are produced using an acidic cooking liquor of calcium, magnesium, or sodium sulfite, unless those mills are specialty grade sulfite mills;

(2) The ammonium-based sulfite pulp segment consists of papergrade sulfite mills where pulp and paper are produced using an acidic cooking liquor of ammonium sulfite, unless those mills are specialty grade sulfite mills;

(3) The specialty grade sulfite pulp segment consists of those papergrade sulfite mills where a significant portion of production is characterized by pulp with a high percentage of alpha cellulose and high brightness sufficent to produce end products such as plastic molding compounds, saturating and laminating products, and photographic papers. The specialty grade segment also includes those mills where a major portion of production is 91 ISO brightness and above.

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

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

SUBPART E

[Bisulfite liquor/surface condensers; BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	31.8	16.55	9.30
TSS	43.95	23.65	12.99
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART E

[Bisulfite liquor/barometric condensers; BPT effluent limitations for papergrade sulfite facilities where blow pit washing techniques are used]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	34.7	18.05	10.14
TSS	52.2	28.1	15.44
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[PSES for dissolving sulfite pulp facilities where nitration, viscose, or cellophane grade pulps are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.011)(66.0)/y	0.0030
Trichlorophenol	(0.082)(66.0)/y	0.023
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART D

[PSES for dissolving sulfite pulp facilities where acetate grade pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.011)(72.7)/y	0.0033
Trichlorophenol	(0.082)(72.7)/y	0.025
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

§ 430.47 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART D

[PSNS for dissolving sulfite pulp facilities where nitration, viscose, or cellophane grade pulps are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.012)(59.0)/y	0.0030
Trichlorophenol	(0.092)(59.0)/y	0.023
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART D

[PSNS for dissolving sulfite pulp facilities where acetate grade pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.012)(65.7)/y	0.0033
Trichlorophenol	(0.091)(65.7)/y	0.025
y=wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

SUBPART D

[NSPS for dissolving sulfite pulp facilities where cellophane grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	31.2	16.8	8.80
TSS	40.8	21.3	11.2
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.012)(59.0)/y
Trichlorophenol	0.019	(0.076)(59.0)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[NSPS for dissolving sulfite pulp facilities where acetate grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	39.6	21.4	11.2
TSS	41.1	21.5	11.3
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0033	(0.012)(65.7)/y
Trichlorophenol	0.021	(0.075)(65.7)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.46 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

must certify to the permit-issuing authority that they are not using these biocides:

SUBPART D

[NSPS for dissolving sulfite pulp facilities where nitration grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	26.9	14.5	7.59
TSS	40.8	21.3	11.2
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.012)(59.0)/y
Trichlorophenol	0.019	(0.012)(59.0)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[NSPS for dissolving sulfite pulp facilities where viscose grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	28.7	15.5	8.12
TSS	40.8	21.3	11.2
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.012)(59.0)/y
Trichlorophenol	0.019	(0.012)(59.0)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.1	0.05
TSS	0.15	0.1	0.05
pH	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.42 of this subpart for the best practicable control technology currently available (BPT).

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART D

[BAT effluent limitations for dissolving sulfite pulp facilities where nitration, viscose, or cellophane pulps are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0030	(0.011)(66.0)/y
Trichlorophenol	0.019	(0.068)(66.0)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART D

[BAT effluent limitations for dissolving sulfite pulp facilities where acetate grade pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0033	(0.011)(72.7)/y
Trichlorophenol	0.021	(0.068)(72.7)/y
y = wastewater discharged in kgal per ton of product.		

§ 430.45 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations:

SUBPART D

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.7	0.35	0.2
TSS	0.15	0.1	0.05
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to the annual average effluent limitations:

SUBPART D

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.15	0.1	0.05
TSS	0.15	0.1	0.05
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to the annual average effluent limitations:

SUBPART D

[BPT effluent limitations for dissolving sulfite pulp facilities where nitration grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	41.4	21.5	12.1
TSS	70.65	38.05	20.9
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[BPT effluent limitations for dissolving sulfite pulp facilities where viscose grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	44.3	23.0	12.9
TSS	70.65	38.05	20.9
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[BPT effluent limitations for dissolving sulfite pulp facilities where cellophane grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	48.05	24.95	14.0
TSS	70.65	38.05	20.9
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART D

[BPT effluent limitations for dissolving sulfite pulp facilities where acetate grade pulp is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	[1]50.80	[1]26.40	[1]14.63
TSS	70.65	38.05	20.9
pH	(2)	(2)	(2)

[1] BOD5 effluent limitations were remanded (Weyerhaeuser Company, et al v. Costle, 590 F. 2nd 1011; D.C. Circuit 1978).
[2] Within the range of 5.0 to 9.0 at all times.

§ 430.37 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART C

[PSNS for unbleached kraft facilities where linerboard is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.015)(9.4)/y	0.00058
Trichlorophenol	(0.013)(9.4)/y	0.00053
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases where POTWs find it necessary to impose mass effluent limitations.

SUBPART C

[PSNS for unbleached kraft facilities where bag paper and other mixed products are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.012)(11.4)/y	0.00058
Trichlorophenol	(0.011)(11.4)/y	0.00053
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases where POTWs find it necessary to impose mass effluent limitations.

SUBPART C

[PSNS for unbleached kraft facilities where pulp and paper are produced using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.013)(11.5)/y	0:00064
Trichlorophenol	(0.012)(11.5)/y	0.00059
y = wastewater discharged in kgal per ton of product.		

[a] The following equivalent mass limitations are provided as guidance in cases where POTWs find it necessary to impose mass effluent limitations.

Subpart D—Dissolving Sulfite Subcategory

§ 430.40 Applicability; description of the dissolving sulfite subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp at dissolving sulfite mills.

§ 430.41 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART C—Continued

SPS for unbleached kraft facilities where pulp and paper are produced using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
SS	7.3	3.8	1.9
H	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
entachlorophenol	0.00064	(0.013)(11.5)/y
richlorophenol	0.00059	(0.012)(11.5)/y

= wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

430.36 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 nd 403.13, any existing source subject o this subpart that introduces ollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using those biocides. PSES must be attained on or before July 1, 1984:

SUBPART C

[PSES for unbleached kraft facilities]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.011)(12.6)/y	0.00058
Trichlorophenol	(0.010)(12.6)/y	0.00053

/ = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases where POTWs find it necessary to impose mass effluent limitations.

SUBPART C

PSES for unbleached kraft facilities where pulp and paper are produced using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter	Kg/kkg (or pounds per 1,000 lb) of product[a]
Pentachlorophenol	(0.011)(14.0)/y	0.00064
Trichlorophenol	(0.010)(14.0)/y	0.00059

/ = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases where POTWs find it necessary to impose mass effluent limitations.

SUBPART C

[NSPS for unbleached kraft facilities where linerboard is produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.4	1.8	0.94
TSS	5.8	3.0	1.6
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058	(0.015)(9.4)/y
Trichlorophenol	0.00053	(0.013)(9.4)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART C

[NSPS for unbleached kraft facilities where bag paper and other mixed products are produced]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	5.0	2.71	1.4
TSS	9.1	4.8	2.5
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00058	(0.012)(11.4)/y
Trichlorophenol	0.00053	(0.011)(11.4)/y

y = wastewater discharged in kgal per ton at all times.

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART C

[NSPS for unbleached kraft facilities where pulp and paper are produced using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.9	2.1	1.1

SUBPART C

BCT effluent limitations for unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
)D5	8.0	4.0	2.9
:S	12.5	6.25	3.57
	(1)	(1)	(1)

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

30.34 Effluent limitations representing e degree of effluent reduction attainable the application of the best available chnology economically achievable (BAT).

Except as provided in 40 CFR 125.30 rough 125.32, any existing point urce subject to this subpart where lorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART C

[BAT effluent limitations for unbleached kraft facilities]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
entachlorophenol	0.00058	(0.011)(12.6)/y
richlorophenol	0.00053	(0.010)(12.6)/y

=wastewater discharged in kgal per ton of product.

SUBPART C

BAT effluent limitations for unbleached kraft facilities where pulp and paper are produced using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process and/or a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00064	(0.011)(14.0)/y
Trichlorophenol	0.00059	(0.010)(14.0)/y

/=wastewater discharged in kgal per ton of product.

§ 430.35 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART C

[BPT effluent limitations for unbleached kraft facilities producing pulp and paper using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	8.0	4.0
TSS	12.5	6.25
pH	(1)	(1)

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

SUBPART C

[BPT effluent limitations for unbleached kraft facilities where pulp and paper are produced using a combined unbleached kraft and semi-chemical process, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	[2]	[2]
TSS	[2]	[2]
pH	[2]	[2]

[2] [Reserved].

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations:

SUBPART C

[BCT effluent limitations for unbleached kraft facilities]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers	Non-continuous dischargers (annual average)	
		Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	5.6	2.8	1.9
TSS	12.0	6.0	3.6
pH	(1)	(1)	(1)

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

SUBPART B

[Supplemental PSNS for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
ntachlorophenol	0.0016	(0.012)(31.7)/y
chlorophenol	0.012	(0.092)(31.7)/y
wastewater discharged in kgal per ton of product.		

SUBPART B

[Supplemental PSNS for bleached kraft facilities where pulp and fine papers are produced and soda facilities where pulp and paper are produced]

Pollutant or pollutant parameter	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
ntachlorophenol	0.0014	(0.014)(25.1)/y
chlorophenol	0.011	(0.101)(25.1)/y
wastewater discharged in kgal per ton of product.		

(c) An indirect discharger must monstrate compliance with the etreatment standards in paragraph (1) of this section by monitoring at e point where the wastewater ntaining those pollutants leaves the each plant.

430.28 Best management practices MPs).

The definitions and requirements set rth in 40 CFR 430.03 apply to facilities this subpart.

ubpart C—Unbleached Kraft ubcategory

430.30 Applicability; description of the nbleached kraft subcategory.

The provisions of this subpart are pplicable to discharges resulting from: the production of pulp and paper at unbleached kraft mills; the production of pulp and paper at unbleached kraft-neutral sulfite semi-chemical (cross recovery) mills; and the production of pulp and paper at combined unbleached kraft and semi-chemical mills, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system.

§ 430.31 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

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

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

SUBPART C

[BPT effluent limitations for unbleached kraft facilities]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
OD5	5.6	2.8
SS	12.0	6.0
H	(1)	(1)

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

comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS).

(a)(1) The following pretreatment standards apply with respect to each fiber line that is a new source, unless the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12 that it uses exclusively TCF bleaching processes at that fiber line:

SUBPART B

Pollutant or pollutant property	PSNS	
	Maximum for any 1 day	Monthly average
TCDD	<ML[a]	(b)
TCDF	31.9[c]	(b)
Chloroform	6.92[d]	4.14[d]
Trichlorosyringol	<ML[a]	(b)
3,4,5-trichlorocatechol	<ML[a]	(b)
3,4,6-trichlorocatechol	<ML[a]	(b)
3,4,5-trichloroguaiacol	<ML[a]	(b)
3,4,6-trichloroguaiacol	<ML[a]	(b)
4,5,6-trichloroguaiacol	<ML[a]	(b)
2,4,5-trichlorophenol	<ML[a]	(b)
2,4,6-trichlorophenol	<ML[a]	(b)
Tetrachlorocatechol	<ML[a]	(b)
Tetrachloroguaiacol	<ML[a]	(b)
2,3,4,6-tetrachlorophenol	<ML[a]	(b)
Pentachlorophenol	<ML[a]	(b)
AOX	<ML[a]	(b)
	1.16[e]	0.814[e]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.
[c] Picograms per liter.
[d] Grams per 1,000 kilograms (g/kkg).
[e] Kilograms per 1,000 kilograms (kg/kkg).

(2) The following pretreatment standards apply with respect to each new source fiber line operated by an indirect discharger subject to this section if the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line:

SUBPART B

Pollutant or pollutant parameter	PSNS (TCF)	
	Maximum for any 1 day	Monthly average
AOX	<ML[a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(b) The following pretreatment standards apply to all new source indirect dischargers, regardless of when they commenced discharge, in accordance with the previous subcategorization scheme. An indirect discharger is not required to meet these pretreatment standards if it certifies to the pretreatment control authority that it is not using these compounds as biocides. In cases when POTWs find it necessary to impose mass-based effluent limitations, equivalent mass limitations are provided as guidance:

SUBPART B

[Supplemental PSNS for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0019	(0.013)(36.6)/y
Trichlorophenol	0.014	(0.093)(36.6)/y
y = wastewater discharged in kgal per ton of product.		

Kilograms per 1,000 kilograms (kg/kkg).

(2) The following pretreatment standards apply with respect to each fiber line operated by an indirect discharger bject to this section if the indirect discharger discloses to the pretreatment control authority in a report submitted der 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line. These pretreatment standards ıst be attained on or before April 16, 2001:

SUBPART B

Pollutant or pollutant parameter	PSES (TCF)	
	Maximum for any 1 day	Monthly average
OX	<ML[a]	(b)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.

(b) The following pretreatment standards apply to all indirect dischargers, in accordance with the previous subcat- orization scheme. An indirect discharger is not required to meet these pretreatment standards if it certifies to the etreatment control authority that it is not using these compounds as biocides. In cases when POTWs find it necessary impose mass effluent limitations, equivalent mass limitations are provided as guidance:

SUBPART B

[Supplemental PSES for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0019	(0.011)(41.6)/y
Trichlorophenol	0.014	(0.082)(41.6)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART B

[Supplemental PSES for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0016	(0.011)(35.4)/y
Trichlorophenol	0.012	(0.082)(35.4)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART B

[Supplemental PSES for bleached kraft facilities where pulp and fine papers are produced and soda facilities where pulp and paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0014	(0.011)(30.9)/y
Trichlorophenol	0.011	(0.082)(30.9)/y
y = wastewater discharged in kgal per ton of product		

(c) An indirect discharger must demonstrate compliance with the pretreatment standards in paragraph (a)(1) of this section by monitoring at the point where the wastewater containing those pollutants leaves the bleach plant.

§ 430.27 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must:

SUBPART B—Continued

[Supplemental NSPS for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Trichlorophenol	0.010	(0.076)(31.7)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART B

[Supplemental NSPS for bleached kraft facilities where pulp and fine papers are produced and soda facilities where pulp and paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0014	(0.014)(25.1)/y
Trichlorophenol	0.0088	(0.084)(25.1)/y
y = wastewater discharged in kgal per ton of product.		

(e) Pursuant to 40 CFR 122.44(i) and 122.45(h), a discharger must demonstrate compliance with the limitations in paragraph (b)(1) or (c)(1) of this section, as applicable, by monitoring for all pollutants (except for AOX, COD, BOD5, TSS, and pH) at the point where the wastewater containing those pollutants leaves the bleach plant. The permitting authority may impose effluent limitations and/or monitoring requirements on internal wastestreams for any other pollutants covered in this section as appropriate under 40 CFR 122.44(i) and 122.45(h). In addition, a discharger subject to a limitation on total pulping area condensate, evaporator condensate, and bleach plant wastewater flow under paragraph (c)(2) of this section must demonstrate compliance with that limitation by establishing and maintaining flow measurement equipment monitoring these flows at the point or points where they leave the pulping area, evaporator area, and the bleach plant.

§ 430.26 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES).

(a)(1) The following pretreatment standards apply with respect to each fiber line operated by an indirect discharger subject to this section, unless the indirect discharger discloses to the pretreatment control authority in a report submitted under 40 CFR 403.12(b) that it uses exclusively TCF bleaching processes at that fiber line. These pretreatment standards must be attained on or before April 16, 2001:

SUBPART B

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Monthly average
TCDD	<ML [a]	[b]
TCDF	31.9 [c]	[b]
Chloroform	6.92 [d]	[d] 4.14
Trichlorosyringol	<ML [a]	[b]
3,4,5-trichlorocatechol	<ML [a]	[b]
3,4,6-trichlorocatechol	<ML [a]	[b]
3,4,5-trichloroguaiacol	<ML [a]	[b]
3,4,6-trichloroguaiacol	<ML [a]	[b]
4,5,6-trichloroguaiacol	<ML [a]	[b]
2,4,5-trichlorophenol	<ML [a]	[b]
2,4,6-trichlorophenol	<ML [a]	[b]
Tetrachlorocatechol	<ML [a]	[b]
Tetrachloroguaiacol	<ML [a]	[b]
2,3,4,6-tetrachlorophenol	<ML [a]	[b]
Pentachlorophenol	<ML [a]	[b]
AOX	2.64 [c]	[c] 1.41

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, pretreatment control authorities may do so as appropriate.
[c] Picograms per liter.
[d] Grams per 1,000 kilograms (g/kkg).

SUBPART B

Pollutant or pollutant property	NSPS (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
OX[d]	<ML[a]	[b]	<ML[a]	[b]
OD5[d]	4.52	2.41	N/A	1.73
SS[d]	8.47	3.86	N/A	2.72
H	[1]	[1]	[1]	[1]
OD	[c]	[c]	[c]	[c]

[a] "<ML" means less than the minimum level specified in §430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].
[d] Kilograms per 1,000 kilograms (kg/kkg).
[1] Within the range of 5.0 to 9.0 at all times.

(c) With respect to each new source ber line that is enrolled in the oluntary Advanced Technology Incentives Program, dischargers subject to this section must achieve:

(1) The standards specified in paragraph (b)(1) of this section (except for AOX) or paragraph (b)(2) of this section, as applicable; and

(2) Standards for filtrates, flow, and AOX:

ULTIMATE VOLUNTARY ADVANCED TECHNOLOGY INCENTIVES PROGRAM NSPS

Tier	Filtrate recycling	Total pulping area condensate, evaporator condensate, and bleach plant wastewater flow (annual average)	AOX (kg/kkg)			
			Non-TCF[a]		TCF	
			Maximum for any 1 day	Annual average	Maximum for any 1 day	Annual average
er II	[b]	10 cubic meters/kkg	0.23	0.10	<ML[c]	[d]
er III	[b]	5 cubic meters/kkg	0.11	0.05	<ML[c]	[d]

[a] Non-TCF: Pertains to any fiber line that does not use exclusively TCF bleaching processes.
[b] Complete recycling to the chemical recovery system of all filtrates generated prior to bleaching.
[c] "<ML" means less than the minimum level specified in §430.01(i) for the particular pollutant.
[d] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.

(d) These additional standards apply o all new sources, regardless of when ney commenced discharge, in ccordance with the previous subcategorization scheme unless the discharger certifies to the permitting authority that it is not using these compounds as biocides. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply. Concentration limitations will only apply to non-continuous dischargers:

SUBPART B

[Supplemental NSPS for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
entachlorophenol	0.0019	(0.013)(36.6)/y
richlorophenol	0.012	(0.077)(36.6)/y
= wastewater discharged in kgal per ton of product.		

SUBPART B

[Supplemental NSPS for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
entachlorophenol	0.0016	(0.012)(31.7)/y

SUBPART B

[1982 New Source Performance Standards for bleached kraft facilities where pulp and fine papers are produced and soda facilities where pulp and paper are produced]

Pollutant or pollutant property	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day	Average of daily values for 30 consecutive days	Annual average
	kg/kkg (or pounds per 1,000 lb) of product		
BOD5	5.7	3.1	1.62
TSS	9.1	4.8	2.53
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(b) Except as provided in paragraph (c) of this section—

(1) The following standards apply with respect to each new source fiber line that does not use an exclusively TCF bleaching process, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22, and that commences discharge after June 15, 1998:

SUBPART B

Pollutant or pollutant property	NSPS	
	Maximum for any 1 day	Monthly average
TCDD	<ML[a]	(b)
TCDF	31.9[c]	(b)
Chloroform	6.92[d]	4.14[d]
Trichlorosyringol	<ML[a]	(b)
3,4,5-trichlorocatechol	<ML[a]	(b)
3,4,6-trichlorocatechol	<ML[a]	(b)
3,4,5-trichloroguaiacol	<ML[a]	(b)
3,4,6-trichloroguaiacol	<ML[a]	(b)
4,5,6-trichloroguaiacol	<ML[a]	(b)
2,4,5-trichlorophenol	<ML[a]	(b)
2,4,6-trichlorophenol	<ML[a]	(b)
Tetrachlorocatechol	<ML[a]	(b)
Tetrachloroguaiacol	<ML[a]	(b)
2,3,4,6-tetrachlorophenol	<ML[a]	(b)
Pentachlorophenol	<ML[a]	(b)

	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day (kg/kkg)	Monthly average (kg/kkg)	Annual average (kg/kkg)
AOX	0.476	0.272	0.208
BOD5	4.52	2.41	1.73
TSS	8.47	3.86	2.72
pH	(1)	(1)	(1)
COD	(e)	(e)	(e)

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] Picograms per liter.
[d] Grams per 1,000 kilograms(g/kkg).
[e] [Reserved].
[1] Within the range of 5.0 to 9.0 at all times.

(2) The following standards apply with respect to each new source fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22, and that commences discharge after June 15, 1998:

SUBPART B

Supplemental BAT effluent limitations for bleached kraft facilities where pulp and fine papers are produced and soda facilities where pulp and paper are produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
entachlorophenol	0.0014	(0.011) (30.9)/y
richlorophenol	0.0088	(0.068) (30.9)/y
= wastewater discharged in kgal per ton of product.		

(e) Pursuant to 40 CFR 122.44(i) and 22.45(h), a discharger must emonstrate compliance with the ffluent limitations in paragraph (a)(1) r (b)(3) of this section, as applicable, by nonitoring for all pollutants (except for OX and COD) at the point where the vastewater containing those pollutants eaves the bleach plant. The permitting uthority may impose effluent imitations and/or monitoring equirements on internal wastestreams or any other pollutants covered in this ection as appropriate under 40 CFR 122.44(i) and 122.45(h). In addition, a discharger subject to a limitation on total pulping area condensate, evaporator condensate, and bleach plant wastewater flow under paragraph (b)(4)(i) of this section, for Tier II and Tier III, must demonstrate compliance with that limitation by establishing and maintaining flow measurement equipment to monitor these flows at the point or points where they leave the pulping area, evaporator area, and bleach plant.

§ 430.25 New source performance standards (NSPS).

New sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) The following standards apply to each new source that commenced discharge after June 15, 1988 and before June 15, 1998, provided that the new source was constructed to meet these standards:

SUBPART B

[1982 New Source Performance Standards for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant property	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day	Average of daily values for 30 consecutive days	Annual average
	kg/kkg (or pounds per 1,000 lb) of product		
BOD5	10.3	5.5	2.88
TSS	18.2	9.5	5.00
pH	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

SUBPART B

[1982 New Source Performance Standards for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day	Average of daily values for 30 consecutive days	Annual average
	kg/kkg (or pounds per 1,000 lb) of product		
BOD5	8.5	4.6	2.41
TSS	14.6	7.6	4.00
pH	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

(2) Best Professional Judgment Milestones: Narrative or numeric limitations and/or special permit conditions, as appropriate, established by the permitting authority on the basis of his or her best professional judgment that reflect reasonable interim milestones toward achievement of the effluent limitations specified in paragraphs (b)(3) and (b)(4) of this section, as applicable.

(3) Six-year Milestones: By April 15, 2004 all dischargers enrolled in the Voluntary Advanced Technology Incentives Program must achieve the following:

(i) The effluent limitations specified in paragraph (a)(1) of this section, except that, with respect to AOX, dischargers subject to Tier I effluent limitations specified in paragraph (b)(4)(i) of this section must achieve the AOX limitation specified in that paragraph; or

(ii) For dischargers that use exclusively TCF bleaching processes as of April 15, 2004, the effluent limitations specified in paragraph (a)(2) of this section.

(4)(i) Stage 2 Limitations:

ULTIMATE VOLUNTARY ADVANCED TECHNOLOGY INCENTIVES PROGRAM BAT LIMITATIONS

Tier	Kappa number (annual average)	Filtrate recycling	Total pulping area condensate, evaporator condensate, and bleach plant wastewater flow (annual average)	AOX (kg/kkg)			
				Non-TCF [a]		TCF	
				Maximum for any 1 day	Annual average	Maximum for any 1 day	Annual average
Tier I	20 (softwood furnish) 13 (Hardwood furnish)	[b]	N/A	0.58	0.26	<ML [c]	[d]
Tier II	NA	[b]	10 cubic meters/kkg	0.23	0.10	<ML [c]	[d]
Tier III	N/A	[b]	5 cubic meters/kkg	0.11	0.5	<ML [c]	[d]

[a] Non-TCF: Pertains to any fiber line that does not use exclusively TCF bleaching processes.
[b] Complete recycling to the chemical recovery system of all filtrates generated prior to bleaching. Under Tier I, this includes all filtrates up to the point where kappa number is measures.
[c] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[d] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
AN/A means "not applicable."

(ii) Deadlines. (A) A discharger enrolled in Tier I of the Voluntary Advanced Technology Incentives Program must achieve for Tier I limitations in paragraph (b)(4)(i) of this section by April 15, 2004.

(B) A discharger enrolled in Tier II of the Voluntary Advanced Technology Incentives Program must achieve the Tier II limitations in paragraph (b)(4)(i) of this section by April 15, 2009.

(C) A discharger enrolled in Tier III of the Voluntary Advanced Technology Incentives Program must achieve the Tier III limitations in paragraph (b)(4)(i) of this section by April 15, 2014.

(c) [RESERVED].

(d) The following additional effluent limitations apply to all dischargers subject to this section in accordance with the previous subcategorization scheme unless the discharger certifies to the permitting authority that it is not using these compounds as biocides. Also, for non-continuous dischargers, concentration limitation (mg/l) shall apply. Concentration limitations will only apply to non-continuous dischargers:

SUBPART B

[Supplemental BAT effluent limitations for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0019	(0.011)(41.6)/y
Trichlorophenol	0.012	(0.068)(41.6)/y
y = wastewater discharged in kgal per ton product.		

SUBPART B

[Supplemental BAT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant property	Maximun for any 1 day	
	kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0016	(0.11)(35.4)/y
Trichlorophenol	0.010	(0.068)(35.4)/y
y = wastewater discharged in kgal per ton of product.		

SUBPART B

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Monthly average
)D	<ML[a]	[b]
)F	31.9[c]	[b]
oroform	6.92[d]	4.14 [d]
hlorosyringol	<ML[a]	[b]
5-trichlorocatechol	<ML[a]	[b]
6-trichlorocatechol	<ML[a]	[b]
5-trichloroguaiacol	<ML[a]	[b]
6-trichloroguaiacol	<ML[a]	[b]
6-trichloroguaiacol	<ML[a]	[b]
5-trichlorophenol	<ML[a]	[b]
6-trichlorophenol	<ML[a]	[b]
rachlorocatechol	<ML[a]	[b]
rachloroguaiacol	<ML[a]	[b]
4,6-tetrachlorophenol	<ML[a]	[b]
tachlorophenol	<ML[a]	[b]

	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day (kg/kkg)	Monthly average (kg/kkg)	Annual average (kg/kkg)
)X	0.951	0.623	0.512
)D	[e]	[e]	[e]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] Picograms per liter.
[d] Grams per 1,000 kilograms (g/kkg).
[e] [Reserved].

2) The following effluent limitations ply with respect to each fiber line that es exclusively TCF bleaching processes, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

SUBPART B

Pollutant or pollutant property	BAT effluent limitations (TCF)			
	Continuous dischargers		Non-continuous dischargers	
	Maximum for any 1 day	Monthly average	Maximum for any 1 day	Annual average
	kg/kkg(or pounds per 1,000 lb) of product			
)X	<ML[a]	[b]	<ML[a]	[b]
)D	[c]	[c]	[c]	[c]

[a] "<ML" means less than the minimum level specified in § 430.01(i) for the particular pollutant.
[b] This regulation does not specify this type of limitation for this pollutant; however, permitting authorities may do so as appropriate.
[c] [Reserved].

(b) The following limitations apply ith respect to each fiber line enrolled the Voluntary Advanced Technology centives Program:

(1) Stage 1 Limitations: Numeric nitations that are equivalent to the scharger's existing effluent quality or e discharger's current effluent nitations established under CWA ction 301(b)(2), whichever are more ringent, for the pollutants identified in ıragraph (a)(1) of this section (with the ception of COD). For AOX, the permitting authority must determine existing effluent quality for each fiber line enrolled in the Voluntary Advanced Technology Incentives Program at the end of the pipe based on loadings attributable to that fiber line. For the remaining pollutants, with the exception of COD, the permitting authority must determine existing effluent quality for each fiber line enrolled in the Voluntary Advanced Technology Incentives Program at the point where the wastewater containing those pollutants leaves the bleach plant. These limitations must be recalculated each time the NPDES permit of a discharger enrolled in the Voluntary Advanced Technology Incentives Program is reissued, up to:

(i) April 15, 2004 for all pollutants in paragraph (a)(1) of this section except AOX: and

(ii) The date specified in paragraph (b)(4)(ii) of this section for achieving the applicable AOX limitation specified in paragraph (b)(4)(i).

SUBPART B—Continued

[BPT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where pulp and fine papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.35	0.2	0.10
TSS	1.15	0.6	0.30
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for soda facilities where pulp and papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.3	0.2	0.10
TSS	1.1	0.55	0.35
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). The limitations shall be the same as those specified in § 430.22 of this subpart for the best practicable control technology currently available (BPT).

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

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

(a) Except as provided in paragraph (b) of this section—

(1) The following effluent limitations apply with respect to each fiber line that does not use an exclusively TCF bleaching process, as disclosed by the discharger in its NPDES permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22:

Subpart B—Continued

[BPT effluent limitations for bleached kraft facilities where pulp and fine papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
.....	(1)	(1)	(1)

Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for soda facilities where pulp and papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
)D5	0.15	0.1	0.05
₂S	0.5	0.25	0.15
.....	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

(d) The following limitations establish ıe quantity or quality of pollutants or ollutant properties, controlled by this ection, resulting from the use of log umes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations:

SUBPART B

[BPT effluent limitations for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
₃OD5	0.4	0.2	0.15
₃SS	1.15	0.6	0.35
H	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
OD5	0.45	0.25	0.10
SS	1.25	0.7	0.35

SUBPART B—Continued

[BPT effluent limitations for soda facilities where pulp and papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
TSS	5.25	2.8	1.55
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations:

SUBPART B

[BPT effluent limitations for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.2	0.1	0.1
TSS	0.6	0.3	0.15
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times..

SUBPART B

[BPT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.25	0.15	0.05
TSS	0.65	0.35	0.20
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

Subpart B

[BPT effluent limitations for bleached kraft facilities where pulp and fine papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.2	0.1	0.05
TSS	0.55	0.3	0.15

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations:

SUBPART B

[BPT effluent limitations for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
OD5	2.3	1.2	0.70
SS	5.3	2.85	1.55
H	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	2.25	1.2	0.65
TSS	5.75	3.1	1.70
pH	(1)	(1)	(1)

[1] 1 Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where pulp and fine papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	1.95	1.0	0.55
TSS	5.3	2.85	1.55
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for soda facilities where pulp and papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	2.05	1.1	0.60

SUBPART B

[BPT effluent limitations for bleached kraft facilities where market pulp is produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	15.45	8.05	4.52
TSS	30.4	16.4	9.01
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where paperboard, coarse paper, and tissue paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	13.65	7.1	3.99
TSS	24.0	12.9	7.09
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for bleached kraft facilities where pulp and fine papers are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	10.6	5.5	3.09
TSS	22.15	11.9	6.54
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART B

[BPT effluent limitations for soda facilities where pulp and paper are produced]

Pollutant or pollutant parameter	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	13.7	7.1	3.99
TSS	24.5	13.2	7.25
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

SUBPART A
[PSES]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.011)(55.1)/y	0.0025
Trichlorophenol	(0.082)(55.1)/y	0.019

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

§ 430.17 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for new sources (PSNS) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART A
[PSNS]

Pollutant or pollutant property	Maximum for any 1 day	
	Milligrams/liter (mg/l)	Kg/kkg (or pounds per 1,000 lb) of product [a]
Pentachlorophenol	(0.012)(50.7)/y	0.0025
Trichlorophenol	(0.089)(50.7)/y	0.019

y = wastewater discharged in kgal per ton of product.

[a] The following equivalent mass limitations are provided as guidance in cases when POTWs find it necessary to impose mass effluent limitations.

Subpart B—Bleached Papergrade Kraft and Soda Subcategory

§ 430.20 Applicability; description of the bleached papergrade kraft and soda subcategory.

The provisions of this subpart apply to discharges resulting from: the production of market pulp at bleached kraft mills; the integrated production of paperboard, coarse paper, and tissue paper at bleached kraft mills; the integrated production of pulp and fine papers at bleached kraft mills; and the integrated production of pulp and paper at soda mills.

§ 430.21 Specialized definitions.

(a) The general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part apply to this subpart.

(b) *Baseline BAT limitations or NSPS* means the BAT limitations specified in § 430.24(a) (1) or (2), as applicable, and the NSPS specified in § 430.25(b) (1) or (2), as applicable, that apply to any direct discharger that is not "enrolled" in the "Voluntary Advanced Technology Incentives Program."

(c) *Enroll* means to notify the permitting authority that a mill intends to participate in the "Voluntary Advanced Technology Incentives Program." A mill can enroll by indicating its intention to participate in the program either as part of its application for a National Pollutant Discharge Elimination System (NPDES) permit, or through separate correspondence to the permitting authority as long as the mill signs the correspondence in accordance with 40 CFR 122.22.

(d) *Existing effluent quality* means the level at which the pollutants identified in § 430.24(a)(1) are present in the effluent of a mill "enrolled" in the "Voluntary Advanced Technology Incentives Program."

(e) *Kappa number* is a measure of the lignin content in unbleached pulp, determined after pulping and prior to bleaching.

(f) *Voluntary Advanced Technology Incentives Program* is the program established under § 430.24(b) (for existing direct dischargers) and § 430.25(c) (for new direct dischargers) whereby participating mills agree to accept enforceable effluent limitations and conditions in their NPDES permits that are more stringent than the "baseline BAT limitations or NSPS" that would otherwise apply, in exchange for regulatory- and enforcement-related rewards and incentives.

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

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

SUBPART A
[BAT effluent limitations]

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0025	(0.011)(55.1)/y
Trichlorophenol	0.016	(0.068)(55.1)/y
y = wastewater discharged in kgal per ton of product.		

§ 430.15 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers. Only facilities where chlorophenolic-containing biocides are used shall be subject to pentachlorophenol and trichlorophenol limitations. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

SUBPART A
[NSPS]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	15.6	8.4	4.4
TSS	27.3	14.3	7.5
pH	(1)	(1)	(1)

	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0025	(0.012)(50.7)/y
Trichlorophenol	0.016	(0.074)(50.7)/y
y = wastewater discharged in kgal per ton at all times.		

[1] Within the range of 5.0 to 9.0 at all times.

§ 430.16 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must: comply with 40 CFR part 403; and achieve the following pretreatment standards for existing sources (PSES) if it uses chlorophenolic-containing biocides. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides. PSES must be attained on or before July 1, 1984:

SUBPART A

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
OD5	0.35	0.2	0.1
SS	0.70	0.4	0.2
H	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

(d) The following limitations establish ;e quantity or quality of pollutants or ollutant properties, controlled by this ection, resulting from the use of log lumes or log ponds, which may be ischarged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to the annual average effluent limitations:

SUBPART A

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	0.6	0.35	0.2
TSS	1.45	0.8	0.4
pH	(1)	(1)	(1)

1 Within the range of 5.0 to 9.0 at all times.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in 40 CFR 401.16) in § 430.12 of this subpart for the best practicable control technology currently available (BPT).

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart where chlorophenolic-containing biocides are used must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lb/1000 lb) but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides:

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations but shall be subject to annual average effluent limitations:

SUBPART A

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		
	Maximum for any 1 day	Average of daily values for 30 consecutive days	Non-continuous dischargers
BOD5	23.6	12.25	6.88
TSS	37.3	20.05	11.02
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations:

SUBPART A

[BPT effluent limitations]

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Maximum for any 1 day	Average of daily values for 30 consecutive days	
BOD5	3.2	1.7	0.95
TSS	6.9	3.75	2.0
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations. Non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to the annual average effluent limitations:

(ii) *Monitoring locations.* For direct dischargers, monitoring must be conducted at the point influent enters the wastewater treatment system. For indirect dischargers monitoring must be conducted at the point of discharge to the POTW. For the purposes of this requirement, the mill may select alternate monitoring point(s) in order to isolate possible sources of spent pulping liquor, soap, or turpentine from other possible sources of organic wastewaters that are tributary to the wastewater treatment facilities (e.g., bleach plants, paper machines and secondary fiber operations).

(3) By the date prescribed in paragraph (j)(1)(iii) of this section, each existing discharger subject to this section must complete an initial six-month monitoring program using the procedures specified in paragraph (h)(2) of this section and must establish initial action levels based on the results of that program. A wastewater treatment influent action level is a statistically determined pollutant loading determined by a statistical analysis of six months of daily measurements. The action levels must consist of a lower action level, which if exceeded will trigger the investigation requirements described in paragraph (i) of this section, and an upper action level, which if exceeded will trigger the corrective action requirements described in paragraph (i) of this section.

(4) By the date prescribed in paragraph (j)(1)(vi) of this section, each existing discharger must complete a second six-month monitoring program using the procedures specified in paragraph (h)(2) of this section and must establish revised action levels based on the results of that program. The initial action levels shall remain in effect until replaced by revised action levels.

(5) By the date prescribed in paragraph (j)(2) of this section, each new source subject to this section must complete a six-month monitoring program using the procedures specified in paragraph (h)(2) of this section and must develop a lower action level and an upper action level based on the results of that program.

(6) Action levels developed under this paragraph must be revised using six months of monitoring data after any change in mill design, construction, operation, or maintenance that materially affects the potential for leaks or spills of spent pulping liquor, soap, or turpentine from the immediate process areas.

(i) *Monitoring, corrective action, and reporting requirements.* (1) Each mill subject to this section must conduct daily monitoring of the influent to the wastewater treatment system in accordance with the procedures described in paragraph (h)(2) of this section for the purpose of detecting leaks and spills, tracking the effectiveness of the BMPs, and detecting trends in spent pulping liquor losses.

(2) Whenever monitoring results exceed the lower action level for the period of time specified in the BMP Plan, the mill must conduct an investigation to determine the cause of such exceedance. Whenever monitoring results exceed the upper action level for the period of time specified in the BMP Plan, the mill must complete corrective action to bring the wastewater treatment system influent mass loading below the lower action level as soon as practicable.

(3) Although exceedances of the action levels will not constitute violations of an NPDES permit or pretreatment standard, failure to take the actions required by paragraph (i)(2) of this section as soon as practicable will be a permit or pretreatment standard violation.

(4) Each mill subject to this section must report to the NPDES permitting or pretreatment control authority the results of the daily monitoring conducted pursuant to paragraph (i)(1) of this section. Such reports must include a summary of the monitoring results, the number and dates of exceedances of the applicable action levels, and brief descriptions of any corrective actions taken to respond to such exceedances. Submission of such reports shall be at the frequency established by the NPDES permitting or pretreatment control authority, but in no case less than once per year.

(j) *Compliance deadlines.* (1) *Existing direct and indirect dischargers.* Except as provided in paragraph (j)(2) of this section for new sources, indirect discharging mills subject to this section must meet the deadlines set forth below. Except as provided in paragraph (j)(2) of this section for new sources, NPDES permits must require direct discharging mills subject to this section to meet the deadlines set forth below. If a deadline set forth below has passed at the time the NPDES permit containing the BMP requirement is issued, the NPDES permit must require immediate compliance with such BMP requirement(s).

(i) Prepare BMP Plans and certify to the permitting or pretreatment authority that the BMP Plan has been prepared in accordance with this regulation not later than April 15, 1999;

(ii) Implement all BMPs specified in paragraph (c) of this section that do not require the construction of containment or diversion structures or the installation of monitoring and alarm systems not later than April 15, 1999.

(iii) Establish initial action levels required by paragraph (h)(3) of this section not later than April 15, 1999.

(iv) Commence operation of any new or upgraded continuous, automatic monitoring systems that the mill determines to be necessary under paragraph (c)(3) of this section (other than those associated with construction of containment or diversion structures) not later than April 17, 2000.

(v) Complete construction and commence operation of any spent pulping liquor, collection, containment, diversion, or other facilities, including any associated continuous monitoring systems, necessary to fully implement BMPs specified in paragraph (c) of this section not later than April 16, 2001.

(vi) Establish revised action levels required by paragraph (h)(4) of this section as soon as possible after fully implementing the BMPs specified in paragraph (c) of this section, but not later than January 15, 2002.

(2) *New Sources.* Upon commencing discharge, new sources subject to this section must implement all of the BMPs specified in paragraph (c) of this section, prepare the BMP Plan required by paragraph (d) of this section, and certify to the permitting or pretreatment authority that the BMP Plan has been prepared in accordance with this regulation as required by paragraph (f) of this section, except that the action levels required by paragraph (h)(5) of this section must be established not later than 12 months after commencement of discharge, based on six months of monitoring data obtained prior to that date in accordance with the procedures specified in paragraph (h)(2) of this section.

Subpart A—Dissolving Kraft Subcategory

§ 430.10 Applicability; description of the dissolving kraft subcategory.

The provisions of this subpart apply to discharges resulting from the production of dissolving pulp at kraft mills.

§ 430.11 Specialized definitions.

For the purpose of this subpart, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR part 401 and § 430.01 of this part shall apply to this subpart.

pulping liquor, soap, and turpentine during the planned modifications, and to ensure that construction and supervisory personnel are aware of possible liquor diversions and of the requirement to prevent leaks and spills of spent pulping liquors, soap, and turpentine during construction.

(7) The mill must install and maintain secondary containment (i.e., containment constructed of materials impervious to pulping liquors) for spent pulping liquor bulk storage tanks equivalent to the volume of the largest tank plus sufficient freeboard for precipitation. An annual tank integrity testing program, if coupled with other containment or diversion structures, may be substituted for secondary containment for spent pulping liquor bulk storage tanks.

(8) The mill must install and maintain secondary containment for turpentine bulk storage tanks.

(9) The mill must install and maintain curbing, diking or other means of isolating soap and turpentine processing and loading areas from the wastewater treatment facilities.

(10) The mill must conduct wastewater monitoring to detect leaks and spills, to track the effectiveness of the BMPs, and to detect trends in spent pulping liquor losses. Such monitoring must be performed in accordance with paragraph (i) of this section.

(d) *Requirement to develop a BMP Plan.* (1) Each mill subject to this section must prepare and implement a BMP Plan. The BMP Plan must be based on a detailed engineering review as described in paragraphs (d)(2) and (3) of this section. The BMP Plan must specify the procedures and the practices required for each mill to meet the requirements of paragraph (c) of this section, the construction the mill determines is necessary to meet those requirements including a schedule for such construction, and the monitoring program (including the statistically derived action levels) that will be used to meet the requirements of paragraph (i) of this section. The BMP Plan also must specify the period of time that the mill determines the action levels established under paragraph (h) of this section may be exceeded without triggering the responses specified in paragraph (i) of this section.

(2) Each mill subject to this section must conduct a detailed engineering review of the pulping and chemical recovery operations—including but not limited to process equipment, storage tanks, pipelines and pumping systems, loading and unloading facilities, and other appurtenant pulping and chemical recovery equipment items in spent pulping liquor, soap, and turpentine service—for the purpose of determining the magnitude and routing of potential leaks, spills, and intentional diversions of spent pulping liquors, soap, and turpentine during the following periods of operation:

(i) Process start-ups and shut downs;
(ii) Maintenance;
(iii) Production grade changes;
(iv) Storm or other weather events;
(v) Power failures; and
(vi) Normal operations.

(3) As part of the engineering review, the mill must determine whether existing spent pulping liquor containment facilities are of adequate capacity for collection and storage of anticipated intentional liquor diversions with sufficient contingency for collection and containment of spills. The engineering review must also consider:

(i) The need for continuous, automatic monitoring systems to detect and control leaks and spills of spent pulping liquor, soap, and turpentine;

(ii) The need for process wastewater diversion facilities to protect end-of-pipe wastewater treatment facilities from adverse effects of spills and diversions of spent pulping liquors, soap, and turpentine;

(iii) The potential for contamination of storm water from the immediate process areas; and

(iv) The extent to which segregation and/or collection and treatment of contaminated storm water from the immediate process areas is appropriate.

(e) *Amendment of BMP Plan.* (1) Each mill subject to this section must amend its BMP Plan whenever there is a change in mill design, construction, operation, or maintenance that materially affects the potential for leaks or spills of spent pulping liquor, turpentine, or soap from the immediate process areas.

(2) Each mill subject to this section must complete a review and evaluation of the BMP Plan five years after the first BMP Plan is prepared and, except as provided in paragraph (e)(1) of this section, once every five years thereafter. As a result of this review and evaluation, the mill must amend the BMP Plan within three months of the review if the mill determines that any new or modified management practices and engineered controls are necessary to reduce significantly the likelihood of spent pulping liquor, soap, and turpentine leaks, spills, or intentional diversions from the immediate process areas, including a schedule for implementation of such practices and controls.

(f) *Review and certification of BMP Plan.* The BMP Plan, and any amendments thereto, must be reviewed by the senior technical manager at the mill and approved and signed by the mill manager. Any person signing the BMP Plan or its amendments must certify to the permitting or pretreatment control authority under penalty of law that the BMP Plan (or its amendments) has been prepared in accordance with good engineering practices and in accordance with this regulation. The mill is not required to obtain approval from the permitting or pretreatment control authority of the BMP Plan or any amendments thereto.

(g) *Record keeping requirements.* (1) Each mill subject to this section must maintain on its premises a complete copy of the current BMP Plan and the records specified in paragraph (g)(2) of this section and must make such BMP Plan and records available to the permitting or pretreatment control authority and the Regional Administrator or his or her designee for review upon request.

(2) The mill must maintain the following records for three years from the date they are created:

(i) Records tracking the repairs performed in accordance with the repair program described in paragraph (c)(2) of this section;

(ii) Records of initial and refresher training conducted in accordance with paragraph (c)(4) of this section;

(iii) Reports prepared in accordance with paragraph (c)(5) of this section; and

(iv) Records of monitoring required by paragraphs (c)(10) and (i) of this section.

(h) *Establishment of wastewater treatment system influent action levels.* (1) Each mill subject to this section must conduct a monitoring program, described in paragraph (h)(2) of this section, for the purpose of defining wastewater treatment system influent characteristics (or action levels), described in paragraph (h)(3) of this section, that will trigger requirements to initiate investigations on BMP effectiveness and to take corrective action.

(2) Each mill subject to this section must employ the following procedures in order to develop the action levels required by paragraph (h) of this section:

(i) *Monitoring parameters.* The mill must collect 24-hour composite samples and analyze the samples for a measure of organic content (e.g., Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC)). Alternatively, the mill may use a measure related to spent pulping liquor losses measured continuously and averaged over 24 hours (e.g., specific conductivity or color).

430.03 Best management practices (BMPs) for spent pulping liquor, soap, and turpentine management, spill prevention, and control.

(a) *Applicability.* This section applies to direct and indirect discharging pulp, paper, and paperboard mills with pulp production in subparts B (Bleached Papergrade Kraft and Soda) and E (Papergrade Sulfite).

(b) *Specialized definitions.* (1) *Action Level:* A daily pollutant loading that when exceeded triggers investigative or corrective action. Mills determine action levels by a statistical analysis of six months of daily measurements collected at the mill. For example, the lower action level may be the 75th percentile of the running seven-day averages (that value exceeded by 25 percent of the running seven-day averages) and the upper action level may be the 90th percentile of the running seven-day averages (that value exceeded by 10 percent of the running seven-day averages).

(2) *Equipment Items in Spent Pulping Liquor, Soap, and Turpentine Service:* Any process vessel, storage tank, pumping system, evaporator, heat exchanger, recovery furnace or boiler, pipeline, valve, fitting, or other device that contains, processes, transports, or comes into contact with spent pulping liquor, soap, or turpentine. Sometimes referred to as "equipment items."

(3) *Immediate Process Area:* The location at the mill where pulping, screening, knotting, pulp washing, pulping liquor concentration, pulping liquor processing, and chemical recovery facilities are located, generally the battery limits of the aforementioned processes. "Immediate process area" includes spent pulping liquor storage and spill control tanks located at the mill, whether or not they are located in the immediate process area.

(4) *Intentional Diversion:* The planned removal of spent pulping liquor, soap, or turpentine from equipment items in spent pulping liquor, soap, or turpentine service by the mill for any purpose including, but not limited to, maintenance, grade changes, or process shutdowns.

(5) *Mill:* The owner or operator of a direct or indirect discharging pulp, paper, or paperboard manufacturing facility subject to this section.

(6) *Senior Technical Manager:* The person designated by the mill manager to review the BMP Plan. The senior technical manager shall be the chief engineer at the mill, the manager of pulping and chemical recovery operations, or other such responsible person designated by the mill manager who has knowledge of and responsibility for pulping and chemical recovery operations.

(7) *Soap:* The product of reaction between the alkali in kraft pulping liquor and fatty acid portions of the wood, which precipitate out when water is evaporated from the spent pulping liquor.

(8) *Spent Pulping Liquor:* For kraft and soda mills "spent pulping liquor" means black liquor that is used, generated, stored, or processed at any point in the pulping and chemical recovery processes. For sulfite mills "spent pulping liquor" means any intermediate, final, or used chemical solution that is used, generated, stored, or processed at any point in the sulfite pulping and chemical recovery processes (e.g., ammonium-, calcium-, magnesium-, or sodium-based sulfite liquors).

(9) *Turpentine:* A mixture of terpenes, principally pinene, obtained by the steam distillation of pine gum recovered from the condensation of digester relief gases from the cooking of softwoods by the kraft pulping process. Sometimes referred to as sulfate turpentine.

(c) *Requirement to implement Best Management Practices.* Each mill subject to this section must implement the Best Management Practices (BMPs) specified in paragraphs (c)(1) through (10) of this section. The primary objective of the BMPs is to prevent leaks and spills of spent pulping liquors, soap, and turpentine. The secondary objective is to contain, collect, and recover at the immediate process area, or otherwise control, those leaks, spills, and intentional diversions of spent pulping liquor, soap, and turpentine that do occur. BMPs must be developed according to best engineering practices and must be implemented in a manner that takes into account the specific circumstances at each mill. The BMPs are as follows:

(1) The mill must return spilled or diverted spent pulping liquors, soap, and turpentine to the process to the maximum extent practicable as determined by the mill, recover such materials outside the process, or discharge spilled or diverted material at a rate that does not disrupt the receiving wastewater treatment system.

(2) The mill must establish a program to identify and repair leaking equipment items. This program must include:

(i) Regular visual inspections (e.g., once per day) of process areas with equipment items in spent pulping liquor, soap, and turpentine service;

(ii) Immediate repairs of leaking equipment items, when possible. Leaking equipment items that cannot be repaired during normal operations must be identified, temporary means for mitigating the leaks must be provided, and the leaking equipment items repaired during the next maintenance outage;

(iii) Identification of conditions under which production will be curtailed or halted to repair leaking equipment items or to prevent pulping liquor, soap, and turpentine leaks and spills; and

(iv) A means for tracking repairs over time to identify those equipment items where upgrade or replacement may be warranted based on frequency and severity of leaks, spills, or failures.

(3) The mill must operate continuous, automatic monitoring systems that the mill determines are necessary to detect and control leaks, spills, and intentional diversions of spent pulping liquor, soap, and turpentine. These monitoring systems should be integrated with the mill process control system and may include, e.g., high level monitors and alarms on storage tanks; process area conductivity (or pH) monitors and alarms; and process area sewer, process wastewater, and wastewater treatment plant conductivity (or pH) monitors and alarms.

(4) The mill must establish a program of initial and refresher training of operators, maintenance personnel, and other technical and supervisory personnel who have responsibility for operating, maintaining, or supervising the operation and maintenance of equipment items in spent pulping liquor, soap, and turpentine service. The refresher training must be conducted at least annually and the training program must be documented.

(5) The mill must prepare a brief report that evaluates each spill of spent pulping liquor, soap, or turpentine that is not contained at the immediate process area and any intentional diversion of spent pulping liquor, soap, or turpentine that is not contained at the immediate process area. The report must describe the equipment items involved, the circumstances leading to the incident, the effectiveness of the corrective actions taken to contain and recover the spill or intentional diversion, and plans to develop changes to equipment and operating and maintenance practices as necessary to prevent recurrence. Discussion of the reports must be included as part of the annual refresher training.

(6) The mill must establish a program to review any planned modifications to the pulping and chemical recovery facilities and any construction activities in the pulping and chemical recovery areas before these activities commence. The purpose of such review is to prevent leaks and spills of spent

CAS number	Pollutant	Minimum monitoring frequency		
		Non-ECF [a]	Advanced ECF [b,f]	TCF [c]
1198556 ...	Tetrachlorocatechol	Monthly	Monthly	[d]
2539175 ...	Tetrachloroguiacol	Monthly	Monthly	[d]
2539266 ...	Trichlorosyringol	Monthly	Monthly	[d]
2668248 ...	4,5,6-trichloroguaiacol	Monthly	Monthly	[d]
32139723	3,4,6-trichlorocatechol	Monthly	Monthly	[d]
56961207	3,4,5-trichlorocatechol	Monthly	Monthly	[d]
57057837	3,4,5-trichloroguaiacol	Monthly	Monthly	[d]
58902	2,3,4,6-tetrachlorophenol	Monthly	Monthly	[d]
60712449	3,4,6-trichloroguaiacol	Monthly	Monthly	[d]
87865	Pentachlorophenol [e]	Monthly	Monthly	[d]
88062	2,4,6-trichlorophenol [e]	Monthly	Monthly	[d]
95954	2,4,5-trichlorophenol [e]	Monthly	Monthly	[d]
1746016 ...	2,3,7,8-TCDD	Monthly	Monthly	[d]
51207319	2,3,7,8-TCDF	Monthly	Monthly	[d]
67663	Chloroform	Weekly	Monthly	[d]

[a] Non-ECF: Pertains to any fiber line that does not use exclusively ECF or TCF bleaching processes.
[b] Advanced ECF: Pertains to any fiber line that uses exclusively Advanced ECF bleaching processes, or exclusively ECF and TCF bleaching processes as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22. Advanced ECF consists of the use of extended delignification or other technologies that achieve at least the Tier I performance levels specified in § 430.24(b)(4)(i).
[c] TCF: Pertains to any fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.
[d] This regulation does not specify a limit for this pollutant for TCF bleaching processes.
[e] Monitoring frequency does not apply to this compound when used as a biocide. The permitting authority must determine the appropriate monitoring frequency for this compound, when used as a biocide, under 40 CFR 122.44(i).
[f] Monitoring requirements for these pollutants by mills certifying as Advanced ECF in their NPDES permit application or other communication to the permitting authority will be suspended after one year of monitoring. The permitting authority must determine the appropriate monitoring frequency for these pollutants beyond that time under 40 CFR 122.44(i).

(d) *Reduced monitoring frequencies for AOX under the Voluntary Advanced Technology Incentives Program (year one).* The following monitoring frequencies apply to direct dischargers enrolled in the Voluntary Advanced Technology Incentives Program established under Subpart B of this part for a duration of one year after achievement of the applicable BAT limitations specified in § 430.24(b)(4)(i) or NSPS specified in § 430.25(c)(2):

CAS number	Pollutant	Non-ECF, any tier [a]	Advanced ECF, any tier [b]	TCF, any tier [c]
59473040	AOX	Daily	Weekly	None specified.

[a] Non-ECF: Pertains to any fiber line that does not use exclusively ECF or TCF bleaching processes.
[b] Advanced ECF: Pertains to any fiber line that uses exclusively Advanced ECF bleaching processes or exclusively ECF and TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22. Advanced ECF consists of the use of extended delignification or other technologies that achieve at least the Tier I performance levels specified in § 430.24(b)(4)(i).
[c] TCF: Pertains to any fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.

(e) *Reduced monitoring frequencies for AOX under the Voluntary Advanced Technology Incentives Program (years two through five).* The following monitoring frequencies apply to mills enrolled in the Voluntary Advanced Technology Incentives Program established under Subpart B of this part for a duration of four years starting one year after achievement of the applicable BAT limitations specified in § 430.24(b)(4)(i) or NSPS specified in § 430.25(c)(2):

CAS number	Pollutant	Non-ECF any tier [a]	Advanced ECF—tier I [b]	Advanced ECF—tier II [b]	Advanced ECF—tier III [b]	TCF—any tier [c]
59473040	AOX	Daily	Monthly	Quarterly	Annually	None specified.

[a] Non-ECF: Pertains to any fiber line that does not use exclusively ECF or TCF bleaching processes.
[b] Advanced ECF: Pertains to any fiber line that uses exclusively Advanced ECF bleaching processes or exclusively ECF and TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22. Advanced ECF consists of the use of extended delignification or other technologies that achieve at least the Tier I performance levels specified in § 430.24(b)(4)(i).
[c] TCF: Pertains to any fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22.

unbleached kraft mills including linerboard or bag paper and other mixed products, and to pulp and paperboard production using the unbleached kraft neutral sulfite semi-chemical (cross recovery) process), and subparts F and J of this part (as they pertain to paperboard production from wastepaper from noncorrugating medium furnish or from corrugating medium furnish) where paper and paperboard production shall be measured in air-dry-tons (10% moisture content). Market pulp shall be measured in air-dry tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(2) For AOX and chloroform limitations and standards specified in subparts B and E of this part: Production shall be defined as the annual unbleached pulp production entering the first stage of the bleach plant divided by the number of operating days during that year. Unbleached pulp production shall be measured in air-dried-metric-tons (10% moisture) of brownstock pulp entering the bleach plant at the stage during which chlorine or chlorine-containing compounds are first applied to the pulp. In the case of bleach plants that use totally chlorine free bleaching processes, unbleached pulp production shall be measured in air-dried-metric tons (10% moisture) of brownstock pulp entering the first stage of the bleach plant from which wastewater is discharged. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(o) *TCDD.* 2,3,7,8-tetrachlorodibenzo-p-dioxin.

(p) *TCDF.* 2,3,7,8-tetrachlorodibenzo-p-furan.

(q) *Totally chlorine-free (TCF) bleaching.* Pulp bleaching operations that are performed without the use of chlorine, sodium hypochlorite, calcium hypochlorite, chlorine dioxide, chlorine monoxide, or any other chlorine-containing compound.

(r) *Wet Barking.* Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

§ 430.02 Monitoring requirements.

This section establishes minimum monitoring frequencies for certain pollutants. Where no monitoring frequency is specified in this section or where the duration of the minimum monitoring frequency has expired under paragraphs (b) through (e) of this section, the permit writer or pretreatment control authority shall determine the appropriate monitoring frequency in accordance with 40 CFR 122.44(i) or 40 CFR part 403, as applicable.

(a) *BAT, NSPS, PSES, and PSNS monitoring frequency for chlorinated organic pollutants.* The following monitoring frequencies apply to discharges subject to subpart B or subpart E of this part:

CAS number	Pollutant	Minimum monitoring frequency	
		Non-TCF[a]	TCF[b]
1198556	Tetrachlorocatechol	Monthly	[c]
2539175	Tetrachloroguaiacol	Monthly	[c]
2539266	Trichlorosyringol	Monthly	[c]
2668248	4,5,6-trichloroguaiacol	Monthly	[c]
32139723	3,4,6-trichlorocatechol	Monthly	[c]
56961207	3,4,5-trichlorocatechol	Monthly	[c]
57057837	3,4,5-trichloroguaiacol	Monthly	[c]
58902	2,3,4,6-tetrachlorophenol	Monthly	[c]
60712449	3,4,6-trichloroguaiacol	Monthly	[c]
87865	Pentachlorophenol[d]	Monthly	[c]
88062	2,4,6-trichlorophenol[d]	Monthly	[c]
95954	2,4,5-trichlorophenol[d]	Monthly	[c]
1746016	2,3,7,8-TCDD	Monthly	[c]
51207319	2,3,7,8-TCDF	Monthly	[c]
67663	chloroform[e]	Weekly	[c]
59473040	AOX[f]	Daily	None specified.

[a] Non-TCF: Pertains to any fiber line that does not use exclusively TCF bleaching processes.

[b] TCF: Pertains to any fiber line that uses exclusively TCF bleaching processes, as disclosed by the discharger in its permit application under 40 CFR 122.21(g)(3) and certified under 40 CFR 122.22 or, for indirect dischargers, as reported to the pretreatment control authority under 40 CFR 403.12 (b), (d), or (e).

[c] This regulation does not specify a limit for this pollutant for TCF bleaching processes.

[d] Monitoring frequency does not apply to this compound when used as a biocide. The permitting or pretreatment control authority must determine the appropriate monitoring frequency for this compound, when used as a biocide, under 40 CFR 122.44(i) or 40 CFR Part 403, as applicable.

[e] This regulation does not specify a limit for this pollutant for Subpart E mills.

[f] This regulation does not specify a limit for this pollutant for the ammonium-based or specialty grade sulfite pulp segments of Subpart E.

(b) *Duration of required monitoring for BAT, NSPS, PSES, and PSNS.* The monitoring frequencies specified in paragraph (a) of this section apply for the following time periods:

(1) For direct dischargers, a duration of five years commencing on the date the applicable limitations or standards from subpart B or subpart E of this part are first included in the discharger's NPDES permit;

(2) For existing indirect dischargers, until April 17, 2006;

(3) For new indirect dischargers, a duration of five years commencing on the date the indirect discharger commences operation.

(c) *Reduced monitoring frequencies for bleach plant pollutants under the Voluntary Advanced Technology Incentives Program.* The following monitoring frequencies apply to mills enrolled in the Voluntary Advanced Technology Incentives Program established under subpart B of this part for a duration of five years commencing after achievement of the applicable BAT limitations specified in § 430.24(b)(3) or NSPS specified in § 430.25(c)(1) for the following pollutants, except as noted in footnote f:

Pollutant	Method	Minimum level
2,3,7,8-TCDD	1613	10 pg/L [a]
2,3,7,8-TCDF	1613	10 pg/L [a]
Trichlorosyringol	1653	2.5 ug/L [b]
3,4,5-Trichlorocatechol	1653	5.0 ug/L [b]
3,4,6-Trichlorocatechol	1653	5.0 ug/L [b]
3,4,5-Trichloroguaiacol	1653	2.5 ug/L [b]
3,4,6-Trichloroguaiacol	1653	2.5 ug/L [b]
4,5,6-Trichloroguaiacol	1653	2.5 ug/L [b]
2,4,5-Trichlorophenol	1653	2.5 ug/L [b]
2,4,6-Trichlorophenol	1653	2.5 ug/L [b]
Tetrachlorocatechol	1653	5.0 ug/L [b]
Tetrachloroguaiacol	1653	5.0 ug/L [b]
2,3,4,6-Tetrachlorophenol	1653	2.5 ug/L [b]
Pentachlorophenol	1653	5.0 ug/L [b]
AOX	1650	20 ug/L [b]

[a] Picograms per liter.
[b] Micrograms per liter.

(j) *New source.* (1) Notwithstanding the criteria codified at 40 CFR 122.29(b)(1), a source subject to subpart B or E of this part is a "new source" if it meets the definition of "new source" at 40 CFR 122.2 and:

(i) It is constructed at a site at which no other source is located; or

(ii) It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source, including the total replacement of a fiber line that causes the discharge of pollutants at an existing source, except as provided in paragraph (j)(2) of this section; or

(iii) Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.

(2) The following are examples of changes made by mills subject to subparts B or E of this part that alone do not cause an existing mill to become a "new source":

(i) Upgrades of existing pulping operations;

(ii) Upgrades or replacement of pulp screening and washing operations;

(iii) Installation of extended cooking and/or oxygen delignification systems or other post-digester, pre-bleaching delignification systems;

(iv) Bleach plant modifications including changes in methods or amounts of chemical applications, new chemical applications, installation of new bleaching towers to facilitate replacement of sodium or calcium hypochlorite, and installation of new pulp washing systems; or

(v) Total replacement of process or production equipment that causes the discharge of pollutants at an existing source (including a replacement fiber line), but only if such replacement is performed for the purpose of achieving limitations that have been included in the discharger's NPDES permit pursuant to § 430.24(b).

(k) *Non-continuous discharger.* (1) Except as provided in paragraph (k)(2) of this section, a non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of the application of the best practicable control technology currently available, the best conventional pollutant control technology, or new source performance standards in lieu of the maximum day and average of 30 consecutive days effluent limitations for conventional pollutants set forth in each subpart.

(2) A mill is a non-continuous discharger for the purposes of determining applicable effluent limitations under subpart B or E of this part (other than conventional limits for existing sources) if, for reasons other than treatment plant upset control (e.g., protecting receiving water quality), the mill is prohibited by the NPDES authority from discharging pollutants during specific periods of time or if it is required to release its discharge on a variable flow or pollutant loading rate basis.

(l) *POTW.* Publicly owned treatment works as defined at 40 CFR 403.3(o).

(m) *Process wastewater.* For subparts B and E only, process wastewater is any water that, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. For purposes of subparts B and E of this part, process wastewater includes boiler blowdown; wastewaters from water treatment and other utility operations; blowdowns from high rate (e.g., greater than 98 percent) recycled non-contact cooling water systems to the extent they are mixed and co-treated with other process wastewaters; wastewater, including leachates, from landfills owned by pulp and paper mills subject to subpart B or E of this part if the wastewater is commingled with wastewater from the mill's manufacturing or processing facility; and storm waters from the immediate process areas to the extent they are mixed and co-treated with other process wastewaters. For purposes of this part, contaminated groundwaters from on-site or off-site groundwater remediation projects are not process wastewater.

(n) *Production.* (1) For all limitations and standards specified in this part except those pertaining to AOX and chloroform: Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper and paperboard production shall be measured at the off-the-machine moisture content, except for subpart C of this part (as it pertains to pulp and paperboard production at

SUBCATEGORIZATION SCHEME WITH REFERENCES TO FORMER SUBPARTS CONTAINED IN THE JULY 1, 1997 EDITION OF 40 CFR PARTS 425 THROUGH 699

Final codified subpart	Final subcategorization scheme	Types of products covered in the subpart
A	Dissolving Kraft	Dissolving pulp at kraft mills (F[a])
B	Bleached Papergrade Kraft and Soda.	Market pulp at bleached kraft mills (G[a]); paperboard, coarse paper, and tissue paper at bleached kraft mills (H[a]); pulp and fine papers at bleached kraft mills (I[a]); and pulp and paper at soda mills (P[a]).
C	Unbleached Kraft	Pulp and paper at unbleached kraft mills including linerboard or bag paper and other mixed products (A[a]); pulp and paper using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process (D[a]); and pulp and paper at combined unbleached kraft and semi-chemical mills, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system (V[a]).
D	Dissolving Sulfite	Pulp at dissolving sulfite mills for the following grades: nitration, viscose, cellophane, and acetate (K[a]).
E	Papergrade Sulfite —Calcium-, Magnesium-, or Sodium-based pulps. —Ammonium-based pulps. —Specialty grade pulps.	Pulp and paper at papergrade sulfite mills where blow pit pulp washing techniques are used (J[a]) and pulp and paper at papergrade sulfite mills where vacuum or pressure drums are used to wash pulp (U[a]).
F	Semi-Chemical	Pulp and paper at semi-chemical mills using an ammonia base or a sodium base (B[a]).
G	Mechanical Pulp	Pulp and paper at groundwood chemi-mechanical mills (L[a]); pulp and paper at groundwood mills through the application of the thermo-mechanical process (M[a]); pulp and coarse paper, molded pulp products, and newsprint at groundwood mills (N[a]); and pulp and fine paper at groundwood mills (O[a]).
H	Non-Wood Chemical Pulp	Pulp and paper at non-wood chemical pulp mills.
I	Secondary Fiber Deink	Pulp and paper at deink mills including fine papers, tissue papers, or newsprint (Q[a]).
J	Secondary Fiber Non-Deink	Paperboard from wastepaper from noncorrugating medium furnish or from corrugating medium furnish (E[a]); tissue paper from wastepaper without deinking at secondary fiber mills (T[a]); molded products from wastepaper without deinking (W[a]); and builders' paper and roofing felt from wastepaper (40 CFR Part 431, Subpart A[a]).
K	Fine and Lightweight Papers from Purchased Pulp.	Fine Papers at nonintegrated mills using wood fiber furnish or cotton fiber furnish (R[a]); and lightweight papers at nonintegrated mills or lightweight electrical papers at nonintegrated mills (X[a]).
L	Tissue, Filter, Non-woven, and Paperboard from Purchased Pulp.	Tissue papers at nonintegrated mills (S[a]); filter and non-woven papers at nonintegrated mills (Y[a]); and paperboard at nonintegrated mills (Z[a]).

[a] This subpart is contained in the 40 CFR parts 425 through 699, edition revised as of July 1, 1997.

§ 430.01 General definitions.

In addition to the definitions set forth in 40 CFR part 401 and 40 CFR 403.3, the following definitions apply to this part:

(a) *Adsorbable organic halides (AOX).* A bulk parameter that measures the total mass of chlorinated organic matter in water and wastewater.

(b) *Annual average.* The mean concentration, mass loading or production-normalized mass loading of a pollutant over a period of 365 consecutive days (or such other period of time determined by the permitting authority to be sufficiently long to encompass expected variability of the concentration, mass loading, or production-normalized mass loading at the relevant point of measurement).

(c) *Bleach plant.* All process equipment used for bleaching beginning with the first application of bleaching agents (e.g., chlorine, chlorine dioxide, ozone, sodium or calcium hypochlorite, or peroxide), each subsequent extraction stage, and each subsequent stage where bleaching agents are applied to the pulp. For mills in Subpart E of this part producing specialty grades of pulp, the bleach plant includes process equipment used for the hydrolysis or extraction stages prior to the first application of bleaching agents. Process equipment used for oxygen delignification prior to the application of bleaching agents is not part of the bleach plant.

(d) *Bleach plant effluent.* The total discharge of process wastewaters from the bleach plant from each physical bleach line operated at the mill, comprising separate acid and alkaline filtrates or the combination thereof.

(e) *Chemical oxygen demand (COD).* A bulk parameter that measures the oxygen-consuming capacity of organic and inorganic matter present in water or wastewater. It is expressed as the amount of oxygen consumed from a chemical oxidant in a specific test.

(f) *Elemental chlorine-free (ECF).* Any process for bleaching pulps in the absence of elemental chlorine and hypochlorite that uses exclusively chlorine dioxide as the only chlorine-containing bleaching agent.

(g) *End of the pipe.* The point at which final mill effluent is discharged to waters of the United States or introduced to a POTW.

(h) *Fiber line.* A series of operations employed to convert wood or other fibrous raw material into pulp. If the final product is bleached pulp, the fiber line encompasses pulping, de-knotting, brownstock washing, pulp screening, centrifugal cleaning, and multiple bleaching and washing stages.

(i) *Minimum level (ML).* The level at which the analytical system gives recognizable signals and an acceptable calibration point. The following minimum levels apply to pollutants in this part.

430.73 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.74 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.75 New source performance standards (NSPS).
430.76 Pretreatment standards for existing sources (PSES).
430.77 Pretreatment standards for new sources (PSNS).

Subpart H—Non-Wood Chemical Pulp Subcategory

Sec.
430.80 Applicability; description of the non-wood chemical pulp subcategory.
430.81 Specialized definitions.
430.82 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT). [Reserved]
430.83 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT). [Reserved]
430.84 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT). [Reserved]
430.85 New source performance standards (NSPS). [Reserved]
430.86 Pretreatment standards for existing sources (PSES). [Reserved]
430.87 Pretreatment standards for new sources (PSNS). [Reserved]

Subpart I—Secondary Fiber Deink Subcategory

Sec.
430.90 Applicability; description of the secondary fiber deink subcategory.
430.91 Specialized definitions.
430.92 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.93 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.94 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.95 New source performance standards (NSPS).
430.96 Pretreatment standards for existing sources (PSES).
430.97 Pretreatment standards for new sources (PSNS).

Subpart J—Secondary Fiber Non-Deink Subcategory

Sec.
430.100 Applicability; description of the secondary fiber non-deink subcategory.
430.101 Specialized definitions.
430.102 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.103 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.104 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.105 New source performance standards (NSPS).
430.106 Pretreatment standards for existing sources (PSES).
430.107 Pretreatment standards for new sources (PSNS).

Subpart K—Fine and Lightweight Papers From Purchased Pulp Subcategory

Sec.
430.110 Applicability; description of the fine and lightweight papers from purchased pulp subcategory.
430.111 Specialized definitions.
430.112 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.113 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.114 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.115 New source performance standards (NSPS).
430.116 Pretreatment standards for existing sources (PSES).
430.117 Pretreatment standards for new sources (PSNS).

Subpart L—Tissue, Filter, Non-Woven, and Paperboard From Purchased Pulp Subcategory

Sec.
430.120 Applicability; description of the tissue, filter, non-woven, and paperboard from purchased pulp subcategory.
430.121 Specialized definitions.
430.122 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.123 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.124 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.125 New source performance standards (NSPS).
430.126 Pretreatment standards for existing sources (PSES).
430.127 Pretreatment standards for new sources (PSNS).

Appendix A to Part 430—Methods 1650 and 1653

Authority: Sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, as amended, (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361), and Section 112 of the Clean Air Act, as amended (42 U.S.C. 7412).

General Provisions

§ 430.00 Applicability.

(a) This part applies to any pulp, paper, or paperboard mill that discharges or may discharge process wastewater pollutants to the waters of the United States, or that introduces or may introduce process wastewater pollutants into a publicly owned treatment works.

(b) The following table presents the subcategorization scheme codified in this part, with references to former subpart designations contained in the 1997 edition of 40 CFR parts 425 through 699:

Columbia Parkway, Cincinnati, OH 45226. (available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

6. Pinkerton, J.E. "Method for Measuring Methanol in Pulp Mill Vent Gases." National Council of the Pulp and Paper Industry for Air and Stream Improvement, Inc., New York, NY.

17.0 Tables, Diagrams, Flowcharts, and Validation Data

[Reserved].

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PART 261—[AMENDED]

1. The authority citation of part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Section 261.4 is amended by adding paragraph (a) (15) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(15) Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 CFR 63.446(e). The exemption applies only to combustion at the mill generating the condensates.

* * * * *

1. Part 430 is revised to read as follows:

PART 430—THE PULP, PAPER, AND PAPERBOARD POINT SOURCE CATEGORY

General Provisions

Sec.

430.00 Applicability.
430.01 General definitions.
430.02 Monitoring requirements.
430.03 Best management practices (BMPs) for spent pulping liquor, soap, and turpentine management, spill prevention, and control.

Subpart A—Dissolving Kraft Subcategory

Sec.

430.10 Applicability; description of the dissolving kraft subcategory.
430.11 Specialized definitions.
430.12 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.14 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.15 New source performance standards (NSPS).
430.16 Pretreatment standards for existing sources (PSES).
430.17 Pretreatment standards for new sources (PSNS).

Subpart B—Bleached Papergrade Kraft and Soda Subcategory

Sec.

430.20 Applicability; description of the bleached papergrade kraft and soda subcategory.
430.21 Specialized definitions.
430.22 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.23 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.24 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.25 New source performance standards (NSPS).
430.26 Pretreatment standards for existing sources (PSES).
430.27 Pretreatment standards for new sources (PSNS).
430.28 Best management practices (BMPs).

Subpart C—Unbleached Kraft Subcategory

Sec.

430.30 Applicability; description of the unbleached kraft subcategory.
430.31 Specialized definitions.
430.32 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.33 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.34 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.35 New source performance standards (NSPS).
430.36 Pretreatment standards for existing (PSES).
430.37 Pretreatment standards for new sources (PSNS).

Subpart D—Dissolving Sulfite Subcategory

Sec.

430.40 Applicability; description of the dissolving sulfite subcategory.
430.41 Specialized definitions.
430.42 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.43 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.44 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.45 New source performance standards (NSPS).
430.46 Pretreatment standards for existing sources (PSES).
430.47 Pretreatment standards for new sources (PSNS).

Subpart E—Papergrade Sulfite Subcategory

Sec.

430.50 Applicability; description of the papergrade sulfite subcategory.
430.51 Specialized definitions.
430.52 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.53 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.54 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.55 New source performance standards (NSPS).
430.56 Pretreatment standards for existing sources (PSES).
430.57 Pretreatment standards for new sources (PSNS).
430.58 Best management practices (BMPs).

Subpart F—Semi-Chemical Subcategory

Sec.

430.60 Applicability; description of the semi-chemical subcategory.
430.61 Specialized definitions.
430.62 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).
430.63 Effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology (BCT).
430.64 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).
430.65 New source performance standards (NSPS).
430.66 Pretreatment standards for existing sources (PSES).
430.67 Pretreatment standards for new sources (PSNS).

Subpart G—Mechanical Pulp Subcategory

Sec.

430.70 Applicability; description of the mechanical pulp subcategory.
430.71 Specialized definitions.
430.72 Effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available (BPT).

each calibration standard, prepare a linear least squares equation relating the response to the mass of methanol in the sample. Perform the calibration before analyzing each set of samples.

10.2.2 Continuing Calibration. At the beginning of each day, analyze the mid level calibration standard as described in section 10.5.1. The response from the daily analysis must agree with the response from the initial calibration within 10 percent. If it does not, the initial calibration must be repeated.

11.0 Analytical Procedure

11.1 Gas Chromatograph Operating Conditions. The following operating conditions are required for the GC:

11.1.1 Injector. Configured for capillary column, splitless, 200 °C (392 °F).

11.1.2 Carrier. Helium at 10 ml/min.

11.1.3 Oven. Initially at 45 °C for 3 minutes; then raise by 10 °C to 70 °C; then raise by 70 °C/min to 200 °C.

11.2 Impinger Sample. Inject 1 µl of the stored sample into the GC. Repeat the injection and average the results. If the sample response is above that of the highest calibration standard, either dilute the sample until it is in the measurement range of the calibration line or prepare additional calibration standards. If the sample response is below that of the lowest calibration standard, prepare additional calibration standards. If additional calibration standards are prepared, there shall be at least two that bracket the response of the sample. These standards should produce approximately 50 percent and 150 percent of the response of the sample.

11.3 Silica Gel Adsorbent Sample. The following items are required for the silica gel adsorbent samples:

11.3.1 Preparation of Samples. Extract the front and backup sections of the adsorbent tube separately. With a file, score the glass adsorbent tube in front of the first section of silica gel. Break the tube open. Remove and discard the glass wool. Transfer the first section of the silica gel to a 5-ml glass vial and stopper the vial. Remove the spacer between the first and second section of the adsorbent tube and discard it. Transfer the second section of silica gel to a separate 5-ml glass vial and stopper the vial.

11.3.2 Desorption of Samples. Add 3 ml of the 10 percent n-propanol solution to each of the stoppered vials and shake or vibrate the vials for 30 minutes.

11.3.3 Inject a 1-µl aliquot of the diluted sample from each vial into the GC. Repeat the injection and average the results. If the sample response is above that of the highest calibration standard, either dilute the sample until it is in the measurement range of the calibration line or prepare additional calibration standards. If the sample response is below that of the lowest calibration standard, prepare additional calibration standards. If additional calibration standards are prepared, there shall be at least two that bracket the response of the sample. These standards should produce approximately 50 percent and 150 percent of the response of the sample.

12.0 Data Analysis and Calculations

12.1 Nomenclature.

C_{af}=Concentration of methanol in the front of the adsorbent tube, µg/ml.

C_{ab}=Concentration of methanol in the back of the adsorbent tube, µg/ml.

C_i=Concentration of methanol in the impinger portion of the sample train, µg/ml.

E=Mass emission rate of methanol, µg/hr (lb/hr).

M_{tot}=Total mass of methanol collected in the sample train, µg.

P_{bar}=Barometric pressure at the exit orifice of the DGM, mm Hg (in. Hg).

P_{std}=Standard absolute pressure, 760 mm Hg (29.92 in. Hg).

Q_{std}=Dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr).

T_m=Average DGM absolute temperature, degrees K (°R).

T_{std}=Standard absolute temperature, 293 degrees K (528 °R).

V_{af}=Volume of front half adsorbent sample, ml.

V_{ab}=Volume of back half adsorbent sample, ml.

V_i=Volume of impinger sample, ml.

V_m=Dry gas volume as measured by the DGM, dry cubic meters (dcm), dry cubic feet (dcf).

$V_{m(std)}$=Dry gas volume measured by the DGM, corrected to standard conditions, dry standard cubic meters (dscm), dry standard cubic feet (dscf).

12.2 Mass of Methanol. Calculate the total mass of methanol collected in the sampling train using Equation 308–1.

$$M_{tot} = V_i C_i + V_{af} C_{af} + V_{ab} C_{ab} \qquad \text{Equation 308-1}$$

12.3 Dry Sample Gas Volume, Corrected to Standard Conditions. Calculate the volume of gas sampled at standard conditions using Equation 308–2.

$$V_m(std) = \frac{V_m Y T_{std} P_{bar}}{T_m P_{std}} \qquad \text{Equation 308-2}$$

12.4 Mass Emission Rate of Methanol. Calculate the mass emission rate of methanol using Equation 308–3.

$$E = \frac{M_{tot} Q_{sd}}{V_{m(std)}} \qquad \text{Equation 308-3}$$

13.0 Method Performance [Reserved]

14.0 Pollution Prevention [Reserved]

15.0 Waste Management [Reserved]

16.0 Bibliography

1. Rom, J.J. "Maintenance, Calibration, and Operation of Isokinetic Source Sampling Equipment." Office of Air Programs, Environmental Protection Agency. Research Triangle Park, NC. APTD–0576 March 1972.

2. Annual Book of ASTM Standards. Part 31; Water, Atmospheric Analysis. American Society for Testing and Materials. Philadelphia, PA. 1974. pp. 40–42.

3. Westlin, P.R. and R.T. Shigehara. "Procedure for Calibrating and Using Dry Gas Volume Meters as Calibration Standards." Source Evaluation Society Newsletter. *3*(1) :17–30. February 1978.

4. Yu, K.K. "Evaluation of Moisture Effect on Dry Gas Meter Calibration." Source Evaluation Society Newsletter. *5*(1) :24–28. February 1980.

5. NIOSH Manual of Analytical Methods, Volume 2. U.S. Department of Health and Human Services National Institute for Occupational Safety and Health. Center for Disease Control. 4676

8.1.2 Leak Check. A leak check prior the sampling run is optional; ;wever, a leak check after the sampling .n is mandatory. The leak-check ·ocedure is as follows:

Temporarily attach a suitable (e.g., 0-40-ml/min) rotameter to the outlet of e DGM, and place a vacuum gauge at r near the probe inlet. Plug the probe ılet, pull a vacuum of at least 250 mm 0 inch) Hg, and note the flow rate as dicated by the rotameter. A leakage te not in excess of 2 percent of the ·erage sampling rate is acceptable.

Note: Carefully release the probe inlet plug ·fore turning off the pump.

8.1.3 Sample Collection. Record the ·itial DGM reading and barometric ressure. To begin sampling, position ıe tip of the Teflon® tubing at the ampling point, connect the tubing to ne impinger, and start the pump. ·djust the sample flow to a constant ate between 200 and 1000 ml/min as ndicated by the rotameter. Maintain his constant rate (±10 percent) during ne entire sampling run. Take readings DGM, temperatures at DGM and at mpinger outlet, and rate meter) at least very 5 minutes. Add more ice during he run to keep the temperature of the ases leaving the last impinger at 20 °C · 68 °F) or less. At the conclusion of each un, turn off the pump, remove the Teflon® tubing from the stack, and ecord the final readings. Conduct a leak heck as in section 8.1.2. (This leak heck is mandatory.) If a leak is found, oid the test run or use procedures cceptable to the Administrator to djust the sample volume for the eakage.

8.2 Sample Recovery. The following tems are required for sample recovery:

8.2.1 Impinger. Disconnect the mpinger. Pour the contents of the ıidget impinger into a graduated ylinder. Rinse the midget impinger and he connecting tubes with water, and dd the rinses to the graduated cylinder. Record the sample volume. Transfer the sample to a glass vial and cap with a Teflon® septum. Discard any excess sample. Place the samples in an ice chest for shipment to the laboratory.

8.2.2. Adsorbent Tubes. Seal the silica gel adsorbent tubes and place them in an ice chest for shipment to the laboratory.

9.0 Quality Control

9.1 Miscellaneous Quality Control Measures. The following quality control measures are required:

Section	Quality control measure	Effect
8.1.2, 8.1.3, 10.1.	Sampling equipment leak check and calibration.	Ensures accurate measurement of sample volume.
10.2	GC calibration ..	Ensures precision of GC analysis.

9.2 Applicability. When the method is used to analyze samples to demonstrate compliance with a source emission regulation, an audit sample must be analyzed, subject to availability.

9.3 Audit Procedure. Analyze an audit sample with each set of compliance samples. Concurrently analyze the audit sample and a set of compliance samples in the same manner to evaluate the technique of the analyst and the standards preparation. The same analyst, analytical reagents, and analytical system shall be used both for the compliance samples and the EPA audit sample.

9.4 Audit Sample Availability. Audit samples will be supplied only to enforcement agencies for compliance tests. Audit samples may be obtained by writing: Source Test Audit Coordinator (MD–77B), Air Measurement Research Division, National Exposure Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; or by calling the Source Test Audit Coordinator (STAC) at (919) 541–7834. The audit sample request must be made at least 30 days prior to the scheduled compliance sample analysis.

9.5 Audit Results. Calculate the audit sample concentration according to the calculation procedure provided in the audit instructions included with the audit sample. Fill in the audit sample concentration and the analyst's name on the audit response form included with the audit instructions. Send one copy to the EPA Regional Office or the appropriate enforcement agency and a second copy to the STAC. The EPA Regional office or the appropriate enforcement agency will report the results of the audit to the laboratory being audited. Include this response with the results of the compliance samples in relevant reports to the EPA Regional Office or the appropriate enforcement agency.

10.0 Calibration and Standardization

10.1 Metering System. The following items are required for the metering system:

10.1.1 Initial Calibration.

10.1.1.1 Before its initial use in the field, first leak-check the metering system (drying tube, needle valve, pump, rotameter, and DGM) as follows: Place a vacuum gauge at the inlet to the drying tube, and pull a vacuum of 250 mm (10 inch) Hg; plug or pinch off the outlet of the flow meter, and then turn off the pump. The vacuum shall remain stable for at least 30 seconds. Carefully release the vacuum gauge before releasing the flow meter end.

10.1.1.2 Next, remove the drying tube, and calibrate the metering system (at the sampling flow rate specified by the method) as follows: Connect an appropriately sized wet test meter (e.g., 1 liter per revolution (0.035 cubic feet per revolution)) to the inlet of the drying tube. Make three independent calibrations runs, using at least five revolutions of the DGM per run. Calculate the calibration factor, Y (wet test meter calibration volume divided by the DGM volume, both volumes adjusted to the same reference temperature and pressure), for each run, and average the results. If any Y-value deviates by more than 2 percent from the average, the metering system is unacceptable for use. Otherwise, use the average as the calibration factor for subsequent test runs.

10.1.2 Posttest Calibration Check. After each field test series, conduct a calibration check as in section 10.1.1 above, except for the following variations: (a) The leak check is not to be conducted, (b) three, or more revolutions of the DGM may be used, and (c) only two independent runs need be made. If the calibration factor does not deviate by more than 5 percent from the initial calibration factor (determined in section 10.1.1), then the DGM volumes obtained during the test series are acceptable. If the calibration factor deviates by more than 5 percent, recalibrate the metering system as in section 10.1.1, and for the calculations, use the calibration factor (initial or recalibration) that yields the lower gas volume for each test run.

10.1.3 Temperature Sensors. Calibrate against mercury-in-glass thermometers.

10.1.4 Rotameter. The rotameter need not be calibrated, but should be cleaned and maintained according to the manufacturer's instruction.

10.1.5 Barometer. Calibrate against a mercury barometer.

10.2 Gas Chromatograph. The following procedures are required for the gas chromatograph:

10.2.1 Initial Calibration. Inject 1 µl of each of the standards prepared in sections 7.2.3.3 and 7.2.3.4 into the GC and record the response. Repeat the injections for each standard until two successive injections agree within 5 percent. Using the mean response for

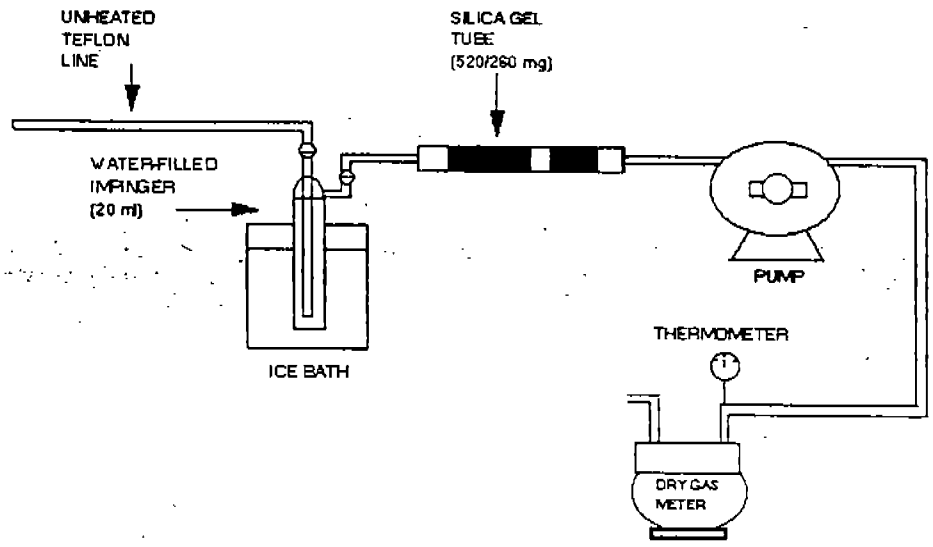


Figure 308.1. Sampling train schematic

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6.3.2 Pump. Capable of pumping) ml/min. For flushing sample loop.
6.3.3 Flow Meter. To monitor curately sample loop flow rate of 100 l/min.
6.3.4 Regulators. Two-stage gulators used on gas cylinders for GC d for cylinder standards.
6.3.5 Recorder. To record, integrate, d store chromatograms.
6.3.6 Syringes. 1.0- and 10- icroliter (l) size, calibrated, for jecting samples.
6.3.7 Tubing Fittings. Stainless steel, plumb GC and gas cylinders.
6.3.8 Vials. Two 5.0-ml glass vials ith screw caps fitted with Teflon®- ned septa for each sample.
6.3.9 Pipettes. Volumetric type, sorted sizes for preparing calibration andards.
6.3.10 Volumetric Flasks. Assorted zes for preparing calibration andards.
6.3.11 Vials. Glass 40-ml with eflon®-lined septa, to store calibration tandards (one per standard).

0 Reagents and Standards

Note: Unless otherwise indicated, all eagents must conform to the specifications stablished by the Committee on Analytical eagents of the American Chemical Society. Where such specifications are not available, se the best available grade.

7.1 Sampling. The following are equired for sampling:
7.1.1 Water. Deionized distilled to conform to the American Society for Testing and Materials (ASTM) Specification D 1193–77, Type 3. At the ption of the analyst, the potassium permanganate ($KMnO_4$) test for oxidizable organic matter may be omitted when high concentrations of organic matter are not expected to be present.
7.1.2 Silica Gel. Deactivated chromatographic grade 20/40 mesh silica gel packed in glass adsorbent tubes. The silica gel is packed in two sections. The front section contains 520 milligrams (mg) of silica gel, and the back section contains 260 mg.
7.2 Analysis. The following are required for analysis:
7.2.1 Water. Same as specified in section 7.1.1.
7.2.2 n-Propanol, 3 Percent. Mix 3 ml of n-propanol with 97 ml of water.
7.2.3 Methanol Stock Standard. Prepare a methanol stock standard by weighing 1 gram of methanol into a 100-ml volumetric flask. Dilute to 100 ml with water.
7.2.3.1 Methanol Working Standard. Prepare a methanol working standard by pipetting 1 ml of the methanol stock standard into a 100-ml volumetric flask. Dilute the solution to 100 ml with water.
7.2.3.2 Methanol Standards For Impinger Samples. Prepare a series of methanol standards by pipetting 1, 2, 5, 10, and 25 ml of methanol working standard solution respectively into five 50-ml volumetric flasks. Dilute the solutions to 50 ml with water. These standards will have 2, 4, 10, 20, and 50 µg/ml of methanol, respectively. After preparation, transfer the solutions to 40-ml glass vials capped with Teflon® septa and store the vials under refrigeration. Discard any excess solution.
7.2.3.3 Methanol Standards for Adsorbent Tube Samples. Prepare a series of methanol standards by first pipetting 10 ml of the methanol working standard into a 100-ml volumetric flask and diluting the contents to exactly 100 ml with 3 percent n-propanol solution. This standard will contain 10 µg/ml of methanol. Pipette 5, 15, and 25 ml of this standard, respectively, into four 50-ml volumetric flasks. Dilute each solution to 50 ml with 3 percent n-propanol solution. These standards will have 1, 3, and 5 µg/ml of methanol, respectively. Transfer all four standards into 40-ml glass vials capped with Teflon®-lined septa and store under refrigeration. Discard any excess solution.
7.2.4 GC Column. Capillary column, 30 meters (100 feet) long with an inside diameter (ID) of 0.53 mm (0.02 inch), coated with DB 624 to a film thickness of 3.0 micrometers, (µm) or an equivalent column. Alternatively, a 30-meter capillary column coated with polyethylene glycol to a film thickness of 1 µm such as AT–WAX or its equivalent.
7.2.5 Helium. Ultra high purity.
7.2.6 Hydrogen. Zero grade.
7.2.7 Oxygen. Zero grade.

8.0 Procedure

8.1 Sampling. The following items are required for sampling:
8.1.1 Preparation of Collection Train. Measure 20 ml of water into the midget impinger. The adsorbent tube must contain 520 mg of silica gel in the front section and 260 mg of silica gel in the backup section. Assemble the train as shown in Figure 308–1. An optional, second impinger that is left empty may be placed in front of the water-containing impinger to act as a condensate trap. Place crushed ice and water around the impinger.

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TABLE 1 TO SUBPART S—GENERAL PROVISIONS APPLICABILITY TO SUBPART S [a]—Continued

Reference	Applies to Subpart S	Comment
63.9(g)(1)	Yes.	
63.9(g)(2)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(3)	No	Subpart S does not specify relative accuracy tests, therefore no notification is required for an alternative.
63.9(h)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)	Yes.	
63.10(c)	Yes.	
63.10(d)(1)	Yes.	
63.10(d)(2)	Yes.	
63.10(d)(3)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(d)(4)	Yes.	
63.10(d)(5)	Yes.	
63.10(e)(1)	Yes.	
63.10(e)(2)(i)	Yes.	
63.10(e)(2)(ii)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(e)(3)	Yes.	
63.10(e)(4)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(f)	Yes.	
63.11–63.15	Yes.	

[a] Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

3. Appendix A of part 63 is amended by adding Method 308 in numerical order to read as follows:

Appendix A to Part 63—Test Methods

* * * * *

Method 308—Procedure for Determination of Methanol Emission From Stationary Sources

1.0 Scope and Application

1.1 Analyte. Methanol. Chemical Abstract Service (CAS) No. 67–56–1.

1.2 Applicability. This method applies to the measurement of methanol emissions from specified stationary sources.

2.0 Summary of Method

A gas sample is extracted from the sampling point in the stack. The methanol is collected in deionized distilled water and adsorbed on silica gel. The sample is returned to the laboratory where the methanol in the water fraction is separated from other organic compounds with a gas chromatograph (GC) and is then measured by a flame ionization detector (FID). The fraction adsorbed on silica gel is extracted with an aqueous solution of n-propanol and is then separated and measured by GC/FID.

3.0 Definitions [Reserved]

4.0 Interferences [Reserved]

5.0 Safety

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before performing this test method.

5.2 Methanol Characteristics. Methanol is flammable and a dangerous fire and explosion risk. It is moderately toxic by ingestion and inhalation.

6.0 Equipment and Supplies

6.1 Sample Collection. The following items are required for sample collection:

6.1.1 Sampling Train. The sampling train is shown in Figure 308–1 and component parts are discussed below.

6.1.1.1 Probe. Teflon®, approximately 6-millimeter (mm) (0.24 inch) outside diameter.

6.1.1.2 Impinger. A 30-milliliter (ml) midget impinger. The impinger must be connected with leak-free glass connectors. Silicone grease may not be used to lubricate the connectors.

6.1.1.3 Adsorbent Tube. Glass tubes packed with the required amount of the specified adsorbent.

6.1.1.4 Valve. Needle valve, to regulate sample gas flow rate.

6.1.1.5 Pump. Leak-free diaphragm pump, or equivalent, to pull gas through the sampling train. Install a small surge tank between the pump and rate meter to eliminate the pulsation effect of the diaphragm pump on the rotameter.

6.1.1.6 Rate Meter. Rotameter, or equivalent, capable of measuring flow rate to within 2 percent of the selected flow rate of up to 1000 milliliter per minute (ml/min). Alternatively, the tester may use a critical orifice to set the flow rate.

6.1.1.7 Volume Meter. Dry gas meter (DGM), sufficiently accurate to measure the sample volume to within 2 percent, calibrated at the selected flow rate and conditions actually encountered during sampling, and equipped with a temperature sensor (dial thermometer, or equivalent) capable of measuring temperature accurately to within 3 °C (5.4 °F).

6.1.1.8 Barometer. Mercury (Hg), aneroid, or other barometer capable of measuring atmospheric pressure to within 2.5 mm (0.1 inch) Hg. See the NOTE in Method 5 (40 CFR part 60, appendix A), section 6.1.2.

6.1.1.9 Vacuum Gauge and Rotameter. At least 760-mm (30-inch) Hg gauge and 0- to 40-ml/min rotameter, to be used for leak-check of the sampling train.

6.2 Sample Recovery. The following items are required for sample recovery:

6.2.1 Wash Bottles. Polyethylene or glass, 500-ml, two.

6.2.2 Sample Vials. Glass, 40-ml, with Teflon®-lined septa, to store impinger samples (one per sample).

6.2.3 Graduated Cylinder. 100-ml size.

6.3 Analysis. The following are required for analysis:

6.3.1 Gas Chromatograph. GC with an FID, programmable temperature control, and heated liquid injection port.

3.459 [Reserved]

TABLE 1 TO SUBPART S—GENERAL PROVISIONS APPLICABILITY TO SUBPART S [a]

Reference	Applies to Subpart S	Comment
(a)(1)–(3)	Yes.	
1(a)(4)	Yes	Subpart S (this table) specifies applicability of each paragraph in subpart A to subpart S.
.1(a)(5)	No	Section reserved.
.1(a)(6)–(8)	Yes.	
.1(a)(9)	No	Section reserved.
1(a)(10)	No	Subpart S and other cross-referenced subparts specify calendar or operating day.
.1(a)(11)–(14)	Yes.	
.1(b)(1)	No	Subpart S specifies its own applicability.
.1(b)(2)–(3)	Yes.	
.1(c)(1)–(2)	Yes.	
.1(c)(3)	No	Section reserved.
.1(c)(4)–(5)	Yes.	
(d)	No	Section reserved.
.1(e)	Yes.	
.2	Yes.	
.3	Yes.	
.4(a)(1)	Yes.	
.4(a)(3).		
.4(a)(4)	No	Section reserved.
.4(a)(5)	Yes.	
.4(b)	Yes.	
.4(c)	Yes.	
5(a)	Yes.	
5(b)(1)	Yes.	
.5(b)(2)	No	Section reserved.
.5(b)(3)	Yes.	
.5(b)(4)–(6)	Yes.	
.5(c)	No	Section reserved.
.5(d)	Yes.	
.5(e)	Yes.	
.5(f)	Yes.	
3.6(a)	Yes.	
3.6(b)	No	Subpart S specifies compliance dates for sources subject to subpart S.
3.6(c)	No	Subpart S specifies compliance dates for sources subject to subpart S.
3.6(d)	No	Section reserved.
3.6(e)	Yes.	
3.6(f)	Yes.	
3.6(g)	Yes.	
3.6(h)	No	Pertains to continuous opacity monitors that are not part of this standard.
.6(i)	Yes.	
3.6(j)	Yes.	
.7	Yes.	
.8(a)(1)	Yes.	
.8(a)(2)	Yes.	
.8(a)(3)	No	Section reserved.
.8(a)(4)	Yes.	
.8(b)(1)	Yes.	
.8(b)(2)	No	Subpart S specifies locations to conduct monitoring.
3.8(b)(3)	Yes.	
.8(c)(1)	Yes.	
.8(c)(2)	Yes.	
.8(c)(3)	Yes.	
.8(c)(4)	No	Subpart S allows site specific determination of monitoring frequency in § 63.453(n)(4).
.8(c)(5)	No	Pertains to continuous opacity monitors that are not part of this standard.
.8(c)(6)	Yes.	
.8(c)(7)	Yes.	
.8(c)(8)	Yes.	
.8(d)	Yes.	
.8(e)	Yes.	
.8(f)(1)–(5)	Yes.	
.8(f)(6)	No	Subpart S does not specify relative accuracy test for CEM's.
.8(g)	Yes.	
.9(a)	Yes.	
.9(b)	Yes	Initial notifications must be submitted within one year after the source becomes subject to the relevant standard.
.9(c)	Yes.	
.9(d)	No	Special compliance requirements are only applicable to kraft mills.
.9(e)	Yes.	
.9(f)	No	Pertains to continuous opacity monitors that are not part of this standard.

K=Density of the liquid stream, kilograms per cubic meter.

V_{bi}=Volumetric flow rate of liquid stream entering the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

V_{ai}=Volumetric flow rate of liquid stream exiting the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

C_{bi}=Concentration of total HAP or methanol in the stream entering the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

C_{ai}=Concentration of total HAP or methanol in the stream exiting the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

n=Number of runs.

(2) The mass of total HAP or methanol per megagram ODP shall be calculated using the following equation:

$$F = \frac{E_a}{P}$$

Where:

F=Mass loading of total HAP or methanol in the sample, in kilograms per megagram of ODP.

E_a=Mass flow rate of total HAP or methanol in the wastewater stream in kilograms per hour as determined using the procedures in paragraph (j)(1) of this section.

P=The production rate of pulp during the sampling period in megagrams of ODP per hour.

(3) The percent reduction of total HAP across the applicable treatment process shall be calculated using the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R=Control efficiency of the treatment process, percent.

E_b=Mass flow rate of total HAP in the stream entering the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

E_a=Mass flow rate of total HAP in the stream exiting the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

(4) Compounds that meet the requirements specified in paragraphs (j)(4)(i) or (4)(ii) of this section are not required to be included in the mass flow rate, mass per megagram of ODP, or the mass percent reduction determinations.

(i) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or

(ii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight.

(k) *Oxygen concentration correction procedures.* To demonstrate compliance with the total HAP concentration limit of 20 ppmv in § 63.443(d)(2), the concentration measured using the methods specified in paragraph (b)(5) of this section shall be corrected to 10 percent oxygen using the following procedures:

(1) The emission rate correction factor and excess air integrated sampling and analysis procedures of Methods 3A or 3B of part 60, appendix A shall be used to determine the oxygen concentration. The samples shall be taken at the same time that the HAP samples are taken.

(2) The concentration corrected to 10 percent oxygen shall be computed using the following equation:

$$C_c = C_m \left(\frac{10.9}{20.9 - \%O_{2d}} \right)$$

Where:

C_c=Concentration of total HAP corrected to 10 percent oxygen, dry basis, parts per million by volume.

C_m=Concentration of total HAP dry basis, parts per million by volume, as specified in paragraph (b) of this section.

$\%O_{2d}$=Concentration of oxygen, dry basis, percent by volume.

(l) *Biological treatment system percent reduction calculation.* To determine compliance with an open biological treatment system option specified in § 63.446(e)(2) and the monitoring requirements specified in § 63.453(j)(2), the percent reduction due to destruction in the biological treatment system shall be calculated using the following equation:

$R = f_{bio} \times 100$

Where:

R=Destruction of total HAP or methanol in the biological treatment process, percent.

f_{bio}=The fraction of total HAP or methanol removed in the biological treatment system. The site-specific biorate constants shall be determined using the procedures specified and as limited in appendix C of part 63.

(m) *Condensate segregation procedures.* The following procedures shall be used to demonstrate compliance with the condensate segregation requirements specified in § 63.446(c).

(1) To demonstrate compliance with the percent mass requirements specified in § 63.446(c)(1), the procedures specified in paragraphs (m)(1)(i) through (m)(1)(iii) of this section shall be performed.

(i) Determine the total HAP mass of all condensates from each equipment system listed in § 63.446 (b)(1) through (b)(3) using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Multiply the total HAP mass determine in paragraph (m)(1)(i) of this section by 0.65 to determine the target HAP mass for the high-HAP fraction condensate stream or streams.

(iii) Compliance with the segregation requirements specified in § 63.446(c)(1) is demonstrated if the condensate stream or streams from each equipment system listed in § 63.446 (b)(1) through (b)(3) being treated as specified in § 63.446(e) contain at least as much total HAP mass as the target total HAP mass determined in paragraph (m)(1)(ii) of this section.

(2) To demonstrate compliance with the percent mass requirements specified in § 63.446(c)(2), the procedures specified in paragraphs (m)(2)(i) through (m)(2)(ii) of this section shall be performed.

(i) Determine the total HAP mass contained in the high-HAP fraction condensates from each equipment system listed in § 63.446(b)(1) through (b)(3) and the total condensates streams from the equipment systems listed in § 63.446(b)(4) and (b)(5), using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Compliance with the segregation requirements specified in § 63.446(c)(2) is demonstrated if the total HAP mass determined in paragraph (m)(2)(i) of this section is equal to or greater than the appropriate mass requirements specified in § 63.446(c)(2).

(n) *Biological treatment system monitoring sampling storage.* The inlet and outlet grab samples required to be collected in § 63.453(j)(2) shall be stored at 4° C (40° F) to minimize the biodegradation of the organic compounds in the samples.

§ 63.458 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the CAA, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

(1) Section 63.6(g)—Use of an alternative nonopacity emission standard;

(2) Section 63.453(m)—Use of an alternative monitoring parameter;

(3) Section 63.457(b)(5)(iii)—Use of an alternative test method for total HAP or methanol in vents; and

(4) Section 63.457(c)(3)(ii)—Use of an alternative test method for total HAP or methanol in wastewater.

=Measured concentration of pollutant i in the liquid stream sample determined using Method 305, parts per million by weight.
$_i$=Pollutant-specific constant that adjusts concentration measured by Method 305 to actual liquid concentration; the fm for methanol is 0.85. Additional pollutant fm values can be found in table 34, subpart G of this part.
=Number of individual pollutants, i, summed to calculate total HAP.

(ii) Any other method that measures otal HAP concentration that has been emonstrated to the Administrator's itisfaction.

(4) To determine soluble BOD_5 in the ffluent stream from a biological eatment unit used to comply with § 63.446(e)(2) and 63.453(j), the owner operator shall use Method 405.1, of art 136, with the following odifications:

(i) Filter the sample through the filter aper, into Erlenmeyer flask by pplying a vacuum to the flask sidearm. Minimize the time for which vacuum is pplied to prevent stripping of volatile rganics from the sample. Replace filter aper as often as needed in order to naintain filter times of less than pproximately 30 seconds per filter aper. No rinsing of sample container or ilter bowl into the Erlenmeyer flask is llowed.

(ii) Perform Method 405.1 on the iltrate obtained in paragraph (c)(4) of his section. Dilution water shall be seeded with 1 milliliter of final effluent per liter of dilution water. Dilution atios may require adjustment to reflect he lower oxygen demand of the filtered ample in comparison to the total BOD_5. Three BOD bottles and different dilutions shall be used for each sample.

(d) *Detectable leak procedures.* To measure detectable leaks for closed-vent systems as specified in § 63.450 or for pulping process wastewater collection systems as specified in § 63.446(d)(2)(i), he owner or operator shall comply with he following:

(1) Method 21, of part 60, appendix A; and

(2) The instrument specified in Method 21 shall be calibrated before use according to the procedures specified in Method 21 on each day that leak checks are performed. The following calibration gases shall be used:

(i) Zero air (less than 10 parts per million by volume of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 parts per million by volume methane or n-hexane.

(e) *Negative pressure procedures.* To demonstrate negative pressure at process equipment enclosure openings as specified in § 63.450(b), the owner or operator shall use one of the following procedures:

(1) An anemometer to demonstrate flow into the enclosure opening;

(2) Measure the static pressure across the opening;

(3) Smoke tubes to demonstrate flow into the enclosure opening; or

(4) Any other industrial ventilation test method demonstrated to the Administrator's satisfaction.

(f) *HAP concentration measurements.* For purposes of complying with the requirements in §§ 63.443, 63.444, and 63.447, the owner or operator shall measure the total HAP concentration as one of the following:

(1) As the sum of all individual HAP's; or

(2) As methanol.

(g) *Condensate HAP concentration measurement.* For purposes of complying with the kraft pulping condensate requirements in § 63.446, the owner or operator shall measure the total HAP concentration as methanol except for the purposes of complying with the initial performance test specified in § 63.457(a) for § 63.446(e)(2) and as specified in § 63.453(j)(2)(ii).

(h) *Bleaching HAP concentration measurement.* For purposes of complying with the bleaching system requirements in § 63.445, the owner or operator shall measure the total HAP concentration as the sum of all individual chlorinated HAP's or as chlorine.

(i) *Vent gas stream calculations.* To demonstrate compliance with the mass emission rate, mass emission rate per megagram of ODP, and percent reduction requirements for vent gas streams specified in §§ 63.443, 63.444, 63.445, and 63.447, the owner or operator shall use the following:

(1) The total HAP mass emission rate shall be calculated using the following equation:

$$E = K_2 \left[\sum_{j=1}^{n} C_j M_j \right] Q_s$$

Where:
E=Mass emission rate of total HAP from the sampled vent, kilograms per hour.
K_2=Constant, 2.494×10^{-6} (parts per million by volume)$^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.
C_j=Concentration on a dry basis of pollutant j in parts per million by volume as measured by the test methods specified in paragraph (b) of this section.
M_j=Molecular weight of pollutant j, gram/gram-mole.
Q_s=Vent gas stream flow rate (dry standard cubic meter per minute) at a temperature of 20 °C as indicated in paragraph (b) of this section.
n=Number of individual pollutants, i, summed to calculate total HAP.

(2) The total HAP mass emission rate per megagram of ODP shall be calculated using the following equation:

$$F = \frac{E}{P}$$

Where:
F=Mass emission rate of total HAP from the sampled vent, in kilograms per megagram of ODP.
E=Mass emission rate of total HAP from the sampled vent, in kilograms per hour determined as specified in paragraph (i)(1) of this section.
P=The production rate of pulp during the sampling period, in megagrams of ODP per hour.

(3) The total HAP percent reduction shall be calculated using the following equation:

$$R = \frac{E_i - E_o}{E_i} (100)$$

Where:
R=Efficiency of control device, percent.
E_i=Inlet mass emission rate of total HAP from the sampled vent, in kilograms of pollutant per hour, determined as specified in paragraph (i)(1) of this section.
E_o=Outlet mass emission rate of total HAP from the sampled vent, in kilograms of pollutant per hour, determined as specified in paragraph (i)(1) of this section.

(j) *Liquid stream calculations.* To demonstrate compliance with the mass flow rate, mass per megagram of ODP, and percent reduction requirements for liquid streams specified in § 63.446, the owner or operator shall use the following:

(1) The mass flow rates of total HAP or methanol entering and exiting the treatment process shall be calculated using the following equations:

$$E_b = \frac{K}{n \times 10^6} \left(\sum_{i=1}^{n} V_{bi} C_{bi} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left(\sum_{i=1}^{n} V_{ai} C_{ai} \right)$$

Where:
E_b=Mass flow rate of total HAP or methanol in the liquid stream entering the treatment process, kilograms per hour.
E_a=Mass flow rate of total HAP or methanol in the liquid exiting the treatment process, kilograms per hour.

impingers. A leakage rate not in excess of 2 percent of the sampling rate is acceptable. Carefully remove the plug from the end of the probe. Check the flow rate at the probe inlet with a bubble tube flow meter. The flow should be comparable or slightly less than the flow rate of the critical orifice with the impingers off-line. Record the flow and turn off the pump.

(3) *Sample Collection.* Insert the sampling line into the stack and secure it with the tip slightly lower than the port height. Start the pump, recording the time. End the sampling after 60 minutes, or after yellow color is observed in the second in-line impinger. Record time and remove the tubing from the vent. Recheck flow rate at sampling line inlet and turn off pump. If the flow rate has changed significantly, redo sampling with fresh capture solution. A slight variation (less than 5 percent) in flow may be averaged. With the inlet end of the line elevated above the impingers, add about 5 ml water into the inlet tip to rinse the line into the first impinger.

(4) *Sample Analysis.* Fill the burette with 0.01 N sodium thiosulfate solution to the zero mark. Combine the contents of the impingers in the beaker or flask. Stir the solution and titrate with thiosulfate until the solution is colorless. Record the volume of the first endpoint (TN, ml). Add 5 ml of the 10 percent sulfuric acid solution, and continue the titration until the contents of the flask are again colorless. Record the total volume of titrant required to go through the first and to the second endpoint (TA, ml). If the volume of neutral titer is less than 0.5 ml, repeat the testing for a longer period of time. It is important that sufficient lighting be present to clearly see the endpoints, which are determined when the solution turns from pale yellow to colorless. A lighted stirring plate and a white background are useful for this purpose.

(5) *Interferences.* Known interfering agents of this method are sulfur dioxide and hydrogen peroxide. Sulfur dioxide, which is used to reduce oxidant residuals in some bleaching systems, reduces formed iodine to iodide in the capture solution. It is therefore a negative interference for chlorine, and in some cases could result in erroneous negative chlorine concentrations. Any agent capable of reducing iodine to iodide could interfere in this manner. A chromium trioxide impregnated filter will capture sulfur dioxide and pass chlorine and chlorine dioxide. Hydrogen peroxide, which is commonly used as a bleaching agent in modern bleaching systems, reacts with iodide to form iodine and thus can cause a positive interference in the chlorine measurement. Due to the chemistry involved, the precision of the chlorine analysis will decrease as the ratio of chlorine dioxide to chlorine increases. Slightly negative calculated concentrations of chlorine may occur when sampling a vent gas with high concentrations of chlorine dioxide and very low concentrations of chlorine.

(G) The following calculation shall be performed to determine the corrected sampling flow rate:

$$S_C = S_U\left(\frac{BP - PW}{760}\right)\left(\frac{293}{273 + t}\right)$$

Where:

S_C=Corrected (dry standard) sampling flow rate, liters per minute;
S_U=Uncorrected sampling flow rate, L/min;
BP=Barometric pressure at time of sampling;
PW=Saturated partial pressure of water vapor, mm Hg at temperature; and
t=Ambient temperature, °C.

(H) The following calculation shall be performed to determine the moles of chlorine in the sample:

$$Cl_2\,Moles = 1/8000\left(5\,T_N - T_A\right) \times N_{Thio}$$

Where:

T_N=Volume neutral titer, ml;
T_A=Volume acid titer (total), ml; and
N_{Thio}=Normality of sodium thiosulfate titrant.

(I) The following calculation shall be performed to determine the concentration of chlorine in the sample:

$$Cl_2\,ppmv = \frac{3005\left(5\,T_N - T_A\right) \times N_{Thio}}{S_C \times t_S}$$

Where:

S_C=Corrected (dry standard) sampling flow rate, liters per minute;
t_S=Time sampled, minutes;
T_N=Volume neutral titer, ml;
T_A=Volume acid titer (total), ml; and
N_{Thio}=Normality of sodium thiosulfate titrant.

(J) The following calculation shall be performed to determine the moles of chlorine dioxide in the sample:

$$ClO_2\ Moles = 1/4000\left(T_A - T_N\right) \times N_{Thio}$$

Where:

T_A=Volume acid titer (total), ml;
T_N=Volume neutral titer, ml; and
N_{Thio}=Normality of sodium thiosulfate titrant.

(K) The following calculation shall be performed to determine the concentration of chlorine dioxide in the sample:

$$ClO_2\ ppmv = \frac{6010\left(T_A - T_N\right) \times N_{Thio}}{S_C \times t_S}$$

Where:

S_C=Corrected (dry standard) sampling flow rate, liters per minute;
t_S=Time sampled, minutes;
T_A=Volume acid titer (total), ml;
T_N=Volume neutral titer, ml; and
N_{Thio}=Normality of sodium thiosulfate titrant.

(iii) Any other method that measures the total HAP or methanol concentration that has been demonstrated to the Administrator's satisfaction.

(6) The minimum sampling time for each of the three runs per method shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(c) *Liquid sampling locations and properties.* For purposes of selecting liquid sampling locations and for determining properties of liquid streams such as wastewaters, process waters, and condensates required in §§ 63.444, 63.446, and 63.447, the owner or operator shall comply with the following procedures:

(1) Samples shall be collected using the sampling procedures specified in Method 305 of part 60, appendix A;

(i) Where feasible, samples shall be taken from an enclosed pipe prior to the liquid stream being exposed to the atmosphere; and

(ii) When sampling from an enclosed pipe is not feasible, samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of HAP compounds prior to sampling.

(2) The volumetric flow rate of the entering and exiting liquid streams shall be determined using the inlet and outlet flow meters or other methods demonstrated to the Administrator's satisfaction. The volumetric flow rate measurements to determine actual mass removal shall be taken at the same time as the concentration measurements;

(3) To determine liquid stream total HAP or methanol concentrations, the owner or operator shall collect a minimum of three samples that are representative of normal conditions and average the resulting pollutant concentrations using one of the following:

(i) Method 305 in Appendix A of this part, adjusted using the following equation:

$$\bar{C} = \sum_{i=1}^{n} C_i / fm_i$$

Where:

$\bar{C}$=Pollutant concentration for the liquid stream, parts per million by weight.

electing vent sampling port locations nd determining vent gas stream roperties, required in §§ 63.443, 3.444, 63.445, and 63.447, each owner r operator shall comply with the pplicable procedures in paragraphs)(1) through (b)(6) of this section.

(1) Method 1 or 1A of part 60, ppendix A, as appropriate, shall be ised for selection of the sampling site s follows:

(i) To sample for vent gas oncentrations and volumetric flow ates, the sampling site shall be located rior to dilution of the vent gas stream nd prior to release to the atmosphere;

(ii) For determining compliance with ercent reduction requirements, ampling sites shall be located prior to he inlet of the control device and at the utlet of the control device; neasurements shall be performed simultaneously at the two sampling sites; and

(iii) For determining compliance with concentration limits or mass emission rate limits, the sampling site shall be ocated at the outlet of the control device.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter (4.0 inches) in diameter.

(3) The vent gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

(4) The moisture content of the vent gas shall be measured using Method 4 of part 60, appendix A.

(5) To determine vent gas concentrations, the owner or operator shall collect a minimum of three samples that are representative of normal conditions and average the resulting pollutant concentrations using the following procedures.

(i) Method 308 in Appendix A of this part shall be used to determine the methanol concentration.

(ii) Except for the modifications specified in paragraphs (b)(5)(ii)(A) through (b)(5)(ii)(K) of this section, Method 26A of part 60, appendix A shall be used to determine chlorine concentration in the vent stream.

(A) *Probe/Sampling Line.* A separate probe is not required. The sampling line shall be an appropriate length of 0.64 cm (0.25 in) OD Teflon® tubing. The sample inlet end of the sampling line shall be inserted into the stack in such a way as to not entrain liquid condensation from the vent gases. The other end shall be connected to the impingers. The length of the tubing may vary from one sampling site to another, but shall be as short as possible in each situation. If sampling is conducted in sunlight, opaque tubing shall be used. Alternatively, if transparent tubing is used, it shall be covered with opaque tape.

(B) *Impinger Train.* Three 30 milliliter (ml) capacity midget impingers shall be connected in series to the sampling line. The impingers shall have regular tapered stems. Silica gel shall be placed in the third impinger as a desiccant. All impinger train connectors shall be glass and/or Teflon®.

(C) *Critical Orifice.* The critical orifice shall have a flow rate of 200 to 250 ml/min and shall be followed by a vacuum pump capable of providing a vacuum of 640 millimeters of mercury (mm Hg). A 45 millimeter diameter in-line Teflon® 0.8 micrometer filter shall follow the impingers to project the critical orifice and vacuum pump.

(D) The following are necessary for the analysis apparatus:

(*1*) Wash bottle filled with deionized water;

(*2*) 25 or 50 ml graduated burette and stand;

(*3*) Magnetic stirring apparatus and stir bar;

(*4*) Calibrated pH Meter;

(*5*) 150–250 ml beaker or flask; and

(*6*) A 5 ml pipette.

(E) The procedures listed in paragraphs (b)(5)(ii)(E)(*1*) through (b)(5)(ii)(E)(*7*) of this section shall be used to prepare the reagents.

(*1*) To prepare the 1 molarity (M) potassium dihydrogen phosphate solution, dissolve 13.61 grams (g) of potassium dihydrogen phosphate in water and dilute to 100 ml.

(*2*) To prepare the 1 M sodium hydroxide solution (NaOH), dissolve 4.0 g of sodium hydroxide in water and dilute to 100 ml.

(*3*) To prepare the buffered 2 percent potassium iodide solution, dissolve 20 g of potassium iodide in 900 ml water. Add 50 ml of the 1 M potassium dihydrogen phosphate solution and 30 ml of the 1 M sodium hydroxide solution. While stirring solution, measure the pH of solution electrometrically and add the 1 M sodium hydroxide solution to bring pH to between 6.95 and 7.05.

(*4*) To prepare the 0.1 normality (N) sodium thiosulfate solution, dissolve 25 g of sodium thiosulfate, pentahydrate, in 800 ml of freshly boiled and cooled distilled water in a 1-liter volumetric flask. Dilute to volume. To prepare the 0.01 N sodium thiosulfate solution, add 10.0 ml standardized 0.1 N sodium thiosulfate solution to a 100 ml volumetric flask, and dilute to volume with water.

(*5*) To standardize the 0.1 N sodium thiosulfate solution, dissolve 3.249 g of anhydrous potassium bi-iodate, primary standard quality, or 3.567 g potassium iodate dried at 103 +/−2 degrees Centigrade for 1 hour, in distilled water and dilute to 1000 ml to yield a 0.1000 N solution. Store in a glass-stoppered bottle. To 80 ml distilled water, add, with constant stirring, 1 ml concentrated sulfuric acid, 10.00 ml 0.1000 N anhydrous potassium bi-iodate, and 1 g potassium iodide. Titrate immediately with 0.1 n sodium thiosulfate titrant until the yellow color of the liberated iodine is almost discharged. Add 1 ml starch indicator solution and continue titrating until the blue color disappears. The normality of the sodium thiosulfate solution is inversely proportional to the ml of sodium thiosulfate solution consumed:

$$\text{Normality of SodiumThiosulfate} = \frac{1}{\text{ml Sodium Thiosulfate Consumed}}$$

(*6*) To prepare the starch indicator solution, add a small amount of cold water to 5 g starch and grind in a mortar to obtain a thin paste. Pour paste into 1 L of boiling distilled water, stir, and let settle overnight. Use clear supernate for starch indicator solution.

(*7*) To prepare the 10 percent sulfuric acid solution, add 10 ml of concentrated sulfuric acid to 80 ml water in an 100 ml volumetric flask. Dilute to volume.

(F) The procedures specified in paragraphs (b)(5)(ii)(F)(*1*) through (b)(5)(ii)(F)(*5*) of this section shall be used to perform the sampling.

(*1*) *Preparation of Collection Train.* Measure 20 ml buffered potassium iodide solution into each of the first two impingers and connect probe, impingers, filter, critical orifice, and pump. The sampling line and the impingers shall be shielded from sunlight.

(*2*) *Leak and Flow Check Procedure.* Plug sampling line inlet tip and turn on pump. If a flow of bubbles is visible in either of the liquid impingers, tighten fittings and adjust connections and

above maximum operating parameter values established in paragraph (n) of this section.

(1) The following shall occur and be recorded as soon as practical:

(i) Determine compliance with § 63.446(e)(2) using the percent reduction test procedures specified in § 63.457(l) and the monitoring data specified in paragraph (j)(1) of this section that coincide with the time period of the parameter excursion;

(ii) Steps shall be taken to repair or adjust the operation of the process to end the parameter excursion period; and

(iii) Steps shall be taken to minimize total HAP emissions to the atmosphere during the parameter excursion period.

(2) A parameter excursion is not a violation of the applicable emission standard if the percent reduction test specified in paragraph (p)(1)(i) of this section demonstrates compliance with § 63.446(e)(2), and no maintenance or changes have been made to the process or control device after the beginning of a parameter excursion that would influence the results of the determination.

§ 63.454 Recordkeeping requirements.

(a) The owner or operator of each affected source subject to the requirements of this subpart shall comply with the recordkeeping requirements of § 63.10 of subpart A of this part, as shown in table 1, and the requirements specified in paragraphs (b) through (d) of this section for the monitoring parameters specified in § 63.453.

(b) For each applicable enclosure opening, closed-vent system, and closed collection system, the owner or operator shall prepare and maintain a site-specific inspection plan including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:

(1) Date of inspection;

(2) The equipment type and identification;

(3) Results of negative pressure tests for enclosures;

(4) Results of leak detection tests;

(5) The nature of the defect or leak and the method of detection (i.e., visual inspection or instrument detection);

(6) The date the defect or leak was detected and the date of each attempt to repair the defect or leak;

(7) Repair methods applied in each attempt to repair the defect or leak;

(8) The reason for the delay if the defect or leak is not repaired within 15 days after discovery;

(9) The expected date of successful repair of the defect or leak if the repair is not completed within 15 days;

(10) The date of successful repair of the defect or leak;

(11) The position and duration of opening of bypass line valves and the condition of any valve seals; and

(12) The duration of the use of bypass valves on computer controlled valves.

(c) The owner or operator of a bleaching system complying with § 63.440(d)(3)(ii)(B) shall record the daily average chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the bleaching system until the requirements specified in § 63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall record the CMS parameters specified in § 63.453 and meet the requirements specified in paragraph (a) of this section for any new affected process equipment or pulping process condensate stream that becomes subject to the standards in this subpart due to a process change or modification.

§ 63.455 Reporting requirements.

(a) Each owner or operator of a source subject to this subpart shall comply with the reporting requirements of subpart A of this part as specified in table 1 and all the following requirements in this section. The initial notification report specified under § 63.9(b)(2) of subpart A of this part shall be submitted by April 15, 1999.

(b) Each owner or operator of a kraft pulping system specified in § 63.440(d)(1) or a bleaching system specified in § 63.440(d)(3)(ii) shall submit, with the initial notification report specified under § 63.9(b)(2) of subpart A of this part and paragraph (a) of this section and update every two years thereafter, a non-binding control strategy report containing, at a minimum, the information specified in paragraphs (b)(1) through (b)(3) of this section in addition to the information required in § 63.9(b)(2) of subpart A of this part.

(1) A description of the emission controls or process modifications selected for compliance with the control requirements in this standard.

(2) A compliance schedule, including the dates by which each step toward compliance will be reached for each emission point or sets of emission points. At a minimum, the list of dates shall include:

(i) The date by which the major study(s) for determining the compliance strategy will be completed;

(ii) The date by which contracts for emission controls or process modifications will be awarded, or the date by which orders will be issued for the purchase of major components to accomplish emission controls or process changes;

(iii) The date by which on-site construction, installation of emission control equipment, or a process change is to be initiated;

(iv) The date by which on-site construction, installation of emissions control equipment, or a process change is to be completed;

(v) The date by which final compliance is to be achieved;

(vi) For compliance with paragraph § 63.440(d)(3)(ii), the tentative dates by which compliance with effluent limitation guidelines and standards intermediate pollutant load effluent reductions and as available, all the dates for the best available technology's milestones reported in the National Pollutant Discharge Elimination System authorized under section 402 of the Clean Water Act and for the best professional milestones in the Voluntary Advanced Technology Incentives Program under 40 CFR 430.24 (b)(2); and

(vii) The date by which the final compliance tests will be performed.

(3) Until compliance is achieved, revisions or updates shall be made to the control strategy report required by paragraph (b) of this section indicating the progress made towards completing the installation of the emission controls or process modifications during the 2-year period.

(c) The owner or operator of each bleaching system complying with § 63.440(d)(3)(ii)(B) shall certify in the report specified under § 63.10(e)(3) of subpart A of this part that the daily application rates of chlorine and hypochlorite for that bleaching system have not increased as specified in § 63.440(d)(3)(ii)(B) until the requirements of § 63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall meet the requirements specified in paragraph (a) of this section upon startup of any new affected process equipment or pulping process condensate stream that becomes subject to the standards of this subpart due to a process change or modification.

§ 63.456 [Reserved]

§ 63.457 Test methods and procedures.

(a) *Initial performance test.* An initial performance test is required for all emission sources subject to the limitations in §§ 63.443, 63.444, 63.445, 63.446, and 63.447, except those controlled by a combustion device that is designed and operated as specified in § 63.443(d)(3) or (d)(4).

(b) *Vent sampling port locations and gas stream properties.* For purposes of

(1) On a daily basis, monitor the llowing parameters for each biological eatment unit:
(i) Composite daily sample of outlet oluble BOD_5 concentration to monitor r maximum daily and maximum onthly average;
(ii) Mixed liquor volatile suspended olids;
(iii) Horsepower of aerator unit(s);
(iv) Inlet liquid flow; and
(v) Liquid temperature.
(2) Obtain daily inlet and outlet liquid rab samples from each biological eatment unit to have HAP data vailable to perform quarterly percent eduction tests specified in paragraph)(2)(ii) of this section and the ompliance percent reduction tests pecified in paragraph (p)(1)(i) of this ection. Perform the following rocedures with the liquid samples:
(i) Store the samples for 5 days as pecified in § 63.457(n). The 5 day torage requirement is required since he soluble BOD_5 test requires 5 days to btain results. If the results of the oluble BOD_5 test are outside of the ange established during the initial erformance test, then the archive ample shall be used to perform the ercent reduction test specified in 63.457(1).
(ii) Perform the percent reduction test rocedures specified in § 63.457(l) within 45 days after the beginning of ach quarter as follows.
(A) The percent reduction test performed in the first quarter (annually) shall be performed for total HAP and the ercent reduction obtained from the test shall be at least as great as the total HAP eduction specified in § 63.446(e)(2).
(B) The remaining quarterly percent eduction tests shall be performed for methanol and the percent reduction obtained from the test shall be at least as great as the methanol reduction determined in the previous first-quarter est specified in paragraph (j)(2)(ii)(A) of his section.
(C) The parameter values used to calculate the percent reductions equired in paragraphs (j)(2)(ii)(A) and j)(2)(ii)(B) of this section shall be parameter values measured and samples aken in paragraph (j)(1) of this section.
(k) Each enclosure and closed-vent system used to comply with § 63.450(a) shall comply with the requirements specified in paragraphs (k)(1) through k)(6) of this section.
(1) For each enclosure opening, a visual inspection of the closure mechanism specified in § 63.450(b) shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.
(2) Each closed-vent system required by § 63.450(a) shall be visually inspected every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects.
(3) For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in § 63.450(c) measured initially and annually by the procedures in § 63.457(d).
(4) Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in § 63.457(e).
(5) The valve or closure mechanism specified in § 63.450(d)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line.
(6) If an inspection required by paragraphs (k)(1) through (k)(5) of this section identifies visible defects in ductwork, piping, enclosures or connections to covers required by § 63.450, or if an instrument reading of 500 parts per million by volume or greater above background is measured, or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as practicable.
(i) A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than 5 calendar days after the problem is identified.
(ii) The repair or corrective action shall be completed no later than 15 calendar days after the problem is identified.
(l) Each pulping process condensate closed collection system used to comply with § 63.446(d) shall be visually inspected every 30 days and shall comply with the inspection and monitoring requirements specified in § 63.964 of subpart RR of this part, except for the closed-vent system and control device inspection and monitoring requirements specified in § 63.964(a)(2) of subpart RR of this part, the closed-vent system and the control device shall meet the requirements specified in paragraphs (a) and (k) of this section.
(m) Each owner or operator using a control device, technique or an alternative parameter other than those specified in paragraphs (b) through (l) of this section shall install a CMS and establish appropriate operating parameters to be monitored that demonstrate, to the Administrator's satisfaction, continuous compliance with the applicable control requirements.
(n) To establish or reestablish, the value for each operating parameter required to be monitored under paragraphs (b) through (j), (l), and (m) of this section or to establish appropriate parameters for paragraphs (f), (i), and (m) of this section, each owner or operator shall use the following procedures:
(1) During the initial performance test required in § 63.457(a) or any subsequent performance test, continuously record the operating parameter;
(2) Determinations shall be based on the control performance and parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations;
(3) The owner or operator shall provide for the Administrator's approval the rationale for selecting the monitoring parameters necessary to comply with paragraphs (f), (i), and (m) of this section; and
(4) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency, and averaging time. Include all data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the applicable emission standard.
(o) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum or maximum (as appropriate) operating parameter value or procedure required to be monitored under paragraphs (a) through (n) of this section and established under this subpart. Except as provided in paragraph (p) of this section, § 63.443(e), or § 63.446(g), operation of the control device below minimum operating parameter values or above maximum operating parameter values established under this subpart or failure to perform procedures required by this subpart shall constitute a violation of the applicable emission standard of this subpart and be reported as a period of excess emissions.
(p) Each owner or operator of a biological treatment system complying with paragraph (j) of this section shall perform all the following requirements when the monitoring parameters specified in paragraphs (j)(1)(i) through (j)(1)(iii) of this section are below minimum operating parameter values or

systems in the clean condensate alternative affected source:

(1) The HAP emission reduction occurring by complying with the requirements of § 63.443(a)(1)(ii) through (a)(1)(v); and

(2) The HAP emissions reduction that occurring by complying with the clean condensate alternative technology.

(f) For the purposes of all requirements in this section, each owner or operator may use as an alternative, individual equipment systems (instead of total of all equipment systems) within the clean condensate alternative affected source to determine emissions and reductions to demonstrate equal or greater than the reductions that would have been achieved by compliance with § 63.443(a)(1)(ii) through (a)(1)(v).

(g) The initial and updates to the control strategy report specified in § 63.455(b) shall include to the extent possible the following information:

(1) A detailed description of:

(i) The equipment systems and emission points that comprise the clean condensate alternative affected source;

(ii) The air pollution control technologies that would be used to meet the requirements of § 63.443(a)(1)(ii) through (a)(1)(v);

(iii) The clean condensate alternative technology to be used.

(2) Estimates and basis for the estimates of total HAP emissions and emissions reductions to fulfill the requirements paragraphs (d), (e), and (f) of this section.

(h) Each owner or operator shall report to the Administrator by the applicable compliance date specified in § 63.440(d) or (e) the rationale, calculations, test procedures, and data documentation used to demonstrate compliance with all the requirements of this section.

§§ 63.448–63.449 [Reserved]

§ 63.450 Standards for enclosures and closed-vent systems.

(a) Each enclosure and closed-vent system specified in §§ 63.443(c), 63.444(b), and 63.445(b) for capturing and transporting vent streams that contain HAP shall meet the requirements specified in paragraphs (b) through (d) of this section.

(b) Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified § 63.457(e). Each enclosure or hood opening closed during the initial performance test specified in § 63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.

(c) Each component of the closed-vent system used to comply with §§ 63.443(c), 63.444(b), and 63.445(b) that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million by volume above background, as measured by the procedures specified in § 63.457(d).

(d) Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in §§ 63.443, 63.444, or 63.445 shall comply with either of the following requirements:

(1) On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line; or

(2) For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.

§§ 63.451–63.452 [Reserved]

§ 63.453 Monitoring requirements.

(a) Each owner or operator subject to the standards specified in §§ 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d), shall install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in § 63.2 of this part) as specified in paragraphs (b) through (m) of this section, except as allowed in paragraph (m) of this section. The CMS shall include a continuous recorder.

(b) A CMS shall be operated to measure the temperature in the firebox or in the ductwork immediately downstream of the firebox and before any substantial heat exchange occurs for each thermal oxidizer used to comply with the requirements of § 63.443(d)(1) through (d)(3). Owners and operators complying with the requirements in § 63.443(d)(2) or (d)(3) shall monitor the parameter specified and for the temperature and concentration limits specified.

(c) A CMS shall be operated to measure the following parameters for each gas scrubber used to comply with the bleaching system requirements of § 63.445(c) or the sulfite pulping system requirements of § 63.444(c).

(1) The pH or the oxidation/reduction potential of the gas scrubber effluent;

(2) The gas scrubber vent gas inlet flow rate; and

(3) The gas scrubber liquid influent flow rate.

(d) As an option to the requirements specified in paragraph (c) of this section, a CMS shall be operated to measure the chlorine outlet concentration of each gas scrubber used to comply with the bleaching system outlet concentration requirement specified in § 63.445(c)(2).

(e) The owner or operator of a bleaching system complying with 40 CFR 430.24, shall monitor the chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the bleaching system during the extended compliance period specified in § 63.440(d)(3).

(f) A CMS shall be operated to measure the gas scrubber parameters specified in paragraphs (c)(1) through (c)(3) of this section or those site specific parameters determined according to the procedures specified in paragraph (n) of this section to comply with the sulfite pulping system requirements specified in § 63.444(c).

(g) A CMS shall be operated to measure the following parameters for each steam stripper used to comply with the treatment requirements in § 63.446(e) (3), (4), or (5):

(1) The process wastewater feed rate;

(2) The steam feed rate; and

(3) The process wastewater column feed temperature.

(h) As an option to the requirements specified in paragraph (g) of this section, a CMS shall be operated to measure the methanol outlet concentration to comply with the steam stripper outlet concentration requirement specified in § 63.446 (e)(4) or (e)(5).

(i) A CMS shall be operated to measure the appropriate parameters determined according to the procedures specified in paragraph (n) of this section to comply with the condensate applicability requirements specified in § 63.446(c).

(j) Each owner or operator using a biological treatment system to comply with § 63.446(e)(2) shall perform the following monitoring procedures.

quirements specified in § 63.960, 3.961, and 63.962 of subpart RR of this art, except for closed vent systems and ontrol devices shall be designed and perated in accordance with § 63.443(d) and 63.450, instead of in ccordance with § 63.693 as specified in 63.962 (a)(3)(ii), (b)(3)(ii)(A), and)(3)(ii)(B)(*5*)(*iii*); and

(2) If a condensate tank is used in the losed collection system, the tank shall eet the following requirements:

(i) The fixed roof and all openings e.g., access hatches, sampling ports, auge wells) shall be designed and perated with no detectable leaks as idicated by an instrument reading of ss than 500 parts per million above ackground, and vented into a closed-ent system that meets the requirements n § 63.450 and routed to a control evice that meets the requirements in 63.443(d); and

(ii) Each opening shall be maintained n a closed, sealed position (e.g., overed by a lid that is gasketed and atched) at all times that the tank ontains pulping process condensates or ny HAP removed from a pulping rocess condensate stream except when t is necessary to use the opening for ampling, removal, or for equipment nspection, maintenance, or repair.

(e) Each pulping process condensate rom the equipment systems listed in paragraph (b) of this section shall be reated according to one of the following ptions:

(1) Recycle the pulping process condensate to an equipment system specified in § 63.443(a) meeting the requirements specified in § 63.443(c) and (d); or

(2) Discharge the pulping process condensate below the liquid surface of a biological treatment system meeting the requirement specified in paragraph (e)(3) of this section; or

(3) Treat the pulping process condensates to reduce or destroy the total HAP's by at least 92 percent or more by weight; or

(4) At mills that do not perform bleaching, treat the pulping process condensates to remove 3.3 kilograms or more of total HAP per megagram (6.6 pounds per ton) of ODP, or achieve a total HAP concentration of 210 parts per million or less by weight at the outlet of the control device; or

(5) At mills that perform bleaching, treat the pulping process condensates to remove 5.1 kilograms or more of total HAP per megagram (10.2 pounds per ton) of ODP, or achieve a total HAP concentration of 330 parts per million or less by weight at the outlet of the control device.

(f) Each HAP removed from a pulping process condensate stream during treatment and handling under paragraphs (d) or (e) of this section, except for those treated according to paragraph (e)(2) of this section, shall be controlled as specified in § 63.443(c) and (d).

(g) For each steam stripper system used to comply with the requirements specified in paragraph (e)(3) of this section, periods of excess emissions reported under § 63.455 shall not be a violation of paragraphs (d), (e), and (f) of this section provided that the time of excess emissions (including periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed 10 percent.

(h) Each owner or operator of a new or existing affected source subject to the requirements of this section shall evaluate all new or modified pulping process condensates or changes in the annual bleached or non-bleached ODP used to comply with paragraph (i) of this section, to determine if they meet the applicable requirements of this section.

(i) For the purposes of meeting the requirements in paragraphs (c)(2), (e)(4), or (e)(5) of this section at mills producing both bleached and unbleached pulp products, owners and operators may meet a prorated mass standard that is calculated by prorating the applicable mass standards (kilograms of total HAP per megagram of ODP) for bleached and unbleached specified in paragraphs (c)(2), (e)(4), or (e)(5) of this section by the ratio of annual megagrams of bleached and unbleached ODP.

§ 63.447 Clean condensate alternative.

As an alternative to the requirements specified in § 63.443(a)(1)(ii) through (a)(1)(v) for the control of HAP emissions from pulping systems using the kraft process, an owner or operator must demonstrate to the satisfaction of the Administrator, by meeting all the requirements below, that the total HAP emissions reductions achieved by this clean condensate alternative technology are equal to or greater than the total HAP emission reductions that would have been achieved by compliance with § 63.443(a)(1)(ii) through (a)(1)(v).

(a) For the purposes of this section only the following additional definitions apply.

(1) *Clean condensate alternative affected source* means the total of all HAP emission points in the pulping, bleaching, causticizing, and papermaking systems (exclusive of HAP emissions attributable to additives to paper machines and HAP emission points in the LVHC system).

(2) *Causticizing system* means all equipment associated with converting sodium carbonate into active sodium hydroxide. The equipment includes smelt dissolving tanks, lime mud washers and storage tanks, white and mud liquor clarifiers and storage tanks, slakers, slaker grit washers, lime kilns, green liquor clarifiers and storage tanks, and dreg washers ending with the white liquor storage tanks prior to the digester system, and any other equipment serving the same function as those previously listed.

(3) *Papermaking system* means all equipment used to convert pulp into paper, paperboard, or market pulp, including the stock storage and preparation systems, the paper or paperboard machines, and the paper machine white water system, broke recovery systems, and the systems involved in calendering, drying, on-machine coating, slitting, winding, and cutting.

(b) Each owner or operator shall install and operate a clean condensate alternative technology with a continuous monitoring system to reduce total HAP emissions by treating and reducing HAP concentrations in the pulping process water used within the clean condensate alternative affected source.

(c) Each owner or operator shall calculate HAP emissions on a kilogram per megagram of ODP basis and measure HAP emissions according to the appropriate procedures contained in § 63.457.

(d) Each owner or operator shall determine the baseline HAP emissions for each equipment system and the total of all equipment systems in the clean condensate alternative affected source based on the following:

(1) Process and air pollution control equipment installed and operating on or after December 17, 1993, and

(2) Compliance with the following requirements that affect the level of HAP emissions from the clean condensate alternative affected source:

(i) The pulping process condensates requirements in § 63.446;

(ii) The applicable effluent limitation guidelines and standards in 40 CFR part 430, subparts A, B, D, and E; and

(iii) All other applicable requirements of local, State, or Federal agencies or statutes.

(e) Each owner or operator shall determine the following HAP emission reductions from the baseline HAP emissions determined in paragraph (d) of this section for each equipment system and the total of all equipment

(2) Four percent for control devices used to reduce the total HAP emissions from the HVLC system; and

(3) Four percent for control devices used to reduce the total HAP emissions from both the LVHC and HVLC systems.

§ 63.444 Standards for the pulping system at sulfite processes.

(a) The owner or operator of each sulfite process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (b) and (c) of this section.

(1) At existing sulfite affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each digester system vent;

(ii) Each evaporator system vent; and

(iii) Each pulp washing system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraph (a)(1) of this section and the following equipment shall be controlled:

(i) Each weak liquor storage tank;

(ii) Each strong liquor storage tank; and

(iii) Each acid condensate storage tank.

(b) Equipment listed in paragraph (a) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in § 63.450. Emissions from equipment listed in paragraph (a) of this section that is not necessary to be reduced to meet paragraph (c) of this section is not required to be routed to a control device.

(c) The total HAP emissions from both the equipment systems listed in paragraph (a) of this section and the vents, wastewater, and condensate streams from the control device used to reduce HAP emissions, shall be controlled as follows.

(1) Each calcium-based or sodium-based sulfite pulping process shall:

(i) Emit no more than 0.44 kilograms of total HAP or methanol per megagram (0.89 pounds per ton) of ODP; or

(ii) Remove 92 percent or more by weight of the total HAP or methanol.

(2) Each magnesium-based or ammonium-based sulfite pulping process shall:

(i) Emit no more than 1.1 kilograms of total HAP or methanol per megagram (2.2 pounds per ton) of ODP; or

(ii) Remove 87 percent or more by weight of the total HAP or methanol.

§ 63.445 Standards for the bleaching system.

(a) Each bleaching system that does not use any chlorine or chlorinated compounds for bleaching is exempt from the requirements of this section. Owners or operators of the following bleaching systems shall meet all the provisions of this section:

(1) Bleaching systems that use chlorine;

(2) Bleaching systems bleaching pulp from kraft, sulfite, or soda pulping processes that uses any chlorinated compounds; or

(3) Bleaching systems bleaching pulp from mechanical pulping processes using wood or from any process using secondary or non-wood fibers, that use chlorine dioxide.

(b) The equipment at each bleaching stage, of the bleaching systems listed in paragraph (a) of this section, where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in § 63.450.

(c) The control device used to reduce chlorinated HAP emissions (not including chloroform) from the equipment specified in paragraph (b) of this section shall:

(1) Reduce the total chlorinated HAP mass in the vent stream entering the control device by 99 percent or more by weight;

(2) Achieve a treatment device outlet concentration of 10 parts per million or less by volume of total chlorinated HAP; or

(3) Achieve a treatment device outlet mass emission rate of 0.001 kg of total chlorinated HAP mass per megagram (0.002 pounds per ton) of ODP.

(d) The owner or operator of each bleaching system subject to paragraph (a)(2) of this section shall comply with paragraph (d)(1) or (d)(2) of this section to reduce chloroform air emissions to the atmosphere, except the owner or operator of each bleaching system complying with extended compliance under § 63.440(d)(3)(ii) shall comply with paragraph (d)(1) of this section.

(1) Comply with the following applicable effluent limitation guidelines and standards specified in 40 CFR part 430:

(i) Dissolving-grade kraft bleaching systems and lines, 40 CFR 430.14 through 430.17;

(ii) Paper-grade kraft and soda bleaching systems and lines, 40 CFR 430.24(a)(1) and (e), and 40 CFR 430.26 (a) and (c);

(iii) Dissolving-grade sulfite bleaching systems and lines, 40 CFR 430.44 through 430.47; or

(iv) Paper-grade sulfite bleaching systems and lines, 40 CFR 430.54(a) and (c), and 430.56(a) and (c).

(2) Use no hypochlorite or chlorine for bleaching in the bleaching system or line.

§ 63.446 Standards for kraft pulping process condensates.

(a) The requirements of this section apply to owners or operators of kraft processes subject to the requirements of this subpart.

(b) The pulping process condensates from the following equipment systems shall be treated to meet the requirements specified in paragraphs (c), (d), and (e) of this section:

(1) Each digester system;

(2) Each turpentine recovery system;

(3) Each evaporator stage where weak liquor is introduced (feed stages) in the evaporator system;

(4) Each HVLC collection system; and

(5) Each LVHC collection system.

(c) One of the following combinations of HAP-containing pulping process condensates generated, produced, or associated with the equipment systems listed in paragraph (b) of this section shall be subject to the requirements of paragraphs (d) and (e) of this section:

(1) All pulping process condensates from the equipment systems specified in paragraphs (b)(1) through (b)(5) of this section.

(2) The combined pulping process condensates from the equipment systems specified in paragraphs (b)(4) and (b)(5) of this section, plus pulping process condensate stream(s) that in total contain at least 65 percent of the total HAP mass from the pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(3) of this section.

(3) The pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(5) of this section that in total contain a total HAP mass of 3.6 kilograms or more of total HAP per megagram (7.2 pounds per ton) of ODP for mills that do not perform bleaching or 5.5 kilograms or more of total HAP per megagram (11.1 pounds per ton) of ODP for mills that perform bleaching.

(d) The pulping process condensates from the equipment systems listed in paragraph (b) of this section shall be conveyed in a closed collection system that is designed and operated to meet the requirements specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Each closed collection system shall meet the individual drain system

reatment with ozone, oxygen, or eroxide before the first application of chemical bleaching agent intended to righten pulp. The pulping system ncludes pulping process condensates nd can include multiple pulping lines.

Recovery furnace means an enclosed ombustion device where concentrated pent liquor is burned to recover odium and sulfur, produce steam, and lispose of unwanted dissolved wood omponents in the liquor.

Screen system means equipment in vhich oversized particles are removed rom the pulp slurry prior to the leaching or papermaking system vashed stock storage.

Secondary fiber pulping means a ulping process that converts a fibrous naterial, that has previously undergone manufacturing process, into pulp tock through the addition of water and nechanical energy. The mill then uses hat pulp as the raw material in another nanufactured product. These mills may lso utilize chemical, heat, and nechanical processes to remove ink articles from the fiber stock.

Semi-chemical pulping means a ulping process that combines both hemical and mechanical pulping rocesses. The semi-chemical pulping rocess produces intermediate yields anging from 55 to 90 percent.

Soda pulping means a chemical ulping process that uses sodium ydroxide as the active chemical in the ooking liquor.

Spent liquor means process liquid enerated from the separation of ooking liquor from pulp by the pulp vashing system containing dissolved rganic wood materials and residual ooking compounds.

Steam stripper system means a olumn (including associated stripper eed tanks, condensers, or heat xchangers) used to remove compounds rom wastewater or condensates using team. The steam stripper system also ontains all equipment associated with methanol rectification process ncluding rectifiers, condensers, ecanters, storage tanks, and any other quipment serving the same function as hose previously listed.

Strong liquor storage tanks means all torage tanks containing liquor that has een concentrated in preparation for ombustion or oxidation in the recovery rocess.

Sulfite pulping means a chemical ulping process that uses a mixture of ulfurous acid and bisulfite ion as the ooking liquor.

Temperature monitoring device eans a piece of equipment used to onitor temperature and having an ccuracy of ±1.0 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 degrees Celsius (°C), whichever is greater.

Thermal oxidizer means an enclosed device that destroys organic compounds by thermal oxidation.

Turpentine recovery system means all equipment associated with recovering turpentine from digester system gases including condensers, decanters, storage tanks, and any other equipment serving the same function as those previously listed. The turpentine recovery system includes any liquid streams associated with the turpentine recovery process such as turpentine decanter underflow. Liquid streams that are intended for byproduct recovery are not considered turpentine recovery system condensate streams.

Weak liquor storage tank means any storage tank except washer filtrate tanks containing spent liquor recovered from the pulping process and prior to the evaporator system.

§ 63.442 [Reserved]

§ 63.443 Standards for the pulping system at kraft, soda, and semi-chemical processes.

(a) The owner or operator of each pulping system using the kraft process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems, as specified in paragraphs (c) and (d) of this section.

(1) At existing affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each LVHC system;

(ii) Each knotter or screen system with total HAP mass emission rates greater than or equal to the rates specified in paragraphs (a)(1)(ii)(A) or (a)(1)(ii)(B) of this section or the combined rate specified in paragraph (a)(1)(ii)(C) of this section.

(A) Each knotter system with emissions of 0.05 kilograms or more of total HAP per megagram of ODP (0.1 pounds per ton).

(B) Each screen system with emissions of 0.10 kilograms or more of total HAP per megagram of ODP (0.2 pounds per ton).

(C) Each knotter and screen system with emissions of 0.15 kilograms or more of total HAP per megagram of ODP (0.3 pounds per ton).

(iii) Each pulp washing system;

(iv) Each decker system that:

(A) Uses any process water other than fresh water or paper machine white water; or

(B) Uses any process water with a total HAP concentration greater than 400 parts per million by weight; and

(v) Each oxygen delignification system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraphs (a)(1)(i), (a)(1)(iii), and (a)(1)(v) of this section and the following equipment systems shall be controlled:

(i) Each knotter system;

(ii) Each screen system;

(iii) Each decker system; and

(iv) Each weak liquor storage tank.

(b) The owner or operator of each pulping system using a semi-chemical or soda process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (c) and (d) of this section.

(1) At each existing affected sources, the total HAP emissions from each LVHC system shall be controlled.

(2) At each new affected source, the total HAP emissions from each LVHC system and each pulp washing system shall be controlled.

(c) Equipment systems listed in paragraphs (a) and (b) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (d) of this section. The enclosures and closed-vent system shall meet the requirements specified in § 63.450.

(d) The control device used to reduce total HAP emissions from each equipment system listed in paragraphs (a) and (b) of this section shall:

(1) Reduce total HAP emissions by 98 percent or more by weight; or

(2) Reduce the total HAP concentration at the outlet of the thermal oxidizer to 20 parts per million or less by volume, corrected to 10 percent oxygen on a dry basis; or

(3) Reduce total HAP emissions using a thermal oxidizer designed and operated at a minimum temperature of 871 °C (1600 °F) and a minimum residence time of 0.75 seconds; or

(4) Reduce total HAP emissions using a boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone.

(e) Periods of excess emissions reported under § 63.455 shall not be a violation of § 63.443 (c) and (d) provided that the time of excess emissions (excluding periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed the following levels:

(1) One percent for control devices used to reduce the total HAP emissions from the LVHC system; and

Decker system means all equipment used to thicken the pulp slurry or reduce its liquid content after the pulp washing system and prior to high-density pulp storage. The decker system includes decker vents, filtrate tanks, associated vacuum pumps, and any other equipment serving the same function as those previously listed.

Digester system means each continuous digester or each batch digester used for the chemical treatment of wood or non-wood fibers. The digester system equipment includes associated flash tank(s), blow tank(s), chip steamer(s) not using fresh steam, blow heat recovery accumulator(s), relief gas condenser(s), prehydrolysis unit(s) preceding the pulp washing system, and any other equipment serving the same function as those previously listed. The digester system includes any of the liquid streams or condensates associated with batch or continuous digester relief, blow, or flash steam processes.

Emission point means any part of a stationary source that emits hazardous air pollutants regulated under this subpart, including emissions from individual process vents, stacks, open pieces of process equipment, equipment leaks, wastewater and condensate collection and treatment system units, and those emissions that could reasonably be conveyed through a stack, chimney, or duct where such emissions first reach the environment.

Evaporator system means all equipment associated with increasing the solids content and/or concentrating spent cooking liquor from the pulp washing system including pre-evaporators, multi-effect evaporators, concentrators, and vacuum systems, as well as associated condensers, hotwells, and condensate streams, and any other equipment serving the same function as those previously listed.

Flow indicator means any device that indicates gas or liquid flow in an enclosed system.

HAP means a hazardous air pollutant as defined in § 63.2 of subpart A of this part.

High volume, low concentration or HVLC collection system means the gas collection and transport system used to convey gases from the HVLC system to a control device.

High volume, low concentration or HVLC system means the collection of equipment including the pulp washing, knotter, screen, decker, and oxygen delignification systems, weak liquor storage tanks, and any other equipment serving the same function as those previously listed.

Knotter system means equipment where knots, oversized material, or pieces of uncooked wood are removed from the pulp slurry after the digester system and prior to the pulp washing system. The knotter system equipment includes the knotter, knot drainer tanks, ancillary tanks, and any other equipment serving the same function as those previously listed.

Kraft pulping means a chemical pulping process that uses a mixture of sodium hydroxide and sodium sulfide as the cooking liquor.

Lime kiln means an enclosed combustion device used to calcine lime mud, which consists primarily of calcium carbonate, into calcium oxide.

Low volume, high concentration or LVHC collection system means the gas collection and transport system used to convey gases from the LVHC system to a control device.

Low volume, high concentration or LVHC system means the collection of equipment including the digester, turpentine recovery, evaporator, steam stripper systems, and any other equipment serving the same function as those previously listed.

Mechanical pulping means a pulping process that only uses mechanical and thermo-mechanical processes to reduce wood to a fibrous mass. The mechanical pulping processes include, but are not limited to, stone groundwood, pressurized groundwood, refiner mechanical, thermal refiner mechanical, thermo-mechanical, and tandem thermo-mechanical.

Non-wood pulping means the production of pulp from fiber sources other than trees. The non-wood fiber sources include, but are not limited to, bagasse, cereal straw, cotton, flax straw, hemp, jute, kenaf, and leaf fibers.

Oven-dried pulp or ODP means a pulp sample at zero percent moisture content by weight. Pulp samples for applicability or compliance determinations for both the pulping and bleaching systems shall be unbleached pulp. For purposes of complying with mass emission limits in this subpart, megagram of ODP shall be measured to represent the amount of pulp entering and processed by the equipment system under the specified mass limit. For equipment that does not process pulp, megagram of ODP shall be measured to represent the amount of pulp that was processed to produce the gas and liquid streams.

Oxygen delignification system means the equipment that uses oxygen to remove lignin from pulp after high-density stock storage and prior to the bleaching system. The oxygen delignification system equipment includes the blow tank, washers, filtrate tanks, any interstage pulp storage tanks, and any other equipment serving the same function as those previously listed.

Primary fuel means the fuel that provides the principal heat input to the combustion device. To be considered primary, the fuel must be able to sustain operation of the combustion device without the addition of other fuels.

Process wastewater treatment system means a collection of equipment, a process, or specific technique that removes or destroys the HAP's in a process wastewater stream. Examples include, but are not limited to, a steam stripping unit, wastewater thermal oxidizer, or biological treatment unit.

Pulp washing system means all equipment used to wash pulp and separate spent cooking chemicals following the digester system and prior to the bleaching system, oxygen delignification system, or paper machine system (at unbleached mills). The pulp washing system equipment includes vacuum drum washers, diffusion washers, rotary pressure washers, horizontal belt filters, intermediate stock chests, and their associated vacuum pumps, filtrate tanks, foam breakers or tanks, and any other equipment serving the same function as those previously listed. The pulp washing system does not include deckers, screens, knotters, stock chests, or pulp storage tanks following the last stage of pulp washing.

Pulping line means a group of equipment arranged in series such that the wood chips are digested and the resulting pulp progresses through a sequence of steps that may include knotting, refining, washing, thickening, blending, storing, oxygen delignification, and any other equipment serving the same function as those previously listed.

Pulping process condensates means any HAP-containing liquid that results from contact of water with organic compounds in the pulping process. Examples of process condensates include digester system condensates, turpentine recovery system condensates, evaporator system condensates, LVHC system condensates, HVLC system condensates, and any other condensates from equipment serving the same function as those previously listed. Liquid streams that are intended for byproduct recovery are not considered process condensate streams.

Pulping system means all process equipment, beginning with the digester system, and up to and including the last piece of pulp conditioning equipment prior to the bleaching system, including

Table 1 to Subpart S.—General Provisions Applicability to Subpart S

Subpart S—National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry

§ 63.440 Applicability.

(a) The provisions of this subpart apply to the owner or operator of processes that produce pulp, paper, or paperboard; that are located at a plant site that is a major source as defined in § 63.2 of subpart A of this part; and that use the following processes and materials:

(1) Kraft, soda, sulfite, or semi-chemical pulping processes using wood; or

(2) Mechanical pulping processes using wood; or

(3) Any process using secondary or non-wood fibers.

(b) The affected source to which the existing source provisions of this subpart apply is as follows:

(1) For the processes specified in paragraph (a)(1) of this section, the affected source is the total of all HAP emission points in the pulping and bleaching systems; or

(2) For the processes specified in paragraphs (a)(2) or (a)(3) of this section, the affected source is the total of all HAP emission points in the bleaching system.

(c) The new source provisions of this subpart apply to the total of all HAP emission points at new or existing sources as follows:

(1) Each affected source defined in paragraph (b)(1) of this section that commences construction or reconstruction after December 17, 1993;

(2) Each pulping system or bleaching system for the processes specified in paragraph (a)(1) of this section that commences construction or reconstruction after December 17, 1993;

(3) Each additional pulping or bleaching line at the processes specified in paragraph (a)(1) of this section, that commences construction after December 17, 1993;

(4) Each affected source defined in paragraph (b)(2) of this section that commences construction or reconstruction after March 8, 1996; or

(5) Each additional bleaching line at the processes specified in paragraphs (a)(2) or (a)(3) of this section, that commences construction after March 8, 1996.

(d) Each existing source shall achieve compliance no later than April 16, 2001, except as provided in paragraphs (d)(1) through (d)(3) of this section.

(1) Each kraft pulping system shall achieve compliance with the pulping system provisions of § 63.443 for the equipment listed in § 63.443(a)(1)(ii) through (a)(1)(v) as expeditiously as practicable, but in no event later than April 17, 2006 and the owners and operators shall establish dates, update dates, and report the dates for the milestones specified in § 63.455(b).

(2) Each dissolving-grade bleaching system at either kraft or sulfite pulping mills shall achieve compliance with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than 3 years after the promulgation of the revised effluent limitation guidelines and standards under 40 CFR 430.14 through 430.17 and 40 CFR 430.44 through 430.47.

(3) Each bleaching system complying with the Voluntary Advanced Technology Incentives Program for Effluent Limitation Guidelines in 40 CFR 430.24, shall comply with the requirements specified in either paragraph (d)(3)(i) or (d)(3)(ii) of this section for the effluent limitation guidelines and standards in 40 CFR 430.24.

(i) Comply with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than April 16, 2001.

(ii) Comply with all of the following:

(A) The owner or operator of a bleaching system shall comply with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than April 15, 2004.

(B) The owner or operator of a bleaching system shall not increase the application rate of chlorine or hypochlorite in kg of bleaching agent per megagram of ODP, in the bleaching system above the average daily rates used over the three months prior to June 15, 1998 until the requirements of paragraph (d)(3)(ii)(A) of this section are met and record application rates as specified in § 63.454(c).

(C) Owners and operators shall establish dates, update dates, and report the dates for the milestones specified in § 63.455(b).

(e) Each new source, specified as the total of all HAP emission points for the sources specified in paragraph (c) of this section, shall achieve compliance upon start-up or June 15, 1998, whichever is later, as provided in § 63.6(b) of subpart A of this part.

(f) Each owner or operator of an affected source with affected process equipment shared by more than one type of pulping process, shall comply with the applicable requirement in this subpart that achieves the maximum degree of reduction in HAP emissions.

(g) Each owner or operator of an affected source specified in paragraphs (a) through (c) of this section must comply with the requirements of subpart A—General Provisions of this part, as indicated in table 1 to this subpart.

§ 63.441 Definitions.

All terms used in this subpart shall have the meaning given them in the CAA, in subpart A of this part, and in this section as follows:

Acid condensate storage tank means any storage tank containing cooking acid following the sulfur dioxide gas fortification process.

Black liquor means spent cooking liquor that has been separated from the pulp produced by the kraft, soda, or semi-chemical pulping process.

Bleaching means brightening of pulp by the addition of oxidizing chemicals or reducing chemicals.

Bleaching line means a group of bleaching stages arranged in series such that bleaching of the pulp progresses as the pulp moves from one stage to the next.

Bleaching stage means all process equipment associated with a discrete step of chemical application and removal in the bleaching process including chemical and steam mixers, bleaching towers, washers, seal (filtrate) tanks, vacuum pumps, and any other equipment serving the same function as those previously listed.

Bleaching system means all process equipment after high-density pulp storage prior to the first application of oxidizing chemicals or reducing chemicals following the pulping system, up to and including the final bleaching stage.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam. A boiler is not considered a thermal oxidizer.

Chip steamer means a vessel used for the purpose of preheating or pretreating wood chips prior to the digester, using flash steam from the digester or live steam.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, including but not limited to, a thermal oxidizer, lime kiln, recovery furnace, process heater, or boiler, used for the thermal oxidation of organic hazardous air pollutant vapors.

2,3,7,8-TCDF), chloroform, biochemical oxygen demand (BOD), and total suspended solids (TSS). Methods for monitoring these pollutants are specified in tables at 40 CFR part 136. When available, methods published by voluntary consensus standards bodies are included in the list of approved methods in these tables. Specifically, voluntary consensus standards are approved for the determination of chloroform, BOD, and TSS (from the 18th edition of Standard Methods). In addition, USGS methods are approved for BOD and TSS.

For TCDD and TCDF, EPA is specifying the use of EPA Method 1613, promulgated at 62 FR 48394 (September 15, 1997). This method was developed to support data gathering for regulation of pulp and paper industry discharges and incorporates procedures from EPA, academia, industry (NCASI and the Dow Chemical Co.) and a commercial laboratory. There were no voluntary consensus standards methods available for these pollutants by high resolution gas chromatography (HRGC) coupled with high resolution mass spectrometry (HRMS) at the time EPA Method 1613 was developed. Both HRGC and HRMS are required to separately detect and measure dioxin and furan isomers at low concentrations (i.e., low parts per quadrillion (ppq)). High resolution techniques are necessary to conduct the assay in the presence of interfering analytes. EPA is unaware of the existence of an HRGC/HRMS method from a voluntary consensus standards body for determination of TCDD and TCDF in the low ppq range in pulp and paper industry discharges.

XI. Background Documents

The summary of public comments and agency responses and the environmental impacts statement for the NESHAP are contained in the final Background Information Document (BID). A paper copy of the final Background Information Document for the NESHAP may be obtained from the U.S. EPA Library (MD–35), Research Triangle Park, North Carolina 27711, telephone (919) 541–2777; or from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22151, telephone (703) 487–4650. To obtain the final Background Information Document, please refer to "Pulp, Paper, and Paperboard Industry—Background Information for Promulgated Air Emission Standards, Manufacturing Processes at Kraft, Sulfite, Soda, Semi-Chemical, Mechanical, and Secondary and Non-wood Fiber Mills, Final EIS" (EPA–453/R–93–050b). An electronic copy of the final Background Information Document is available from the Technology Transfer Network described in the **SUPPLEMENTARY INFORMATION** section of this document.

Documents supporting the effluent limitations guidelines and standards may be obtained by contacting the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22151, telephone (703) 487–4650.

EPA's technical conclusions concerning the wastewater regulations are detailed in the "Supplemental Technical Development Document for Effluent Limitations Guidelines and Standards for the Pulp, Paper, and Paperboard Point Source Category" (EPA–821–R–97–011, DCN 14487). The Agency's economic analysis is found in the "Economic Analysis for the National Emissions Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Pulp, Paper, and Paperboard Industry—Phase I," referred to as the Economic Analysis (EPA–821–R–97–012, DCN 14649). This document also includes an analysis of the incremental costs and pollutant removals for the effluent regulations. Analytical methods used in the development of the effluent guidelines are found in "Analytical Methods for the Determination of Pollutants in Pulp and Paper Industry Wastewater," a compendium of analytical methods (EPA 821–B–97–00). The environmental assessment is presented in the "Water Quality Assessment of Final Effluent Limitations Guidelines for the Papergrade Sulfite and Bleached Papergrade Kraft and Soda Subcategories of the Pulp, Paper, and Paperboard Industry" (EPA–823–R–97–009, DCN 14650). The statistical analyses used in this rulemaking are detailed in the "Statistical Support Document for the Pulp and Paper Industry: Subpart B" (DCN 14496). The best management practices program is presented in "Technical Support Document for Best Management Practices for Spent Pulping Liquor Management, Spill Prevention, and Control (DCN 14489), also referred to as the BMP Technical Support Document. The Advanced Technology Incentives Program is presented in the "Technical Support Document for the Voluntary Advanced Technology Incentives Program," (EPA–821–R–97–014, DCN 14488).

List of Subjects

40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 430

Paper and paper products industry, Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

Dated: November 14, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

2. Part 63 is amended by adding subpart S to read as follows:

Subpart S—National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry

Sec.

63.440 Applicability.
63.441 Definitions.
63.442 [Reserved]
63.443 Standards for the pulping system at kraft, soda, and semi-chemical processes.
63.444 Standards for the pulping system at sulfite processes.
63.445 Standards for the bleaching system.
63.446 Standards for kraft pulping process condensates.
63.447 Clean condensate alternative.
63.448–63.449 [Reserved]
63.450 Standards for enclosures and closed-vent systems.
63.451–63.452 [Reserved]
63.453 Monitoring requirements.
63.454 Recordkeeping requirements.
63.455 Reporting requirements.
63.456 [Reserved]
63.457 Test methods and procedures.
63.458 Delegation of authority.
63.459 [Reserved]

disproportionally high adverse human health or environmental effects on minority populations and low-income populations." (Sec.3–301 and Sec. 3–302). In developing the Cluster Rules, EPA analyzed the environmental justice questions raised by these rules. EPA conducted two analyses in 1996 to comply with Executive Order 12898 and to determine human health effects on minority and low-income populations.

First, in a comparison of demographic characteristics, EPA found that there is no significant difference in ethnic makeup or income level of counties where bleached papergrade kraft and soda mills are located when compared to the States in which they are located. In fact, of the twenty-six States with bleached papergrade kraft and soda mills, fifteen States actually have lower minority populations (as a percentage of overall population) in mill counties than in the State as a whole, and sixteen States have a lower percent African-American population in mill counties than in their respective states. Fifteen States have a slightly larger portion of the population living below the poverty line in mill counties (15 percent average) when compared to the State as a whole (14.1 percent average); however, when EPA examined the results statistically, differences examined between mill counties and total State populations were not significant. Therefore, EPA has concluded that the regulatory decisions reflected in today's rules will not have a disproportionately high adverse human health or environmental effect on minority populations or low-income populations.

Second, EPA investigated the fish consumption characteristics of Native American populations downstream from pulp and paper mills. Of the 48 Native American tribes downstream from pulp mills, eight have special subsistence fishing rights. One finding from EPA's analysis is that members of five of these tribes have elevated risks of contracting cancer from consuming fish contaminated by dioxin, when compared to the general population and recreational anglers, because they consume fish at higher levels. EPA expects the final rule to reduce substantially the cancer risks to these tribal populations, as discussed in Chapter 8 of the Economic Analysis (DCN 14649).

J. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is a "major rule" as defined by 5 U.S.C. 804(2).

K. National Technology Transfer and Advancement Act

Under Section 12(d) of the National Technology Transfer and Advancement Act, the Agency is required to use voluntary consensus standards in its regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) which are developed or adopted by voluntary consensus standards bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the Office of Management and Budget, an explanation of the reasons for not using such standards. This section summarizes EPA's response to the requirements of the NTTAA for the analytical test methods promulgated as part of today's effluent limitations guidelines and standards.

EPA's analytical test method development is consistent with the requirements of the NTTAA. Although the Agency initiated data collection for these effluent guidelines many years prior to enactment of the NTTAA, traditionally, analytical test method development has been analogous to the Act's requirements for consideration and use of voluntary consensus standards. EPA performed extensive literature searches to identify any analytical methods from industry, academia, voluntary consensus standards bodies and other parties that could be used to measure the analytes in today's rulemaking. The results of this search formed the basis for EPA's analytical method development and validation in support of this rulemaking. Two new analytical test methods are being promulgated in today's final rule (see Section VI.B.4).

The first method is EPA Method 1650 for determination of adsorbable organic halides (AOX). Development of Method 1650 began in 1989 to support data gathering for regulation of pulp and paper industry discharges. This method was developed by combining various procedures contained in methods from voluntary consensus standards bodies and other standards developing organizations such as German DIN standard 38 409, International Standard Organization (ISO) Method 9562, Scandinavian Method SCAN–W 9:89, Standard Method 5320 (published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation), a method published by Environment Canada, EPA's Method 9020 and EPA's interim Method 450.1. The foreign and international methods all employed the batch adsorption technique for determination of AOX; the U.S. methods all employed the column technique. Nearly all data collected by the paper industry and others prior to development of Method 1650 were gathered using the column technique. Method 1650 allows use of both the batch and column techniques but contains restrictions on the batch technique specific to paper industry wastewaters, as detailed in the Method and as described above in Section VI.B.4 and in EPA's responses to public comments (DCN 14497, Vol. VII). In addition to the differences between adsorption techniques, none of the existing methods, including those in voluntary consensus standards, contained the standardized quality control (QC) and QC acceptance criteria that EPA requires for data verification and validation in its water programs. EPA is therefore promulgating the new EPA Method 1650.

EPA is also promulgating EPA Method 1653 for determination of chlorinated phenolics. Development of Method 1653 also began in 1989 to support data gathering for regulation of pulp and paper industry discharges. This method was developed using National Council of the Paper Industry for Air and Stream Improvement (NCASI) Methods CP85.01 and CP86.01 as a starting point and adding the necessary standardized QC and QC acceptance criteria. EPA Method 1653 and the NCASI methods employ in-situ derivatization to assure that only chlorophenolics are derivatized and measured. The in-situ derivatization technique allows only chlorophenolics to be derivatized in the effluent and leaves behind interfering analytes. This condition is necessary for accurate measurement of the relevant analytes. Voluntary consensus standards methods were not available for chlorophenolics by in-situ derivatization. EPA is therefore promulgating the new EPA Method 1653.

Dischargers are also required to monitor for 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (dioxin; TCDD; 2,3,7,8-TCDD), 2,3,7,8-tetrachlorodibenzofuran (TCDF;

the federal requirements imposed by today's final rules. In large part, the private sector, not other governments, will incur the costs. Specifically, the costs of this federal mandate are compliance costs to be borne by the regulated pulp and paper mills. In addition, although some States and local governments will incur costs to implement the standards, these costs to governments will not exceed the thresholds established by UMRA. The final rules are not expected to result in significant or unique impacts to small governments; the requirements are consistent with established and already-operating implementation programs.

EPA estimates that the total annualized costs for the private sector to comply with the federal mandate are $351 million (pre-tax)/$229 million (post-tax). The mandate's benefits are primarily in the areas of reduced health risks and improved air and water quality. The Economic Analysis (DCN 14649) describes, qualitatively, many such benefits. The analysis then quantifies a subset of the benefits and, for a subset of the quantified benefits, EPA monetizes (i.e., places a dollar value on) selected benefits. EPA's estimates of the monetized benefits for the final rules are in the range of $39 to $403 million.

EPA does not believe that there will be any disproportionate budgetary effects of the rules on any particular areas of the country, particular types of communities, or particular industry segments. EPA's basis for this finding is its analysis of economic impacts, which is summarized in Section VIII of the preamble and in the Economic Analysis (DCN 14649). A key feature of that analysis is the estimation of financial impacts for each facility incurring compliance costs. EPA considered the costs, impacts, and other effects for specific regions and individual communities, and found no disproportionate budgetary effects. Although these final rules apply only to one industry segment, EPA found no disproportionate budgetary effect. (The term segment as used in this context refers to the industrial category of pulp, paper, and paperboard, and not to individual subcategories within that category; it is used differently in other sections of this preamble.) The Economic Analysis (DCN 14649) also describes the rules' effect on the national economy in terms of effects on productivity, economic growth, and international competitiveness; EPA found such effects to be minimal. Although EPA has determined that these rules do not contain requirements that might significantly or uniquely affect any State, local, or tribal governments (see chapter 7), EPA consulted with State and local air and water pollution control officials. These consultations primarily pertained to implementation issues for States and local governments. EPA's evaluation of their comments is reflected in the final rules.

For each regulatory decision in today's rules, EPA has selected the "least costly, most cost effective, or least burdensome alternative" that was consistent with the requirements of the CAA and CWA. This satisfies section 205 of the UMRA. As part of this rulemaking, EPA had identified and considered a reasonable number of regulatory alternatives. Primarily, the regulatory alternatives are manufacturing processes, air emission controls, wastewater discharge controls, and other technologies. Many of the alternatives are described above in Section VI; others are described in supporting documents. The Agency's consideration of alternatives also included an incentives program to encourage bleached papergrade kraft and soda mills to commit to pollution prevention advances beyond the requirements of the federal mandate. See Section IX. The Agency's selection from among these alternatives is consistent with the requirements of UMRA, in terms of cost, cost-effectiveness, and burden. Several sections of the preamble are devoted to describing the Agency's rationale for each regulatory decision (e.g., Sections VI.B.5.a(5) and VI.B.6.b(2)).

Finally, EPA has considered the purpose and intent of the Unfunded Mandates Reform Act and has determined that these rules are needed, not only because of the significant pollutant reductions these rules will achieve, see Section VII, but also to satisfy EPA's obligations under the consent decree in *Environmental Defense Fund and Natural Wildlife Federation* v. *Thomas*, see Section II.C.1.a, and EPA's CAA obligations.

F. Pollution Prevention Act

In the Pollution Prevention Act of 1990 (42 U.S.C. 13101 *et seq.*, Public Law 101–508, November 5, 1990), Congress declared pollution prevention the national policy of the United States. The Pollution Prevention Act declares that pollution should be prevented or reduced whenever feasible; pollution that cannot be prevented or reduced should be recycled or reused in an environmentally safe manner wherever feasible; pollution that cannot be recycled should be treated; and disposal or release into the environment should be chosen only as a last resort.

Today's rules are consistent with this policy. As described in section VI, development of today's rules focused on the pollution-preventing technologies that some segments of the industry have already adopted. Thus, a critical component of the technology bases for today's effluent limitations guidelines and standards are process changes that eliminate or substantially reduce the formation of certain toxic chemicals. EPA also employs process changes as the technology basis for the emission standards.

G. Common Sense Initiative

On August 19, 1994, the Administrator established the Common Sense Initiative (CSI) Council in accordance with the Federal Advisory Committee Act (5 U.S.C. Appendix 2, Section 9 (c)) requirements. A principal goal of the CSI includes developing recommendations for optimal approaches to multimedia controls for industrial sectors including Petroleum Refining, Metal Plating and Finishing, Printing, Electronics and Computers, Auto Manufacturing, and Iron and Steel Manufacturing.

The Pulp and Paper regulations were not among the rulemaking efforts included in the Common Sense Initiative. However, many of the CSI objectives have been incorporated into these final rules, and the Agency intends to continue to pursue these objectives.

H. Executive Order 12875

To reduce the burden of federal regulations on States and small governments, the President issued Executive Order 12875 on October 28, 1993, entitled Enhancing the Intergovernmental Partnership (58 FR 58093). In particular, this executive order requires EPA to consult with representatives of affected State, local, or tribal governments. While these rules do not create mandates upon State, local, or tribal governments, EPA involved State and local governments in their development. Because this regulation imposes costs to the private sector in excess of $100 million, the EPA pursued the preparation of an unfunded mandates statement and the other requirements of the Unfunded Mandates Reform Act. The requirements are met as presented in the unfunded mandate s section above.

I. Executive Order 12898

Executive Order 12898 directs federal agencies to "determine whether their programs, policies, and activities have

provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., NW, Washington, DC 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence.

The effluent limitation guidelines and standards promulgated today contain two distinct information collection activities, i.e., specified monitoring requirements, see 40 CFR 430.02, and development of BMP plans and related monitoring, see 40 CFR 430.03(c)(4), (c)(5), (c)(10), (d), (e), (f), (g), (h) and (i)(4). EPA will seek approval of these information collection requirements from the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, as follows. EPA will seek to amend the NPDES Discharge Monitoring Report ICR No. 229, OMB approval number 2040–0004, expiration May 31, 1998, to add specified monitoring requirements for direct dischargers. EPA will seek to add the specified monitoring requirements for indirect dischargers by amending the National Pretreatment Program ICR No. 2, OMB approval number 2040–0009, prior to its expiration on October 31, 1999. EPA will seek approval of the Best Management Practices ICR No. 1829.01 for the requirements pertaining to BMP plans and associated monitoring. EPA's burden estimates for the BMP ICR are presented for comment in a document published elsewhere in today's **Federal Register**.

An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR parts 9 and 48 CFR chapter 15.

In addition, direct discharging mills continue to be required, under 40 CFR 122.21, to submit certain information as part of their application for an NPDES permit. Indirect discharging mills, in turn, must submit industrial user reports and periodic reports regarding compliance with categorical pretreatment standards under 40 CFR 403.12(b), (d), and (e). The effluent limitations guidelines and standards being promulgated today do not change those requirements. EPA notes that mills that describe their process as TCF or ECF under 40 CFR 122.21(g)(3) or 40 CFR 403.12(b), (d), or (e) as applicable, supply corroborating data if requested by the permitting authority under 40 CFR 122.21(g)(13), and comply with the signatory and certification requirements in 40 CFR 122.22 or 40 CFR 403.12(l) as applicable will be deemed to have certified their process as TCF or ECF. In addition, direct discharging mills that indicate under 40 CFR 122.21(g)(3) and (g)(13) their desire to participate in the Advanced Technology Incentives Program and comply with the signatory and certification requirements in 40 CFR 122.22 or 40 CFR 122.23, whichever is applicable, will be deemed to have enrolled in the Advanced Technology Incentives Program. In both cases, this information will determine the types of technology-based effluent limitations and standards and the types of monitoring requirements, if any, they will receive. OMB has approved the existing information collection requirements associated with NPDES discharge permit applications and industrial user reports under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* OMB has assigned OMB control number 2040–0086 to the NPDES permit application activity and OMB control numbers 2040–0009 and 2040–0150 to the reporting and certification requirements for industrial users. Nothing in today's rule changes the burden estimates for these ICRs.

All information submitted to the EPA for which a claim of confidentiality is made will be safeguarded according to the EPA policies set forth in Title 40, Chapter 1, Part 2, Subpart B—Confidentiality of Information (see 40 CFR part 2; 41 FR 36902, September 1, 1976; amended by 43 FR 39999, September 8, 1978; 43 FR 42241, September 28, 1978; 44 FR 17674, March 23, 1979).

E. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that today's final rules contain a Federal mandate that may result in expenditures of $100 million or more for the private sector in any one year. Accordingly, EPA has prepared the written statement required by section 202 of the UMRA. This statement is contained in the Economic Analysis for the rule (DCN 14649) and other support documents and is summarized below. In addition, EPA has determined that the rules contain no regulatory requirements that might significantly or uniquely affect small governments and therefore are not subject to the requirement of section 203 of the UMRA. The reasons for this finding are set forth below.

EPA prepared several supporting analyses for the final rules. Throughout this preamble and in those supporting analyses, EPA has responded to the UMRA section 202 requirements. Considerations with respect to costs, benefits, and regulatory alternatives are addressed in the Economic Analysis (DCN 14649), which is summarized in Section VIII of this preamble. A very brief summary follows.

The statutory authorities for these rules are found in section 112 of the CAA and multiple sections of the CWA (see Section I for a list). In part, these sections of the statutes authorize and direct EPA to issue regulations and standards to address air emissions and effluent discharges.

EPA prepared a qualitative and quantitative cost-benefit assessment of

When the costs of the CWA rule are considered in combination with the costs of the final CAA MACT I and MACT III rules, EPA's conclusion does not change. EPA's analysis showed that the combined costs of achieving compliance with the final air and water rules will not have a significant economic impact on a substantial number of small entities. As noted above, the CWA rule affects only four small entities. Further, the combined costs of the rules only exceeded one percent of revenues for one of the four small entities covered by both the final air and water rules, and for no small entity did it exceed three percent. Even though this is a small cost, because of the poor pre-existing economic conditions at one facility, EPA projects that one facility owned by one of the small firms may close as a result of the combined final CWA and CAA rules. EPA has determined that one closure is not a significant economic impact on a substantial number of small business concerns.

Though not required by the RFA, EPA also examined the costs of the final CWA rule in combination with the costs of the final MACT I and MACT III and proposed MACT II rules. EPA's analysis showed that the combined costs of achieving compliance with the final air and water rules and the proposed MACT II rule would not have a significant economic impact on a substantial number of small entities. As stated before, only four small entities would be affected. The combined cost of the rules would only exceed one percent of revenues for two small entities and for no small entity covered by both the final air and water rules and the proposed air rule would it exceed three percent. Even though this is a small cost, because of the poor pre-existing economic conditions at one facility, EPA projects that one facility owned by one of the small firms may close as a result of the final CWA and final and proposed CAA rules.

EPA's assessment of the impacts on small businesses subject to the final CAA rules yields similar results. EPA evaluated the impacts of the costs of the final MACT I and MACT III rules on small businesses. Of the companies affected by the two CAA rules, only 11 meet the SBA definition of "a small business concern." EPA does not believe this is a substantial number of small entities as that term is used in the RFA. EPA has also examined the extent of the impact on those 11 companies and finds that the costs of complying with the final MACT I rule and the final MACT III rule will not have a significant economic impact on a substantial number of small entities. In evaluating the costs of the rules relative to the company's annual revenues, EPA's analysis shows that no company is estimated to incur costs in excess of one percent of its revenues as a result of implementing the final MACT I and MACT III rules. As a consequence, EPA finds that the CAA rule does not have a significant economic impact on a substantial number of small entities.

When the costs of the final MACT I and MACT III rules are considered in combination with the costs of the final CWA rule, EPA's analysis shows that the combined costs of achieving compliance with the final air and water rules is still not a significant impact on a substantial number of small entities. As discussed, only 11 small business concerns must comply with the CAA rule. Of these, only four will experience additional costs due to the CWA rule. The combined costs of the rules only exceeded one percent of revenues for one small entity covered by both the air and water rules, and for no small entity did it exceed three percent. Even though this is a small cost, because of the poor pre-existing economic conditions at one facility, EPA projects that one facility owned by one of the small firms may close as a result of the combined final CWA and CAA rules.

Though not required by the RFA, EPA also assessed the cumulative economic effect on small entities if the proposed MACT rule is adopted. EPA's conclusion that costs to small entities are not great does not change when the costs of the final and proposed MACT rules are combined with the costs of the final CWA rule. The combined cost of the rules would only exceed one percent of revenues for two small entities covered by both the final air and water rules and the proposed air rule, and for no small entity would it exceed three percent. Even though this is a small cost, because of the poor pre-existing economic conditions at one facility, EPA projects that one facility owned by one of the small firms may close as a result of the combined final CWA and CAA rules.

D. Paperwork Reduction Act

The information collection requirements in the air emissions rules have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq*. An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1657.02), and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington, DC 20460 or by calling (202) 260–2740. The information requirements are not effective until OMB approves them.

The information required to be collected by the air emission rules is needed as part of the overall compliance and enforcement program. It is necessary to identify the regulated entities who are subject to the rule and ensure their compliance with the rule. The recordkeeping and reporting requirements are mandatory and are being established under section 114 of the Clean Air Act.

There are approximately 490 respondents that are potentially affected by the air emission rules. All 490 respondents must submit an initial applicability notification. Of the 490 affected respondents, there would be an estimated 155 respondents required to perform additional information collection. For the 155 respondents, this collection of information has an estimated total annual recordkeeping and reporting burden averaging 320 hours per respondent during the first three years after promulgation. For the 155 respondents, the average annualized cost of the reporting and recordkeeping burden per respondent is $29,600 for the first three years following promulgation.

The recordkeeping and reporting burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Specifically, the estimated 155 respondents must submit performance test notifications, statements of compliance, and semi-annual reports of monitored parameters. The 155 respondents must also conduct performance tests. If compliance exceedances occur, respondents must submit quarterly excess emissions reports. This information will be used to demonstrate compliance with the NESHAP.

Send comments on the Agency's need for this information, the accuracy of the

pplicable engineering standards and perational procedures are within ndustry norms. The decision whether o take such Advanced Technology nvestments into account in determining conomic benefit would be left to the State's discretion when the State is the nforcing authority. EPA will issue uidance to clarify application of this ncentive.

Mills also can take advantage of the ecently issued audit policy providing hey meet the criteria specified in that olicy. See 60 FR 66706 (Dec. 22, 1995).

C. Administrative Requirements and Related Government Acts or Initiatives

1. Dockets

The docket is an organized and omplete file of all the information ubmitted to or otherwise considered by EPA in the development of the final egulations. The principal purposes of he docket are: (1) To allow interested arties to readily identify and locate locuments so that they can intelligently and effectively participate in the rulemaking process; and (2) to serve as he record in case of judicial review, except for intra-agency review materials as provided for in section 307(d)(7)(A).

1. Air Dockets

Air Docket No. A–92–40 contains nformation considered by EPA in levelopment of the NESHAP for the hemical wood pulping mills. Air Docket No. A–95–31 contains information considered in developing the NESHAP for mechanical pulping processes, secondary fiber pulping processes, and nonwood fiber pulping processes. The Air Dockets are available for public inspection between 8 a.m. and 4 p.m., Monday through Friday except for Federal holidays, at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (MC–5102), 401 M Street SW, Washington, DC 20460; telephone: (202) 260–7548. The dockets are located at the above address in Room M–1500, Waterside Mall (ground floor). All comments received during the public comment period on the 1993 proposed NESHAP are contained in the Pulp and Paper Water Docket (see following paragraph for location). Comments received on the March 8, 1996, supplemental NESHAP notice at 61 FR 9383 are contained in Air Dockets A–92–40 and A–95–31.

2. Water Docket

The complete public record for the effluent limitations guidelines and standards rulemaking, including EPA's responses to comments received during the rulemaking, is available for review at EPA's Water Docket, Room M2616, 401 M Street SW, Washington, DC 20460. For access to Docket materials, call (202) 260–3027. The Docket staff requests that interested parties call between 9:00 am and 3:30 pm for an appointment before visiting the docket.

The EPA regulations at 40 CFR Part 2 provide that a reasonable fee may be charged for copying materials from the Air and Water Dockets.

EPA notes that many documents in the record supporting these final rules have been claimed as confidential business information (CBI) and, therefore, are not included in the record that is available to the public in the Air and Water Dockets. To support the rulemaking, EPA is presenting certain information in aggregated form or is masking facility identities to preserve confidentiality claims. Further, the Agency has withheld from disclosure some data not claimed as confidential business information because release of this information could indirectly reveal information claimed to be confidential.

B. Executive Order 12866 and OMB Review

Under Executive Order 12866, (58 *FR* 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that "is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order."

Pursuant to the terms of Executive Order 12866, it has been determined that the Cluster Rules are a "significant regulatory action" because they will have an annual effect on the economy of $100 million or more. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record.

C. Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA)

Under the Regulatory Flexibility Act (RFA), 5 U.S.C. 601 *et seq.*, as amended by SBREFA, EPA generally is required to conduct a regulatory flexibility analysis describing the impact of the rule on small entities. However, under section 605(b) of the RFA, EPA is not required to prepare the regulatory flexibility analysis if EPA certifies that the rule will not have a significant economic impact on a substantial number of small entities.

Pursuant to section 605(b) of the RFA, the Agency certifies that today's final CWA rule will not have a significant economic impact on a substantial number of small entities. In addition, EPA also finds that the final CAA rule will not have a significant economic impact on a substantial number of small entities. Small entities, as defined, include small businesses, small governments, and small organizations. This rulemaking does not affect small organizations. For small governments, these rules could directly affect administration or operating costs, but are not expected to result in significant impacts (see Section X.E.). Small businesses are the remaining class of small entity affected by this rulemaking. For small businesses, EPA examined the economic impacts of these rules in detail and the results of its analysis are found in the "Economic Analysis" (see DCN 14649). The following is a brief summary of the analysis.

Today's CWA final rule will not have a significant economic impact on a substantial number of small entities, because of those companies affected by the CWA rule, only four are "a small business concern" as defined by SBA regulations. (The RFA, in general, requires use of SBA definitions of small businesses; for this regulation, small businesses are defined as firms employing no more than 750 workers.) EPA does not believe this is a substantial number of small entities as that term is used in the RFA. Moreover, while all four small business concerns would experience increased costs of operation as a result of today's rule, the costs of complying with the rule are also not significant. As a measure of the economic impact of today's requirements on a small entity, EPA evaluated the costs of the rule relative to the company's annual revenues. The cost of the rule only exceeded one percent of revenues for one of the facilities and in no case did it exceed three percent.

CFR 430.02(d). Monitoring for AOX once per month would be permitted for Tier I ECF mills for four years beyond the completion of that one year period. See 40 CFR 430.02(e). Tier II ECF mills would be permitted to monitor for AOX once per quarter for four years beyond the completion of that one year period, and Tier III ECF mills would be permitted to monitor for AOX once per year for four years beyond the completion of that one year period. *Id.*

3. Reduced Inspections

EPA will issue guidance to EPA Regional Offices indicating that fiber lines enrolled in the Voluntary Advanced Technology Incentives Program and achieving Voluntary Advanced Technology BAT limitations or NSPS should be a lower priority than other NPDES facilities for routine inspections under the CWA. Under this incentive, the guidance would recommend that fiber lines achieving Tier I limits receive routine EPA inspections not more than once every two years; fiber lines achieving Tier II limits receive routine EPA inspections not more than twice every five years; and fiber lines achieving Tier III limits receive routine EPA inspections not more than once every five years. This incentive reflects EPA's view that mills installing and operating Advanced Technologies at levels to meet the appropriate tier effluent limitations and standards are likely to be complying with the other permit requirements applicable to that fiber line. Furthermore, the substantial reductions in pollutants and wastewater volumes discharged, particularly by mills achieving Tier II and Tier III limitations and standards, will have commensurately reduced environmental impacts. EPA already has redirected Federal NPDES inspections away from annual inspections of all major dischargers to focus on high risk facilities in priority watersheds. Targeted efforts in these priority watersheds focus on such factors as facility compliance status and rates, location and affected population, citizen complaints, etc. Nonetheless, under this incentive, EPA reserves the authority to conduct multi-media inspections without prior notice, and to inspect Advanced Technology fiber lines for cause, whether or not there is an ongoing violation. EPA also reserves its right to inspect an Advanced Technology mill in connection with specific watershed or airshed concerns.

4. Public Recognition Programs

EPA is pleased to have the opportunity to implement a program in which it can recognize facilities for voluntary activities that achieve further environmental improvements beyond those required by the baseline BAT limitations and NSPS promulgated today. EPA's intention is to provide for easily administered and meaningful public recognition for mills that participate in the Voluntary Advanced Technology Incentives Program. EPA will accord public recognition to mills when they formally enroll in the Program, when they achieve major interim milestones, and when they achieve the ultimate Tier performance requirements. The applicable state permitting authority also may choose to separately recognize a pulp and paper mill for its commitments and achievements toward further environmental improvements. The following paragraphs describe the steps for public recognition. EPA will issue additional guidance to facilitate implementation of this incentive.

a. Enrolling in the Voluntary Advanced Technology Incentives Program. Once a mill has enrolled in the Voluntary Advanced Technology Incentives Program, EPA will issue a letter to each facility acknowledging its participation and identifying the tier limits (and fiber line(s) as appropriate) to which the mill has committed. Each year EPA will publish a **Federal Register** notice identifying mills that have committed to the program within the previous year. The self-selected Tier will be clearly identified, as will any other pertinent information. The **Federal Register** notice will be made available on the EPA Internet web site.

b. Achievement of Milestones. Each time a mill achieves a major milestone (particularly those which achieve reduction in effluent pollutant loadings), EPA will recognize that mill in its annual **Federal Register** notice. In order to qualify for this recognition, each mill must notify its permitting authority and provide supporting monitoring data or other relevant documentation. The permitting authority may choose to visit the site for verification. EPA, in concert with the relevant state NPDES programs, also will then ascertain the status of Clean Water Act compliance and any other enforcement actions prior to public recognition activities. Any criminal enforcement activities, particularly convictions, also will be ascertained. This information on compliance and enforcement status will be available for consideration by EPA senior management prior to initiation of public recognition activities. Relevant information on enforcement and compliance status also may be shared as appropriate with senior management of state permitting agencies that initiate separate public recognition activities. Public recognition for achieving milestones will continue until the date participating mills are required to achieve the ultimate Tier performance requirements.

c. Achievement of Voluntary Advanced Technologies BAT Limitations or NSPS. Mills that achieve their Advanced Technology BAT Limitations or NSPS will notify the permitting authority and submit supporting monitoring data and other relevant documentation. The permitting authority will verify that the Advanced Technology BAT Limitations or NSPS have been achieved. The annual **Federal Register** notice will identify these facilities as reaching their goal. EPA also will participate in an award ceremony at an appropriate venue (e.g., TAPPI Environmental Conference).

5. Reduced Penalties

In recognition of the considerable capital expenditures that mills participating in the Voluntary Advanced Technology Incentives Program will make to implement Advanced Technologies and to achieve pollutant reductions superior to those achievable through the baseline BAT or NSPS, EPA will encourage enforcement authorities to take into account those investments as appropriate when assessing penalties against these mills for violations relating to those Advanced Technologies. Existing EPA settlement policies provide consideration of Advanced Technology investments in this manner. In EPA's view, if a facility has installed and is operating the Advanced Technology in good faith, reports violations in a prompt manner to EPA or the State, and either corrects the violations in a timely manner or agrees to and complies with reasonable remedial measures concurred on by the primary enforcement authority, then the enforcement authority would be justified in taking the Advanced Technology investment into account in determining economic benefit and in reducing the gravity portion of the penalty by up to 100 percent. Where the installation and operation of any Advanced Technology was more expensive than the installation and operation of the technology underlying the baseline BAT, the Advanced Technology facilities would derive no economic benefit (i.e., zero BEN) from the violation associated with the Advanced Technology. This would be the case even when the Advanced Technology fails, as long as the design, operation and installation are within

conclude that that permit is a lower priority for reissuance because the mill is voluntarily achieving reductions greater than otherwise required by the baseline BAT and hence presents a lower risk to water quality than other mills.

In its guidance, however, EPA will emphasize that an Advanced Technology NPDES permit should be administratively extended only if the permitting authority had provided the public with notice (the last time the permit was reissued) that it might choose to extend the permit administratively when it expires. Thus, EPA expects the permitting authority to notify the public as part of the preceding permitting process of the circumstances under which it would regard the Advanced Technology NPDES permit as a low priority for reissuance in the next permitting cycle. For example, EPA expects the permitting authority to inform the public that the permit probably would be administratively extended if the permittee has achieved all of its Advanced Technology limitations, if it has filed a timely permit application, and if the permitting authority possesses no new water quality or facility-related data that would justify new or different permit conditions and limits. In addition, EPA expects that the permit eligible for an administrative extension would contain BMPs and any water quality-based effluent limits necessary to achieve applicable water quality standards. Thus, EPA would not expect any adverse effect on the environment during the period the permit is administratively extended, in the absence of specific information indicating that more stringent water quality effluent limits need to be imposed.

The forthcoming guidance will also address the types of limitations an Advanced Technology NPDES permit should contain when it is reissued after achievement of the Tier limitations. As a threshold matter, the permitting authority will need to determine if there is a need for new or revised water quality-based effluent limitations. If there is none, EPA encourages permitting authorities to promptly reissue the NPDES permit with the existing water quality-based effluent limitations, if any, and the appropriate limitations found in 40 CFR Part 430. In some cases, the permitting authority may receive new facility- or watershed-specific information indicating that load reductions and, consequently, more stringent effluent limits on a pollutant in the mill's wastewater are necessary to achieve applicable water quality standards for that pollutant. Under these circumstances, EPA would urge states to develop priorities for allocating the necessary load reductions in a way that gives preference to Advanced Technology mills over all other Subpart B mills, particularly where Advanced Technology mills contribute a small portion of the total pollutant loads to the stream. Moreover, where more than one Advanced Technology mill discharges in a watershed, these priorities would further give preference first to Tier III mills, then to Tier II, and finally to Tier I mills.

2. Reduced Effluent Monitoring

EPA believes that reduced monitoring provisions are appropriate for ECF and TCF mills participating in the Voluntary Advanced Technology Incentives Program and is including them in the today's regulation for mills that achieve Voluntary Advanced Technology BAT Limitations or NSPS, as appropriate. See 40 CFR 430.02(c), (d) and (e). In EPA's view, consistent and successful implementation of the Advanced Technologies through ECF or TCF processes will make it increasingly less likely that the pollutants controlled by the baseline BAT will be present in the wastewater from Advanced Technology fiber lines in levels of concern. Because of these reductions and because monitoring for these pollutants tends to be costly, EPA believes it is reasonable to allow mills achieving the Voluntary Advanced Technology BAT limitations or NSPS through ECF or TCF processes to monitor less frequently for those pollutant parameters over time after establishing a reliable baseline of consistent achievement of those Advanced Technology BAT limitations or NSPS. See 40 CFR 430.02(c)–(e). To qualify for a monitoring incentive, the mill must certify that the fiber line is TCF or Advanced ECF either as part of their permit application or as part of a report of progress on compliance with milestones established to achieve their ultimate Tier limits. 40 CFR 430.02(c).

No monitoring incentive is available for kappa number or flow because no minimum monitoring frequencies are being established by this regulation. EPA encourages permitting authorities to consider factors such as the reliability of the Advanced Technology to consistently achieve or exceed the applicable limitations and performance variability in establishing monitoring frequencies for kappa number and flow on a best professional judgment basis.

The monitoring incentive for AOX applies only when the entire mill is ECF or TCF. See 40 CFR 430.02(c) and (d). Since compliance with AOX most likely will be determined at the end of the pipe, the monitoring requirement would be governed by the fiber line for which most frequent monitoring is required.

EPA retains the authority to request or obtain specific information that may be needed to determine compliance with the requirements of this rule. Because monitoring relief is specified to be available by the date compliance is required, even if the limits have not been achieved, EPA anticipates that permitting authorities will exercise their Section 308 authority to extend more frequent monitoring for mills that do not achieve compliance with their limitations.

EPA relies on section 308(a) of the Clean Water Act for authority to promulgate this incentive. The reduced monitoring for this effluent limitations guideline incentive program is being incorporated in the *Code of Federal Regulations*, and is summarized as follows:

a. For TCF fiber lines under Tiers I, II, and III, no monitoring incentive is available because no existing TCF fiber line is subject to minimum monitoring frequencies established by this rule. See 40 CFR 430.02(a). EPA anticipates that permitting authorities will consider the monitoring for AOX being imposed on mills in comparable Tiers, and the additional assurance of compliance that TCF process technologies afford relative to AOX, in establishing monitoring frequencies on a best professional judgment basis. For mills that use TCF processes part of the time and ECF processes for the remainder, EPA would apply the reduced monitoring incentive applicable to an ECF process. See 40 CFR 430.02(c), (d) and (e).

b. For any fiber line enrolled under Tier I, II, or III for which the mill certifies in its NPDES permit application or other communication to the permitting authority that it employs exclusively Advanced ECF technologies (i.e., extended delignification or other technologies that achieve at least the Tier I performance levels specified in Section 430.24(b)(4)(i)), the minimum monitoring requirements for dioxin, furan, chloroform and the 12 chlorinated phenolic pollutants will be suspended after one year of monitoring following achievement of those limitations and standards. See 40 CFR 430.02(c). (These limitations and standards must be achieved no later than April 15, 2004. See 40 CFR 430.24(b)(3).) For AOX, a certifying Advanced ECF mill also would be permitted to perform weekly instead of daily monitoring for one year after achievement of the ultimate Tier BAT limit or NSPS for that pollutant. See 40

promulgate Voluntary Advanced Technology BAT limitations that are phased in over time, so that a direct discharger at all times is subject to and must comply immediately with the particular BAT limitations applicable to them at any given point in time. Section 301(b)(2) provides no clear direction. EPA therefore is charged with making a reasonable interpretation of the statute to fill the gap. *See Chevron, U.S.A., Inc.* v. *NRDC,* 467 U.S. at 843–44. EPA believes that subjecting mills who voluntarily enroll in the Voluntary Advance Technology Incentives Program to progressively more stringent BAT limitations over time best serves Congress' intent of pushing mills to achieve reasonable further progress toward eliminating all pollutant discharges. It also ensures that mills achieve these superior performance requirements at a pace that makes technical and economic sense. Finally, by phasing in these highly stringent—but elected—controls, EPA hopes to encourage more mills to surpass the BAT baseline, with the result that the environment realizes a far greater improvement than EPA could expect to see without this phased approach. For these reasons, EPA believes it is entitled to deference in its decision to promulgate Voluntary Advanced Technology BAT limits in this manner.

Several commenters supported the idea of phasing in compliance with BAT limitations for the purpose of minimizing short-term economic impacts on mills, but urged EPA to adopt this approach to set baseline BAT limits based on the model Tier I Advanced Technology (i.e., BAT Option B). In other words, these commenters argued that more stringent baseline BAT limits based on the Tier I technology would be economically achievable for the entire subcategory because affected mills would have five years to achieve full compliance. As noted above, EPA agrees that The Advanced Technologies that are not economically achievable at present can become economically achievable for individual mills that voluntarily participate as time passes. Indeed, Congress recognized as much in requiring EPA to review its effluent guidelines and to revise them as appropriate. See CWA section 304(b). However, EPA disagrees that it currently has sufficient basis on the record available today to compel all mills in the Bleached Papergrade Kraft and Soda subcategory to meet the more stringent limits five years from now. In this rulemaking, the economic achievability of those more stringent (Tier I) limits is determined by the voluntary investment decisions of the affected mills; because of the voluntary nature of the Advanced Technology Incentives Program, it is the mills, not EPA, that determine that particular Advanced Technologies are available and economically achievable for them within the time frames provided in this program. In order for EPA to impose Advanced Technology limits on the entire subcategory as the commenter suggests, EPA would need to find adequate support in the rulemaking record today that compulsory BAT limits will be economically achievable for their entire subcategory five years from now. EPA cannot make that determination based on the information available today. At best, EPA could only speculate whether some or all of the mills projected to sustain the most severe economic impacts if BAT Option B is selected would be able to avoid those impacts if compliance with that BAT is deferred. EPA does not believe that this type of speculation is a sufficient basis for compelling compliance with BAT limits that are not economically achievable today for the subcategory as a whole. Moreover, when EPA estimated the effects of deferring compliance, subcategory-wide, for five years in response to these comments, EPA concluded that the projected impacts were such that, even then, BAT Option B would not be economically achievable for the subcategory as a whole. See Section VI.B.5.a(5). For these reasons, EPA concludes that it does not have a sufficient record basis today to make Tier I (or BAT Option B) limitations the compulsory baseline BAT even if such limits would not be effective until 2002. See DCN 14392, and CBI documents DCN 14390 and DCN 14391.

EPA could have accomplished the same results in this rulemaking simply by deferring the effective dates of the ultimate Advanced Technology performance objectives until the dates specified in the rule for achievement of the "stage 2" limitations. EPA has the legal authority to defer the effective dates of the "stage 2" portion of the Advanced Technology BAT limitations in this manner. Subject to the minimum delays imposed by the APA, 5 U.S.C. § 553(d), and the Small Business Regulatory Enforcement Fairness Act (SBREFA), 5 U.S.C. § 801, EPA has inherent authority to determine the effective date of a rule and to defer the effective date in appropriate cases. *See ASG Industries, Inc.* v. *Consumer Products Safety Comm'n,* 593 F.2d 1323, 1335 (D.C. Cir. 1979). Nothing in the Clean Water Act limits this authority with respect to BAT effluent limitations guidelines. In contrast to section 306(b)(1)(B), where Congress explicitly stated that new source performance standards, "or revisions thereof, shall become effective upon promulgation," the CWA is silent regarding the effective date of BAT effluent limitations guidelines. Having failed to prescribe when BAT guidelines become effective, Congress therefore has delegated to the Agency the authority to choose the appropriate effective date of the BAT effluent guideline limitations it promulgates, so long as the Agency's choice is consistent with the goals and purposes of the Act. *See Chevron, U.S.A., Inc.* v. *NRDC,* 467 U.S. at 843–44, 861. Under this approach, the "stage 1" limitations would be effective immediately, and the "stage 2" limitations would become effective by the dates specified in the regulation.

B. Incentives Available After Achievement of Advanced Technology BAT Limitations and NSPS

1. Greater Certainty Regarding Permit Limits and Requirements

Industry stakeholders have suggested to EPA that mills could be encouraged to implement advanced technologies if they had a reasonable assurance that all limitations and conditions in their permits would remain constant over a specified period of time, once compliance with the Advanced Technology limits and standards is achieved.

Under this incentive, EPA will issue guidance to states regarding the reissuance of NPDES permits held by mills that achieve all of their Advanced Technology BAT limitations or NSPS. (EPA notes that new sources that accept permit limitations based on, and commence operation in compliance with, Tier II or Tier III NSPS automatically possess a shield against more stringent standards of performance for ten years from the completion of construction.)

In its forthcoming guidance, EPA will address the timing of reissuing Advanced Technology NPDES permits and the limitations those reissued permits should contain. Regarding the reissuance of Advanced Technology NPDES permits, EPA believes that permitting authorities could reasonably conclude that an Advanced Technology NPDES permit held by a mill meeting all of its Tier limits is a low priority for permit reissuance, if there is no new water quality- or facility-related data or information that would justify new or different limits. Under these circumstances, EPA believes it would be reasonable for a permitting authority to

successively more stringent, enforceable permit limits—do so with the knowledge that they have the economic as well as technical ability to meet those limits. Second, the experience of other mills that voluntarily undertook major pollution prevention projects informs EPA that the ambitious performance requirements are indeed achievable for participating mills if the incremental improvements are staggered over time.

This incremental approach is authorized by CWA section 301(b)(2)(A), which expressly requires BAT to result in reasonable further progress toward the national goal of eliminating pollutant discharges. EPA believes that each of the steps comprising the three tiers of Voluntary Advanced Technology BAT Limitations moves participating mills toward that national goal. Once a mill enrolls in the Voluntary Advanced Technology Incentives Program, it accepts and must begin immediately to implement a BAT package consisting of successively more stringent permit limits and conditions. Although environmental improvements are realized only incrementally, the mill is subject to the total set of limits—including the ultimate performance requirements—as soon as its Advanced Technology permit is written based on the first increment of that BAT package. Thus, the mill is continuously subject to and must comply immediately with the Advanced Technology BAT package as it progressively unfolds, including each interim BAT limitation or permit condition representing that progress.

EPA's promulgation of BAT as a package of progressively more stringent limitations and conditions is also consistent with the use of BAT as a "beacon to show what is possible." *Kennecott* v. *EPA*, 780 F.2d 445, 448 (4th Cir. 1985). Thus, while the compulsory BAT in this rule functions as the "base level" for the subcategory as a whole, *see E.I. du Pont de Nemours & Co.* v. *Train*, 430 U.S. 112, 129 (1977), EPA expects the Voluntary Advanced Technology BAT limitations to drive technologies and mills beyond that base level toward achievement of the goals of the Clean Water Act. By holding out the Advanced Technologies as beacons of progress, EPA believes that today's rule will encourage more mills to strive toward EPA's pollution prevention and reduced flow objectives than might otherwise do so if EPA promulgated nothing more than a "base level" BAT. Moreover, by codifying progressively more stringent limitations in today's Advanced Technology BAT package, EPA promotes a form of technological progress that is consistent with Congressional intent that BAT should aspire to "increasingly higher levels of control." *See, e.g.*, Statement of Sen. Muskie (Oct. 4, 1972), *reprinted in* A Legislative History of the Water Pollution Control Act Amendments of 1972 ("1972 Leg. Hist."), at 170. It is also consistent with the overall goals of the Act. *See* CWA Section 101(a). Agencies have considerable discretion to interpret their statutes to promote Congressional objectives. "'[T]he breadth of agency discretion is, if anything, at zenith when the action * * * relates primarily to * * * the fashioning of policies, remedies and sanctions, including enforcement and voluntary compliance programs[,] in order to arrive at maximum effectuation of Congressional objectives.'" *U.S. Steelworkers of America* v. *Marshall*, 647 F.2d 1189, 1230–31 n.64 (D.C. Cir. 1980) (upholding OSHA rule staggering lead requirements over 10 years) (quoting *Niagara Mohawk Power Corp.* v. *FPC*, 379 F.2d 153, 159 (D.C. Cir. 1967)), *cert. denied*, 453 U.S. 9113 (1981). In this case, the codification of progressively more stringent BAT limitations advances not only the general goal of the Clean Water Act, but also the explicit goal of the BAT program. *See Chevron, U.S.A., Inc.* v. *NRDC*, 467 U.S. 837, 843–44 (1984).

Moving toward the elimination of pollutant discharges in stages is also consistent with overarching structure of the effluent limitations guidelines program. Congress originally envisioned that the sequence of attaining BPT limits in 1977 and BAT limits in 1983 would result in "levels of control which approach and achieve the elimination of the discharge of pollutants." Statement of Sen. Muskie (Oct. 4, 1972), *reprinted in* 1972 Legislative History, at 170. This two-step approach produced dramatic improvements in water quality, but did not achieve the elimination of pollutant discharges. Therefore, EPA periodically revisits and revises its effluent limitations guidelines with the intention each time of making further progress toward the national goal. (This is the sixth effluent limitations guideline promulgated for the pulp and paper industry, and the fourth applicable to bleached papergrade kraft and soda mills.) Achieving these incremental improvements through successive rulemakings carries a substantial cost, however. The effluent guideline rulemaking process is highly complex, in large part because of the massive record compiled to inform the Agency's decisions and because of the substantial costs associated with achieving each additional increment of environmental improvement. By promulgating these Voluntary Advanced Technology BAT limitations today as a package of incremental environmental improvements, EPA hopes to achieve the goals that Congress envisioned for the BAT program at considerably less cost: one rulemaking that looks both at the present and well into the future. Mills willing to surpass today's compulsory BAT requirements have a framework to anticipate what could be tomorrow's subcategory-wide BAT and to make today's environmental, financial and engineering judgments accordingly. Thus, the three-tiered incentives program itself represents reasonable further progress toward the goal of eliminating pollutant discharges. At the same time, within each Tier, mills must make incremental improvements that also represent reasonable further progress toward that national goal. In short, each BAT increment, whether in the form of the Tiers themselves or the progressively more stringent limitations comprising them, gives contemporary meaning to the staging process originally envisioned by Congress as the means to achieve the goal of eliminating discharge of pollutants to the Nation's waters.

Finally, like other agencies, EPA has inherent authority to phase in regulatory requirements in appropriate cases. EPA has employed this authority in other contexts. For example, EPA recently phased in, over two years, TSCA rules pertaining to lead-based paint activities. *See* 40 CFR 746.239 and 61 FR 45788, 45803 (Aug. 29, 1996). Similarly, the Occupational Safety and Health Administration phased in, over 10 years, a series of progressively more stringent lead-related controls. See 29 CFR 1910.1025 (1979 ed.). Indeed, in upholding that rule, the U.S. Court of Appeals for the D.C. Circuit noted that "the extremely remote deadline at which the [sources] are to meet the final [permissible exposure limits] is perhaps the single most important factor supporting the feasibility of the standard." *United Steelworkers of America* v. *Marshall*, 647 F.2d at 1278.

EPA is aware that CWA sections 301(b)(2)(C) & (D) require BAT limits to be achieved "in no case later than three years after the date such limits are promulgated under section 304(b), and in no case later than March 31, 1989." (Section 301(b)(2)(F), which refers to BAT limitations for nonconventional pollutants, also contains the March 31, 1989 date, but uses as its starting point the date the limitations are "established.") This language does not speak to the precise question EPA confronts here: whether EPA can

capital costs involved and in view of possible uncertainties regarding the availability of appropriate cost-effective technologies and a mill's ability to maintain product quality. Accordingly, EPA expects the decision would need to be made at the corporate rather than the facility level, which would probably require corporate-wide consideration of the firm's financial health, its environmental objectives and future marketing strategies, and its overall long-term plans. Because EPA believes that many firms in Subpart B have been pondering these strategic questions since publication of the proposed rule in December 1993 and the notice regarding a possible incentives program in July 1996, EPA has concluded that one year is sufficient to allow firms to make a decision whether to participate in the Voluntary Advanced Technology Incentives Program. If a mill's permit expires and is reissued before April 15, 1999, the permitting authority should incorporate Voluntary Advanced Technology BAT Limitations into that permit at the mill's request. If the mill has not yet decided whether to participate in the Voluntary Advanced Technology Incentives Program, the permit writer should incorporate BAT limitations based on the BAT baseline and should include a reopener clause so that the permit can be modified as necessary to reflect the mill's decision to participate in the incentives program. In order to afford that mill a full year to decide whether to enroll in the incentives program, EPA believes it would be appropriate for the permitting authority to issue a compliance order expiring April 15, 1999 so that the mill would not be required to comply with the baseline BAT limitations until after the election date has passed.

Some commenters suggested that EPA measure the Advanced Technology time periods from the date the first permit reflecting Voluntary Advanced Technology BAT limitations is issued. EPA rejected that approach and instead is measuring the time periods from the publication date of this rule (plus one year) for the following reasons. First, these timeframes reflect EPA's conclusions regarding the amount of time that mills would need in order to achieve the various Voluntary Advanced Technology Tier performance levels, once they have committed to those goals. As discussed in more detail above, EPA based these conclusions on record information concerning the availability of technologies and capital, among other factors. These factors have nothing to do with the permitting cycle. Second, as a matter of policy, EPA wants to promote implementation of advanced technologies as soon as possible; if EPA were to measure the Advanced Technology time periods from the date of permit re-issuance, achievement of the ultimate Tier I performance requirements and the interim baseline BAT limitations for Tiers II and III, for example, could be deferred at some mills by as much as ten years from the date of promulgation. Third, EPA was concerned that tying the Advanced Technology time periods to highly variable permit issuance dates would mean that mills with later permits would realize a competitive advantage over similarly situated mills that, merely because of their particular permit cycle, would need to achieve the Voluntary Advanced Technology BAT limitations sooner. Such inequities—whether perceived or real—could discourage some mills from participating in the Voluntary Advanced Technology Incentives Program. Finally, mills in the Bleached Papergrade Kraft and Soda subcategory have been on notice since at least 1993 that EPA was considering basing some portion of its Cluster Rules on extended delignification technologies. (In its 1993 proposal, EPA proposed to base BAT limitations on a process that included oxygen delignification and 100 percent substitution of chlorine dioxide for elemental chlorine.) In some cases, that proposal has already influenced investment decisions at some mills.

EPA acknowledges that a mill choosing not to participate in the Voluntary Advanced Technology Incentives Program could seek a compliance schedule in an enforcement order that, depending on the date its permit was reissued, could allow that mill to achieve BAT limits (including a less stringent AOX limit) at a later date than Tier I Advanced Technology mills would be required to achieve a more stringent AOX limit *and* reduced kappa numbers and pulping area filtrate recycling. While EPA agrees with comments characterizing this as unfair to those facilities making the significant commitment to install Advanced Technologies, EPA believes that the likelihood of such inequities is small for the following reasons. First, EPA has determined that this is likely to happen in comparatively few cases. More than 80 percent of the permits issued to mills in the Bleached Papergrade Kraft and Soda subcategory will expire before 2000. See Record section 21.8.1, DCN 14652. Consequently, EPA believes that most Advanced Technology mills will receive more time to achieve Tier I limits than other mills would receive to achieve baseline BAT limits, even with an enforcement compliance schedule. Second, when EPA is the permitting authority, EPA will exercise its enforcement discretion to refrain from issuing enforcement compliance schedules after April 15, 1999 to mills not participating in the Voluntary Advanced Technology Incentives Program. This means that a mill not participating in the Voluntary Advanced Technology Incentives Program would be expected to comply with its baseline BAT limits by the date its permit containing those limits is issued, or by *[April 15, 1999]*, whichever is later. EPA will also publish guidance urging State enforcement authorities to do the same. By limiting the discretionary enforcement-related compliance schedules available to baseline BAT mills, EPA hopes that the additional time periods specified for Advanced Technology mills will become a more meaningful incentive and perhaps may persuade some mills to participate in the incentives program rather than comply immediately with the baseline BAT limitations.

8. Legal Authority to Promulgate a Package of Progressively More Stringent Voluntary Advanced Technology BAT Limitations

As described in more detail above, the Advanced Technology BAT guidelines for each Tier consists of a range of successively more stringent limitations and permit conditions that represent a mill's progress toward the Tier's ultimate Advanced Technology performance requirements. Based on its analysis of today's advanced and, in some cases, innovative technologies and its judgment regarding the historically rapid advance of pollution prevention processes in this industry, EPA has determined that those performance requirements are achievable, as a technical matter, by the dates specified in each Tier, and that none of the other statutory factors in CWA Section 304(b)(2)(B) justify selecting different technology bases for Advanced Technology BAT. EPA has also determined that those Advanced Technology performance requirements are within the economic capability of mills choosing today to meet them and hence are economically achievable for those mills. EPA bases that determination primarily on two factors. First, no mill is compelled to enroll in the Voluntary Advanced Technology Incentives Program; accordingly, EPA assumes that mills that choose to enroll—and voluntarily subject themselves to a progression of

BAT limitations. The remaining additional time, calculated as 5 years for Tier I, 10 years for Tier II, and 15 years for Tier III, corresponds to the time EPA believes a mill would need in order to arrange its financing and to develop, install, test, and implement the chosen Advanced Technologies at full scale to comply with the ultimate tier limits.

EPA regards five years as a reasonable time frame to achieve the Voluntary Advanced Technology BAT limitations corresponding to Tier I (including the bleach plant BAT effluent limitations). When spread over five years, the capital costs of those technologies become more manageable (although they are still significantly higher than the capital costs associated with the baseline BAT). In addition, the five year period gives mills increased flexibility to schedule the significant capital investment within the mill's normal capital investment cycle, i.e., to purchase and install the necessary equipment when capital is available. Therefore, EPA believes the five year period will enable mills to participate in the Voluntary Advanced Technology Incentives Program that otherwise might not have the financial resources to make the necessary capital investment.

EPA regards ten years as a reasonable timeframe to achieve the Voluntary Advanced Technology BAT limitations corresponding to Tier II because the development and implementation of technologies to reduce bleach plant flow to 10 m^3/kkg pose technical and economic difficulties that EPA believes would take mills up to ten years to resolve. (Once flow levels are reduced, EPA expects that mills also will be able to achieve the Tier II AOX limitations.) Recycling a substantial portion of pulping and evaporator condensates and bleach plant filtrates, with the attendant complexities of total mill water, chemical, and energy balances, requires considerable time before it can be implemented successfully at mill-scale. For example, when bleach plant filtrates are recycled, problems with scale and corrosion can take many months to over a year to develop and be observed. Once identified, fully correcting such problems can take significant additional time because of the time lag between action and observed effect in nearly closed systems. In addition to problems with scale and corrosion, mills pursuing Tier II performance levels may have to solve challenges associated with reusing condensates, such as for bleached pulp washing. There are a few mills currently doing this, but not broad operating experience. Consequently, EPA expects that Tier II mills will need to invest considerable time and effort to research and develop solutions to those technical problems. In addition to these technical challenges, significant capital costs may be involved in achieving Tier II limits, notably as a result of upgrading full pulping and bleaching lines and associated evaporator equipment. Providing an extended timeframe that allows a mill to make such capital expenditures on a schedule consistent with its planned investment cycle can make such large investments economically achievable. For example, one U.S. mill currently approaching the Tier II flow and AOX levels installed many of the relevant technologies in stages over what probably will be a ten-year period, with the last three years used for testing and fine-tuning its reduced flow processes. Yet even this mill still needs to address the technical challenges of further reducing condensate discharge flow before it is fully able to achieve the Tier II BAT limits. That mill needed ten years to plan its multi-hundred million dollar renovation and pollution prevention investment, to arrange appropriate financing, to install supporting technologies at appropriate intervals and to research, develop, test, and refine its innovative flow-reducing processes. EPA believes that this mill's experience is representative of what other Tier II mills may encounter as they work to achieve the Tier II limitations. See the Voluntary Advanced Technology Incentives Program Technical Support Document (DCN 14488) for additional examples of why the ten-year timeframe is appropriate. Based on these experiences, EPA believes that the package of technologies underlying the Tier II Voluntary Advanced Technology BAT limitations will not be technically and economically achievable for mills aspiring to those performance levels until April 15, 2009. However, EPA believes that mills will be able to achieve the baseline BAT limitations by April 15, 2004, and enforceable interim milestones reflecting intermediate levels of flow reduction (determined on a case-by-case basis) in a period shorter than eleven years.

EPA regards 15 years as a reasonable timeframe to achieve the Voluntary Advanced Technology BAT Limitations corresponding to Tier III. As for Tier II, flow reduction again is the most difficult and time-consuming task. However, because reducing flow for pulping and evaporator condensates and bleach plant filtrates to 5 m^3/kkg or even lower approaches a closed mill configuration, even more technically difficult and time-consuming tasks must be successfully completed, necessitating five additional years beyond the Tier II timeframe. For example, mills would probably need to install "kidney" technologies to remove metals and chlorides in order to control system scaling and corrosion problems while maintaining product quality and minimizing cross-media impacts. Successful completion of these tasks at individual mills may involve research, extensive process development, and mill trials. The types of corrosion and scaling problems EPA anticipates could take over a year of nearly closed-loop operation to identify and several more years of experimental modifications to mill operations to solve. Extensive time is required for such modifications because of the time lag in nearly closed-mill systems from changing process conditions and observing the steady state impact on hydraulic systems, liquor systems, and associated mill equipment. Mills may also need to embark on process development and mill trials to achieve treated condensate quality that is sufficient to extensively reuse condensates, as well as to reestablish complex mill water and energy balances. For these reasons, EPA believes that 15 years is a reasonable amount of time for a Tier III mill to perfect existing technologies or invent or develop new ones as necessary to achieve the Tier III performance levels. However, EPA believes that all mills will be able to achieve the baseline BAT limitations by *[April 15, 2004]*, and enforceable interim milestones reflecting intermediate levels of flow reduction (determined on a case-by-case basis) in a period shorter than 15 years.

In short, EPA believes that the additional 5, 10 and 15 year periods provided by the rule are necessary to foster investment, research, development, and mill trials of Advanced Technologies envisioned by the specified performance levels. EPA further believes that, by the dates specified in the rule, technologies necessary to achieve those performance levels will indeed be available. See DCN 14488.

EPA has concluded that it is reasonable to measure the extended time periods from the publication date of the Cluster Rules rather than from the date a participating mill's NPDES permit is issued, with the addition of one year at the beginning to afford mills a meaningful opportunity to consider participating in the Voluntary Advanced Technology Incentives Program. EPA recognizes that the decision whether to commit to the Advanced Technology goals cannot be undertaken lightly. This is especially so in view of the significant

memorialize that choice in the form of enforceable permit limits.

Although applied here for the first time to codify a Voluntary Advanced Technology Incentives Program, the notion of using segmentation to determine applicable technology-based limitations is not new. Indeed, effluent limitations guidelines and standards routinely base applicability of technology-based limitations on a discharger's particular process or treatment technologies. For example, elsewhere in today's rule EPA is segmenting the Papergrade Sulfite subcategory to reflect, among other things, the type of product the mill produces. Thus, a papergrade sulfite mill choosing to produce specialty products subjects itself to a different set of limitations than other mills in its subcategory simply by making that business decision. EPA also used segmentation to account for different treatment configurations when it promulgated BAT for the organic chemicals, plastics and synthetic fibers category. *See* 40 CFR 414.91, 414.101; 58 FR 36872, 36881–85 (July 9, 1993). In that rule, EPA established two sets of BAT limitations for a subcategory of plants, one set applicable to plants using end-of-pipe biological treatment and the other set applicable to plants using some other treatment technology, including in-plant waste management practices. In this rule, the Advanced Technology segments are intended to anticipate a mill's business decision to change its cooking, washing, bleaching, wastewater recycle, and recovery processes to achieve greater pollutant reductions than EPA can require as baseline BAT. Indeed, by establishing these segments, EPA hopes to encourage many mills to choose Advanced Technologies, especially those mills that would need to change their bleaching and washing processes in any event to comply with the baseline BAT.

EPA also notes that it could have accomplished the same result for existing sources on a case-by-case basis through the Clean Water Act's variance processes. *See Chemical Mrfs. Ass'n* v. *NRDC*, 470 U.S. at 130, 105 S.Ct at 1110. Advanced Technology mills could have sought fundamentally different factors variances under CWA section 301(n); for non-conventional pollutants, these mills could have pursued a variance under section 301(c). Under either section, mills could have obtained BAT effluent limitations that are more or less stringent than the baseline BAT. *See Chemical Mrfs. Ass'n* v. *NRDC*, 470 U.S. at 116, 105 S.Ct at 1105–06 (FDF variances); *EPA* v. *National Crushed Stone Ass'n*, 449 U.S. 64, 79 n.18 (1980) (§ 301(c) variances). However, EPA rejected implementing the Voluntary Advanced Technology Incentives Program through variances for several reasons. First, the Clean Water Act and its legislative history indicate a clear Congressional preference for the use of subcategories, rather than variances, to address discernible differences among regulated entities. By requiring applications for FDF variances to be based on information submitted during the rulemaking process (unless the applicant lacked a reasonable opportunity to make such submission), *see* section 301(n)(1)(B), Congress stressed the need for companies to participate fully in the guideline development process to assure that adequate information is available to EPA to develop appropriate subcategories. *See* 131 Cong. Rec. S 8013 (June 12, 1985) (Sen. Bentsen); *see also* 133 Cong. Rec. H 131, 136–37 (Jan. 7, 1987) (Rep. Howard) (provision assures that effluent guidelines "are as comprehensive as possible"); 133 Cong. Rec. S 733, 739 (Jan. 14, 1987) (Sen. Mitchell) (EPA should accommodate fundamental differences among facilities through the establishment of subcategories). In this rulemaking, many commenters supplied vast amounts of information concerning the special circumstances of facilities aspiring to become minimum impact mills. As Congress intended, EPA established the three Voluntary Advanced Technology segments in response to that information rather than deferring consideration of the issue to the post-rulemaking variance process.

Second, as a matter of policy, EPA believes it is reasonable to employ its subcategorization, rather than its variance, authority to implement the Voluntary Advanced Technology Incentives Program. By establishing the Voluntary Advanced Technology BAT limitations by rulemaking at the same time it codifies the baseline BAT limitations, EPA intends to provide all direct discharging mills within Subpart B the immediate opportunity to push beyond base level environmental performance and also to provide with certainty regarding the stringency and timing of the limits they would be expected to meet. In this way, EPA hopes to encourage many mills to participate in the program. Use of case-by-case variance procedures, in contrast, would introduce delay and uncertainty into the process, which EPA believes would discourage industry participation.

In summary, EPA has discretion in determining whether to account for industry characteristics through subcategorization or through the variance process. Like variances, the Voluntary Advanced Technology segments apply only to mills that on their own initiative seek different BAT limitations. Unlike variances, however, the subcategorization scheme promulgated by EPA assures consistent and timely implementation of the Voluntary Advanced Technology Incentives Program, which EPA believes is critical to its success. Therefore, for the reasons explained, EPA's decision to subcategorize Subpart B was rational and within its discretion.

7. Time Frames for Achieving Voluntary Advanced Technology BAT Limitations

In order to promote the pollution prevention objectives of the Voluntary Advanced Technology Incentives Program, EPA has determined that existing mills choosing to participate in that program should receive a reasonable amount of time to achieve the Advanced Tier performance levels they select. See 40 CFR 430.24(b)(4)(ii). (These performance levels are codified in this rule as "stage 2" BAT limitations.) The extended timeframes discussed below are not available for new sources enrolled in the Advanced Technology Incentives Program because the Clean Water Act requires new sources to comply with applicable NSPS upon commencing operation. CWA Section 306(e). However, new sources interested in participating in the Voluntary Advanced Technology Incentives Program after commencing operation may nevertheless do so, for example, by achieving the baseline NSPS requirements at the time discharges commence and later installing additional technologies necessary to achieve the more stringent AOX and flow requirements of Tiers II or III. Once limitations equivalent to the selected advanced Tier performance levels are placed in the mill's permit and the mill achieves those limits, it is eligible to receive the regulatory and enforcement relief described as incentives in Section IX.B. below.

EPA has determined that reasonable dates by which existing sources can achieve Advanced Technology performance requirements are *[April 15, 2004]* for Tier I, April 15, 2009 for Tier II, and April 15, 2014 for Tier III. See 40 CFR 430.24(b)(4)(ii). As discussed in more detail below, these dates assume an initial start-up year during which mills subject to Subpart B would decide whether to enroll in the Voluntary Advanced Technology Incentives Program and develop a plan for complying with the ultimate incentives

processes they will need to meet their long-term Advanced Technology objectives. Therefore, EPA has decided to promulgate all of the Voluntary Advanced Technology BAT limitations today in order to provide mills with an opportunity to push their environmental performance beyond the minimum prescribed by the baseline BAT and on toward the statutory goal of zero discharge. Promulgating the various Voluntary Advanced Technology Tiers today rather than in five-year increments also provides some predictability regarding the progress expected of Advanced Technology mills over time. EPA hopes that this predictability will encourage greater participation in the program and thus lead to superior effluent quality. Finally, promulgating all three Tiers of Advanced Technology BAT Limitations today makes sense because it reflects EPA's regulatory approach for promoting successively greater environmental achievements for this industry, and because companies willing to commit to achieve the increased environmental controls will be able to avoid the uncertainties inherent in a succession of later rulemakings.

EPA has the authority to promulgate the three Tiers of Voluntary Advanced Technology BAT limitations today even though their ultimate performance requirements will not be attained until a future date. EPA has the authority under CWA section 304(b)(2) and 304(m) to revise the baseline BAT limitations for the Bleached Papergrade Kraft and Soda subcategory whenever the Administrator deems it is appropriate. Thus, EPA would be free in 5, 10 or 15 years to codify the Voluntary Advanced Technology limitations as BAT. However, by then, mills potentially interested in pursuing Advanced Technologies would already have been required to meet baseline BAT limitations, perhaps using technologies not fully compatible with more advanced processes. The costs of retrofitting, or in some cases replacing, newly installed process technologies to achieve more stringent limits might prevent EPA from finding that these technologies are economically achievable. In addition, participating mills would lose a long-term planning horizon, which is very important because of the significant capital outlays involved. As a result, EPA was concerned that failure to promulgate these Voluntary Advanced Technology BAT limitations today might compromise future pollution prevention opportunities. EPA is authorized to consider those opportunities when promulgating BAT limitations. EPA therefore believes it is appropriate to consider these barriers to pollution prevention as factors relevant to the definition of BAT limitations and the timing of their promulgation, see CWA section 304(b)(2)(B); especially since failure to promulgate a Voluntary Advanced Technology Incentives Program at this time might impede reasonable further progress toward the national goal of eliminating discharges of all pollutants. *See* CWA section 301(b)(2).

An important component of this incentives program is the element of choice. Direct discharging mills subject to Subpart B may choose whether to enroll in the program and, once enrolled, may choose the Tier, or performance level, that they will achieve. In order to codify this structure, EPA has promulgated three sets of Voluntary Advanced Technology BAT limitations for bleached papergrade kraft and soda mills and two sets of NSPS in addition to the baseline BAT and NSPS. In effect, EPA has divided Subpart B into segments based on the types of bleach plant processes mills choose to employ. EPA has considerable authority to establish segments within an industrial subcategory for the purpose of promulgating BAT limitations unique to those mills. Much like mill-specific variances based on fundamentally different factors, segments reflect EPA's authority to take into account the diversity within each industry. See *Chemical Mrfs. Ass'n* v. *NRDC*, 470 U.S. 116, 130, 105 S.Ct 1102, 1110 (1985). Thus, segmentation, like variances, is not an exception to the standard-setting process, but rather a more fine-tuned application of it. *Id.*

For BAT, EPA has essentially established four segments for the Bleached Papergrade Kraft and Soda subcategory (and, similarly, three segments for NSPS). One segment codifies the baseline BAT limitations; the other three segments codify Tiers I, II and III of the Voluntary Advanced Technology BAT Incentives Program. EPA defined the Advanced Technology segments to reflect the various types of process changes and control techniques that mills might employ to achieve environmental performance beyond the baseline BAT level. The Advanced Technology segments also reflect the cost of achieving progressively greater environmental effluent reductions. Any one of those factors is sufficient under CWA section 304(b)(2) to justify a segment for affected mills. Each mill in Subpart B must comply with the baseline BAT limitations unless it designates itself as an Advanced Technology mill, in which case it must meet the BAT limitations corresponding to the Tier—and segment—it chooses.

Although EPA has identified an array of process changes that, if employed, could distinguish one Subpart B mill from another and has based its Advanced Technology limitations on those potential changes, EPA has made the Advanced Technology segments voluntary. This is because the decision whether Advanced Technology process changes are technically feasible and economically achievable for a particular mill depends on many factors unique to the mill that EPA, on the record available today, cannot readily discern or forecast. Among the more significant factors appear to be the mill's current bleaching sequence, the physical configuration of equipment, the age of equipment (and, thus, end-of-life issues), the available capacity in chlorine dioxide generation and in the recovery boiler, and whether the mill uses hardwood or softwood. See DCN 14488. *See* also Paper Task Force, Technical Supplement White Papers, Record section 20.2.8, DCN 14794, DCN 14795, and DCN 14796.

EPA also has important policy reasons for making the Advanced Technology BAT limitations voluntary, both in terms of the decision to participate and in terms of the level of environmental performance to be achieved. As discussed in greater detail above, EPA believes that mills willing and able to employ technologies and processes superior to the "baseline" promulgated as BAT—and willing to guarantee that effort in the form of enforceable technology-based permit limitations—should have the opportunity to do so. By giving mills a choice to exceed baseline compliance levels, EPA implements CWA section 301(b)(2)'s direction that BAT limitations "result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants," to the extent consistent with EPA's findings of economic achievability, among other factors. By allowing mills to choose between baseline BAT limitations and Voluntary Advanced Technology BAT limitations at the outset, EPA also wants to encourage mills to consider all possible process configurations before investing in the baseline BAT technology. Thus, by codifying multiple expressions of BAT, EPA has established a regulatory mechanism that allows mills to choose greater environmental performance than EPA could require on this record and also authorizes permit writers to

As part of its BAT analysis, EPA performed a case-study analysis to determine the potential effluent reduction benefits derived from the incentives program. Effluent reductions were calculated for a hypothetical case-study mill complying with Voluntary Advanced Technology BAT limitations at each incentive Tier. This case study is discussed in more detail at DCN 14488. The 1000 metric ton-per-day case-study mill operates a softwood and a hardwood bleach line of equal size, and uses a conventional three-stage bleach sequence with chlorine on each line. Table IX–1 presents effluent load reductions from that case-study mill, calculated for the baseline BAT (BAT Option A) as well as each incentive Tier.

TABLE IX–1.—EFFLUENT LOAD REDUCTIONS FOR CASE STUDY MILL

Pollutant	Units	Baseline BAT Technology	Tier I	Tier II	Tier III
AOX	kkg/yr	670	770	830	840
BOD5	kkg/yr	290	440	720	870
COD	kkg/yr	6,000	11,000	13,000	18,000
Color	kkg/yr	2,000	15,000	30,000	34,000
Chloroform	kg/yr	290	290	290	290
TCDD&TCDF	g/yr	4.9	4.9	5.0	5.0
12 Chlorinated Phenolics	kkg/yr	1,000	1,100	1,200	1,200

Note that for all levels, TCDD, TCDF, chloroform and the 12 chlorinated phenolics will not be detected in the final effluent. The differences between the levels are the result of technologies employed to reduce discharge flow rates under the incentive Tiers.

In selecting the technology basis for each of the Incentives Tiers, EPA also evaluated the associated non-water quality environmental impacts, changes in energy requirements, the age of facilities and equipment involved, the process used, and the engineering aspects of various types of control techniques and process changes. See DCN 14488. Nothing in EPA's analysis of these factors justified selecting different BAT technologies than those identified in section IX.a.3. EPA found that the technologies that form the basis of the Incentives Tiers provide a significant degree of water conservation, particularly at Voluntary Advanced Technology Tiers II and III. EPA also expects lower secondary sludge generation rates at Incentives Tier mills with activated sludge treatment because of reduction in BOD_5 loads associated with the Advanced Technologies. The technology basis of each of the Incentives Tiers will lead to overall decreases in energy consumption, primarily because of replacement of chlorine dioxide with oxygen-based delignification and bleaching chemicals. EPA expects a slight increase in air emissions (<2 percent) due to increased recovery of black liquor that will occur under the Incentives Tiers. However, these are offset by reductions in air pollution that derive from the reductions in overall energy consumption.

EPA considered the potential for cross-media transfer of pollutants through implementation of the Advanced Technologies that form the basis of the Incentives Tiers. EPA found no basis to conclude that cross-media transfer of pollutants would occur. See DCN 14488 and DCN 14492. However, much of the Tier II and Tier III technology bases focus on closing mill process cycles, which has not yet been fully demonstrated. As these technologies are fully developed and implemented, sufficient engineering analyses and testing should be performed to assess whether unacceptable cross media transfer of pollutants are occurring, and whether modifications need to be made to avoid any unacceptable transfers identified.

For NSPS, EPA has determined that Tier II and Tier III technologies constitute the best demonstrated control technologies for mills enrolling in those tiers. Although EPA cannot say today that either of these technology sequences is the best demonstrated control technology for new sources in the Bleached Papergrade Kraft and Soda subcategory as a whole, EPA does believe that new sources emerging within the next 16 years may characterize them as such based on their own sense of their economic and technical capabilities. Therefore, as with existing sources, EPA is promulgating this additional array of NSPS in order to provide such mills the opportunity to pursue voluntarily pollution prevention technologies—and to accept correspondingly more stringent effluent limitations—if business circumstances warrant. EPA notes that a mill subjecting itself to the Advanced Technology NSPS will be shielded from more stringent technology-based effluent limitations for ten years beginning on the date that construction is completed. See CWA section 306(d). Because these standards are entirely voluntary, their promulgation today presents no barrier to entry. In addition, EPA has determined that achievement of these standards will not result in any significant non-water quality environmental impacts or significant additional energy requirements. See DCN 14488. Nothing in EPA's analysis of the other statutory factors applicable to NSPS justified selecting different NSPS technologies.

EPA also believes it is appropriate to promulgate limitations for all three Tiers at the same time it promulgates the baseline BAT limitations. (The same rationale applies for today's Voluntary Advanced Technology NSPS.) By promulgating all three Voluntary Advanced Technology BAT Tiers today, rather than in five-year increments, EPA hopes to encourage as many mills as possible to develop and install Advanced Technologies. On this record, EPA has determined that its customary practice of promulgating a single BAT for similarly situated mills—represented here by the baseline BAT limitations—would have the unintended effect of impeding some mills' progress toward even greater environmental objectives than EPA can compel at this time. Thus, if EPA were to promulgate only baseline BAT limitations today and not establish a parallel track for mills converting to Advanced Technologies, EPA is concerned that mills might abandon their voluntary long-term strategies of superior environmental performance in favor of compulsory short-term compliance strategies focused on the baseline BAT. Instead, by promulgating Voluntary Advanced Technology BAT limitations at the same time as baseline BAT limitations, EPA allows interested mills to consider all technology options at the outset before they make their investment decisions and to design and install precisely the technologies and

'oluntary Advanced Technology ıcentives Program, call for nvironmental performance far in xcess of the performance compelled by he baseline BAT.

EPA chose the parameters and :mitations unique to the Voluntary \dvanced Technology Incentives 'rogram because they reflect the levels of performance EPA believes can be achieved over time by mills willing and ible to invest the resources to develop nd apply the corresponding Advanced Technology processes and practices. The Tier I technology is available today and does not impose significant non-water quality environmental impacts; it was not selected as the baseline BAT echnology because it is not economically achievable for the subcategory as a whole or any segment as is discernible from the record available today. See Section VI.B.5.a(5). However, for mills willing and able to employ that technology, EPA believes that limitations based on extended delignification, complete substitution, and other processes would be economically achievable by the year 2003. EPA believes that the technology bases for Tier II, in turn, could be technically and economically achievable for mills willing to participate by the year 2008, and would not impose significant non-water quality environmental impacts. EPA bases its view on the experience of at least three U.S. mills that are moving in the direction of reduced bleach plant flow. See DCN 14488. None of these mills, however, is presently achieving the "stage 2" flow limits for Tier II because those limits include pulping area and evaporator condensate as well as bleach plant wastewater flow. Finally, with respect to Tier III, EPA notes that one mill in Finland today is achieving flow levels close to 5 m^3/kkg or less, although this mill's flow rates also exclude condensates. This mill is able to achieve its current level of performance without imposing significant non-water quality environmental impacts. In addition, mills choosing Tier III will have up to 16 years and considerable flexibility to develop and implement appropriate flow control strategies. (For a discussion of the timeframes associated with achieving the Voluntary Advanced Technology BAT Limitations, see Section IX.A.7.) While EPA recognizes that achievement of the "stage 2" limits for Tier III may call for considerable creativity and innovation by industry participants, EPA believes that such spurs to innovation are consistent with the Clean Water Act's ultimate goal of eliminating the discharge of pollutants. Finally, EPA emphasizes that participation in the Advanced Technology Incentives Program is purely voluntary. No mill in the Bleached Papergrade Kraft and Soda subcategory is required to commit to achieve the Voluntary Advanced Technology BAT limitations at any level.

The voluntary nature of the Advanced Technology Incentives Program also supports EPA's finding that the "stage 2" BAT limitations for the various Incentives Tiers will be economically achievable by the dates specified in the rule for the mills choosing to achieve them. See 40 CFR 430.24(b)(4)(ii). The "stage 2" limitations apply only to mills that designate themselves as Tier I, Tier II or Tier III Advanced Technology performers and that voluntarily accept the corresponding "stage 2" limits in their NPDES permits. In other words, the "stage 2" limitations are BAT for an Advanced Technology mill only because that mill announces, by choosing to participate in the Program and by its choice of Tier, that by the date specified in the rule for the applicable "stage 2" limits a technology will be both available and economically achievable for the purpose of achieving those limitations. Based on the experiences of mills that have voluntarily pursued performance levels comparable to the "stage 2" limitations of Tiers I and II, EPA believes that a mill choosing to pursue those objectives can do so within its economic capability. Therefore, EPA believes it is reasonable to presume that a mill would not subject itself to enforceable technology-based limits if achievement of those limits would exceed the mill's economic capability. Because the economic achievability of the "stage 2" limitations ultimately is evaluated according to the mill's own choices, EPA concludes that the "stage 2" limitations are economically achievable. In addition, while implementation of these Advanced Technologies today is beyond the economic capabilities of many mills because of the significant capital investments that can be incurred at the outset, EPA believes that a mill able to plan for these investments over time could reduce those investment costs to some extent, if only by minimizing the amount of capital the mill would need to borrow. Moreover, with additional time mills will inevitably find ways to implement these technologies that reduce costs. More importantly, it could make these environmental improvements in sequence with other business decisions related to capital investment, thus reducing the overall cost of installing the Advanced Technologies. Although on this record EPA cannot state with confidence what the cost of implementing these Advanced Technologies would be if spread over time (and hence cannot make an economic achievability finding for the subcategory as a whole or any discernible segment relating to those Advanced Technologies), EPA nevertheless believes that each mill is capable of making that judgment and assuming the corresponding economic risks. This Voluntary Advanced Technology Incentives Program thus establishes a structure by which mills willing to predict their economic fortunes over the next several years and to commit to enforceable permit limits based on that prediction can do so.

EPA has considerable discretion under CWA section 304(b)(2) to determine whether and when a particular technology or process is BAT. EPA also has broad authority to interpret CWA section 301. In *E.I. du Pont de Nemours & Co.* v. *Train*, 430 U.S. 112 (1977), the Supreme Court accorded great deference to EPA in promulgating effluent limitations guidelines as regulations under section 301, noting that "[CWA Section] 101(d) requires us to resolve any ambiguity on this score in favor of the Administrator." *Id.* at 128. The Supreme Court also found that section 501(a) supports EPA's broad use of its regulatory authority to implement section 301. *Id.* at 132. EPA believes that its decision to promulgate Voluntary Advanced Technology BAT limitations is authorized by sections 301 and 304. Section 301(b)(2) in particular directs EPA to promulgate BAT limitations that, within the constraints of economic achievability, "will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants." Section 301(b)(2)(A). In addition, both case law and the legislative history interpreting the BAT program make it clear that the statute is to be used to force technology, within the constraints imposed by sections 301(b)(2) and 304(b)(2). Promulgation of regulations to promote the use of Advanced Technologies and, hence, progress toward the elimination of pollutant discharges thus is within the scope of the Administrator's 501(a) authorities. *See Cleveland Electric Illuminating Co.* v. *EPA*, 603 F.2d 1, 6 (6th Cir. 1979) ("The ultimate justification for every regulation and guideline pertaining to discharges is its effectiveness in promoting the achievement of the goals of Congress in enacting the 1972 Amendments.")

results of research (if necessary), process development, and mill trials.

Section 402(a) of the Clean Water Act authorizes permit writers to establish permit conditions and limitations on the basis of best professional judgment as necessary to achieve the objectives of the Act. Although EPA is promulgating BAT limitations under CWA sections 301 and 304, EPA is not—nor could it today—codify the particular process development, construction, and testing milestones that will lead each participating mill to achieve the ultimate Voluntary Advanced Technology performance requirements. Identifying those milestones is best left to the judgment of the permit writer, who will have access to far more mill-specific information than EPA has today.

c. "Stage 2" limitations. The third component of the Voluntary Advanced Technology BAT limitations consists of the "stage 2" limitations. See 40 CFR 430.24(b)(4)(i). These are the only standards applicable to Voluntary Advanced Technology NSPS and must be achieved upon commencing operation. See 40 CFR 430.25(c). Also included in the Voluntary Advanced Technology NSPS are standards for dioxin, furan, chloroform, 12 chlorinated phenolic compounds, BOD_5, TSS, and pH at the baseline NSPS level. See 40 CFR 430.25(c)(1). In addition, standards for pentachlorophenol and trichlorophenol, when used as biocides, are part of the Voluntary Advanced Technology NSPS. See 40 CFR 430.25(d).

These limitations and standards represent the ultimate performance requirements for each Tier. The "stage 2" limitations are as follows:

(1) Tier I Voluntary Advanced Technology BAT Limitations ("stage 2"). For Tier I, the ultimate performance requirement for AOX is a long-term average (LTA) of 0.26 kg/kkg, measured at the end of the pipe. 40 CFR 430.24(b)(4)(i). Under this Tier, Advanced Technology fiber lines at participating mills must also achieve reduced lignin content in unbleached pulps as measured by a kappa number of 20 for softwoods and 13 for hardwoods and reported as an annual average. *Id.* Finally, Tier I Advanced Technology fiber lines must recycle to recovery systems all filtrates up to the point at which the unbleached pulp kappa numbers are measured (e.g., brownstock into bleaching). Tier I also includes limitations for dioxin, furan, chloroform and 12 chlorinated phenolic pollutants, see 40 CFR 430.24(b)(3). Limitations on these parameters are established at the baseline BAT levels because application of Advanced Technologies does not appear on this record to justify more stringent limitations.

(2) Tier II Voluntary Advanced Technology BAT Limitations ("stage 2") and NSPS. For Tier II, the ultimate performance requirement for AOX is an LTA of less than 0.10 kg/kkg, measured at the end of the pipe. 40 CFR 430.24(b)(4)(i) and 430.25(c)(2). In addition, Tier II Advanced Technology fiber lines must recycle to chemical recovery systems all pulping-area filtrates prior to bleaching. *Id.* Finally, Tier II Advanced Technology fiber lines must also achieve total pulping area condensate, evaporator condensate, and bleach plant wastewater flow of 10 m^3/kkg or less reported as an annual average. *Id.* Tier II mills must also meet (or, in the case of existing dischargers, must continue to meet) limitations for dioxin, furan, chloroform, and the 12 chlorinated phenolic pollutants. See 40 CFR 430.24(b)(3) and 430.25(c)(1). Application of the Tier II Technologies does not appear to justify more stringent limitations for these parameters.

(3) Tier III Voluntary Advanced Technology BAT Limitations ("stage 2") and NSPS. For Tier III, the ultimate performance requirement for AOX is an LTA of less than 0.05 kg/kkg, measured at the end of the pipe. See 40 CFR 430.24(b)(4)(i) and 430.25(c)(2). In addition, Tier III Advanced Technology fiber lines must recycle to chemical recovery systems all pulping-area filtrates prior to bleaching. *Id.* Finally, Tier III Advanced Technology fiber lines must also achieve total pulping area condensate, evaporator condensate, and bleach plant wastewater flow of 5 m^3/kkg or less reported as an annual average. *Id.* Tier III mills must also meet (or, in the case of existing dischargers, must continue to meet) limitations for dioxin, furan, chloroform, and the 12 chlorinated phenolic pollutants. See 40 CFR 430.24(b)(3) and 430.25(c)(1). Application of the Tier III Technologies does not appear to justify more stringent limitations for these parameters.

d. Voluntary Advanced Technology BAT Limitations and NSPS for Mills Employing TCF Processes. In order to encourage mills to employ Advanced Technologies founded on TCF processes, EPA is opening today's incentives program to fiber lines that employ or commit to employ such processes. Existing dischargers that choose to employ TCF processes are subject to the "stage 1" limitations, interim milestones (including the baseline BAT limitations), and the "stage 2" limitations applicable to the selected tier. 40 CFR 430.24(b) and 430.25(c). These limitations are discussed above. However, recently gathered data from TCF mills indicate that all TCF mills will be able to achieve the AOX performance requirements at any Tier level because end-of-pipe AOX levels are being reported at below minimum level. See DCN 14488. Consequently, the AOX limitations for TCF fiber lines are expressed as "<ML." See 40 CFR 430.24(b) (3) and (4) and 430.25(c)(2). In addition, unlike mills using ECF processes to achieve Tier II and III BAT limits, TCF fiber lines would not receive limitations for the presence of TCDD, TCDF, chloroform, or the 12 chlorinated phenolics if they certify as part of their permit application (with appropriate corroborating data) that the bleaching process at those fiber lines does not involve the use of chlorine-based compounds. See 40 CFR 122.21(g)(3), (13) and 40 CFR 122.22(d). Similarly, a mill making the TCF certification is not subject to the minimum monitoring frequencies otherwise applicable to AOX. See 40 CFR 430.02. (For fiber lines that converted from ECF to TCF processes, mills should submit up to six months of AOX data—at the discretion of the permit writer—in order to allow the permit writer to determine an appropriate monitoring frequency on a best professional judgment basis.) EPA has determined that limitations on dioxin, furan, chloroform and the 12 chlorinated phenolic pollutants, and minimum monitoring requirements for AOX are unnecessary for TCF processes because a mill that does not use or generate compounds containing chlorine will not generate chlorine-related pollutants as a result of its bleaching processes. EPA hopes that such substantially reduced requirements for TCF mills will encourage more mills to employ TCF bleaching processes.

6. Selection of Voluntary Advanced Technologies as Bases for BAT Limitations and NSPS

Achievement of these BAT limitations, in particular the "stage 2" limitations for Tiers II and III, would represent substantial progress toward the national goal of eliminating the discharge of all pollutants. The "stage 2" limitations include limitations on AOX that are significantly more stringent than the baseline BAT limitations for AOX, as well as Tier-specific restrictions on the lignin content of unbleached pulps, the discharge of pulping area filtrates, and the quantity of total pulping area condensate, evaporator condensate and bleach plant wastewater flow. The latter restrictions, which are unique to the

om the processes needed to achieve .e ultimate Voluntary Advanced echnology BAT limitations. That .version of resources undercuts one of PA's principal assumptions regarding :e economic achievability of the .timate Voluntary Advanced echnology BAT limitations: that mills .ould be able to focus their capital and ther resources entirely on those .perior performance levels. Thus, EPA :as concerned that by compelling :hievement of baseline BAT .mitations as "stage 1" limitations, EPA .ould unnecessarily inflate the overall ost of achieving the ultimate Advanced 'echnology limitations. This would .kely cause some mills to conclude that ney cannot sustain the overall costs of chieving the Voluntary Advanced 'echnology BAT limitations in an -conomically achievable manner. Other nills, in turn, might decide to absorb he additional costs by diverting esources from other environmentally eneficial projects that they might have voluntarily undertaken. The Clean .Vater Act authorizes EPA to consider non-water quality environmental impacts and other factors EPA deems appropriate in setting BAT limitations. See CWA Section 304(b)(2)(B). For these reasons, EPA believes that compelling achievement of the baseline BAT limits in the first instance would have had the contradictory and unintended effect of discouraging participation in the program, with the result that fewer mills ultimately would be motivated to achieve superior environmental performance. Finally, as discussed in more detail below, EPA is requiring mills at the Tier II and Tier III levels to achieve interim limitations equivalent to baseline BAT by April 15, 2004. See 40 CFR 430.24(b)(3).

b. Interim Milestones. As the second component of the Voluntary Advanced Technology BAT for the three Incentives Tiers, EPA is requiring the establishment of enforceable interim milestones. See 40 CFR 430.24(b) (2) and (3). EPA believes that interim milestones would incrementally benefit the environment during the period prior to achievement of the ultimate Advanced Technology performance levels and will ensure that participating mills make reasonable progress toward achieving the superior performance represented by the various Advanced Technology BAT Tiers.

EPA is promulgating two sets of enforceable interim milestones. The first set requires mills enrolled at the Tier II or the Tier III level to achieve limitations equivalent to baseline BAT limitations by April 15, 2004. 40 CFR 430.24(b)(3). (Mills enrolled at the Tier I level are required to achieve those limitations as well as the ultimate Advanced Technology limitations by that date. 40 CFR 430.24(b) (3) and (4).) EPA believes that this is a reasonable requirement not only because it ensures significant environmental progress consistent with CWA section 301(b)(2), but it also reflects the technology performance Tier II and Tier III mills are likely to be achieving by that date. Mills enrolled in Tier II and Tier III are expected to substantially modify pulping and bleaching processes (e.g., install extended delignification, ECF, or TCF bleaching) to comply with the Advanced Technology limitations. EPA expects that all Tier II or Tier III mills will install extended delignification and complete substitution (ECF) or TCF bleaching processes well in advance of achieving their wastewater flow objectives in order to allow sufficient time to design, install, test and adjust their other flow-related processes. In EPA's judgment, process changes sufficient to achieve baseline BAT limitations will occur by April 15, 2004. Once these processes are installed, the mill will be achieving or exceeding the baseline BAT limitations being required by that date. See DCN 14488.

EPA notes that mills required to achieve water quality-based or other effluent limitations equivalent to one or more of the Voluntary Advanced Technology BAT limitations are still eligible to enroll in the Voluntary Advanced Technology Incentives Program and to receive incentives for achieving the remaining Voluntary Advanced Technology limitations. However, the time for complying with water quality-based or other equivalent effluent limitations would be determined by applicable law, not by this Voluntary Advanced Technology Incentives Program. Therefore, for example, if a mill's NPDES permit compels immediate compliance with a dioxin limitation equivalent to the Voluntary Advanced (BAT) Technology limitation on dioxin because of water quality concerns or other requirements of state or federal law, this six-year milestone would not be available for that dioxin limitation. See CWA section 301(b)(1)(C).

The second set of enforceable interim milestones promulgated today applies to all mills enrolled in the Advanced Technology Incentives Program. Although today's rule leaves the type and frequency of these milestones to the permit writer's best professional judgment, see 40 CFR 430.24(b)(2), milestones should include intermediate pollutant load and wastewater flow reductions (for Tier II and Tier III mills) in addition to research schedules, construction schedules, mill trial schedules, or other milestones appropriate to the advanced technology and the participating mill. Interim milestones should be tailored to circumstances and process technologies at individual mills.

In order to facilitate the development of appropriate interim milestones on a case-by-case basis, EPA proposes elsewhere in today's **Federal Register** to require all mills enrolling in the incentives program to submit plans detailing the strategy the mill will follow to develop and implement the technology required to achieve the chosen incentive tier, as well as the interim numeric limitations for Tiers II and III. The plan should describe each envisioned new technology component or process modification the mill will need to achieve the Voluntary Advanced Technology BAT limits. A master schedule should be included in the plan showing the sequence of implementing the new technologies and process modifications and identifying critical path relationships within the sequence. For each individual technology or process modification, a schedule should be provided that lists the anticipated date that associated construction, installation, or process changes will be initiated, the anticipated date that those steps will be completed, and the anticipated date that the full Advanced Technology process or individual component will be fully operational. For those technologies or process modifications that are not commercially available or demonstrated on a full scale basis at the time the plan is developed, the plan should include a schedule for research (if necessary), process development, and mill trials. The schedule for research, process development, and mill trials should show major milestone dates and the anticipated date the technology or process change will be available for mill implementation. The plan also would need to include contingency plans in the event that any of the technologies or processes specified in the Milestones Plan need to be adjusted or alternative approaches developed to ensure that the ultimate tier limits are achieved by the dates in the master schedule. EPA expects the permitting authority to use the information contained in those plans, as well as its own best professional judgment, to establish enforceable interim milestones applying all statutory factors. EPA also expects permit writers to include reopener clauses in the permits to adjust these milestones including dates to reflect the

restriction on filtrates (and hence the prevention of discharge of toxic materials) could not be expressed as a numeric limitation and therefore expressed that restriction in narrative form instead.

For further discussion of the effluent reductions and environmental benefits associated with the Advanced Technology BAT limitations and standards promulgated for these parameters, see DCN 14488.

5. Voluntary Advanced Technology BAT Limitations and NSPS

The Voluntary Advanced Technology BAT limitations consist of three separate components, which together comprise BAT for the particular Tier. See 40 CFR 430.24(b). The first and third components consist of numeric effluent limitations for the pollutants regulated by the Voluntary Advanced Technology Incentives Program. The second component consists of enforceable interim milestones. Under one set of milestones, existing dischargers enrolled in Tiers II or III are required to meet interim BAT limitations equivalent to the baseline BAT limitations by April 15, 2004. Under the second set of milestones, existing dischargers enrolled in any tier are required to meet enforceable requirements that are developed on a best professional judgment basis by the permitting authority; these milestones are expressed in either narrative or numeric form. Taken together, these three components constitute reasonable further progress toward the national goal of eliminating the discharge of all pollutants and for this reason represent BAT.

The Voluntary Advanced Technology NSPS consist of only one stage—the ultimate performance objectives for the Tier in question, with the addition of conventional limitations at the baseline NSPS level. See 40 CFR 430.25(c). This is because new sources, unlike existing sources subject to BAT, must design and construct their facilities to achieve NSPS upon commencing operation; sequencing limitations to achieve continuing progress would be inconsistent with this statutory mandate.

a. "Stage 1" BAT Limitations. In the regulation, EPA has codified the first set of numeric BAT effluent limitations as "stage 1" limitations to be applied in the absence of more stringent WQBELs. See 40 CFR 430.24(b)(1). Although expressed in this regulation in narrative form, EPA intends that the permitting authority will express that limitation in numeric form for each participating mill on a case-by-case basis. The "stage 1" limitations thus will be numeric values on dioxin, furan, chloroform, AOX, and 12 chlorinated phenolic pollutants that, for each pollutant, are equivalent to the more stringent of either the technology-based limit on that pollutant in the mill's last permit or the mill's current effluent quality with respect to that pollutant. *Id.* Existing effluent quality for AOX would be determined at the end of the pipe based on loadings attributable to that fiber line; for all other pollutants covered by the Advanced Technology BAT limitations, such as dioxin, existing effluent quality would be determined at the point where the wastewater containing those pollutants leaves the bleach plant. *Id.* These "stage 1" BAT limits represent the first step in the Advanced Technology BAT continuum and are enforceable against the participating mill as soon as they are placed in the mill's NPDES permit.

The purpose of the "stage 1" BAT limits is to ensure that, at a minimum, existing effluent quality is maintained while the mill moves toward achieving the ultimate Voluntary Advanced Technology BAT performance requirements for the Tier selected by the mill. As Advanced Technology permits are reissued for Tier II or Tier III mills, in particular, new "stage 1" limitations must be established to reflect the improving effluent quality of that mill. *Id.* Allowing a mill to degrade its effluent quality during development and installation of Advanced Technologies would be inconsistent with the statute's direction that BAT limitations achieve reasonable further progress toward the Clean Water Act's national goals. EPA's "stage 1" limitations, thus, are intended to capture continuously improving effluent quality.

EPA had considered, but rejected, attempting to codify the "stage 1" limits in numeric form. First, EPA has no way on this record to quantify and hence codify the existing effluent quality of each mill that is potentially eligible to participate in this program. Nor would such an attempt be wise, because EPA expects that mills considering participating in the Voluntary Advanced Technology Incentives Program will continue to improve their effluent quality up to and beyond the promulgation date of this regulation and, most likely, up to and beyond the dates that their existing effluent quality is translated into enforceable permit limits. Therefore, even if EPA could codify such "stage 1" limitations today, doing so would likely establish a less stringent technological floor than the permitting authority would be able to establish each time an Advanced Technology permit is issued prior to achievement of the ultimate Advanced Technology performance requirements.

Because the "stage 1" limitations reflect a level of technology that the mill is already employing or that was previously determined to be BAT for that mill, EPA has determined that the technology bases for the "stage 1" limits are both technically available and economically achievable. EPA has also determined that they would not impose any adverse non-water quality environmental impacts. EPA has determined that these "stage 1" limitations are the "best" available technology economically achievable for mills participating in the Voluntary Advanced Technology Incentives Program because they allow those mills to focus their resources on the research, development, testing, and installation of the technologies ultimately needed to achieve the Advanced Technology performance levels. Thus, "stage 1" limitations reflect "reasonable further progress toward the national goal of eliminating the discharge of all pollutants," as called for by CWA section 301(b)(2)(A). EPA also considered all of the other statutory factors specified in CWA section 304(b)(2)(B) and concluded that nothing in EPA's analysis of those factors justifies selecting a different set of "stage 1" BAT limitations. For these reasons, EPA determined that the "stage 1" BAT limitations promulgated today represent the appropriate first rung of the Advanced Technology BAT ladder that participating mills will have committed to ascend.

EPA did not set "stage 1" limits at the baseline BAT level because baseline BAT limits are not a logical first step to meeting the ultimate Advanced Technology BAT limitations for the reasons set forth below. See DCN 14488. First, as a technical matter, mills subject to such interim limits most likely would need to install more chlorine dioxide generator capacity than they ultimately would use to achieve the Advanced Technology performance requirements. (EPA believes most Advanced Technology mills ultimately will employ complete substitution of chlorine dioxide for elemental chlorine, preceded by extended delignification processes—a sequence that calls for approximately 30 to 75 percent less chlorine dioxide than a mill would use to achieve the baseline BAT requirements depending on the degree of extended delignification used.) Second, as an economic matter, interim limitations driving a mill to over-design its chlorine dioxide generator would cause the mill to divert capital away

vestment cycles. Conversely, setting reshold criteria at levels that could be t by some mills that comply only th the baseline BAT limitations and at do not employ Advanced chnologies could serve as a sincentive to invest in Advanced echnologies that achieve dramatic ductions in pollutant loadings and ow. The kappa numbers defined above r Tier I, while at the upper end of the nge of values achieved by extended elignification technologies, onetheless appear to separate mills iat employ them from mills that would se conventional pulping technologies achieve the BAT limitations. See DCN 4488.

EPA is setting the Voluntary dvanced Technology BAT limitations nd NSPS for Tier II and Tier III based n a different philosophy than for Tier . EPA believes that Tiers II and III hould reflect a movement toward the ong-term goal of minimizing impacts of nills in all environmental media hrough partially or fully closed loop processes. For Tier II, EPA is setting an AOX limit based on a long-term average 0.10 kg/kkg) that is currently being achieved by some of the best mills in he industry. See DCN 14488. See 40 CFR 430.24(b)(4)(i) and 430.25(c)(2). For Tier III, EPA is setting an AOX limit based on a long-term average (0.05 kg/kkg) that is being achieved by only a very few mills, including one ECF mill. SeeDCN 14488. Id. This ECF mill achieved the AOX limit only with hardwood furnish: moreover, it did so without the level of flow reduction anticipated for Tier III. See DCN 14488. It is the Agency's judgment, based on trends in ECF technology development to date, that with recycle of pulping and evaporator condensates and bleach plant filtrates necessary to achieve a wastewater flow of 5 m^3/kkg, and removal of chlorides from the liquor cycle, commensurate reductions in the mass of chlorinated organic pollutants contained in wastewaters discharged also are likely to occur. For this reason, it is EPA's judgment that the Tier III AOX limit will be achievable by advanced ECF mills for both hardwood and softwood furnishes as well as advanced TCF mills.

The Tier II and Tier III BAT limitations and NSPS also include restrictions on wastewater flow and a requirement that all pulping-area filtrates be recycled to chemical recovery prior to bleaching. See 40 CFR 430.24(b)(4)(i) and 430.25(c)(2). As discussed above for Tier I, the filtrates recycle requirement is an important step toward long-term flow reduction. Flow reduction and progress toward closed loop mill operations, in turn, are very important long-term environmental goals because pollutant releases to all environmental media would be minimized.

While mills currently measure end-of-pipe flow at the point of permitted discharges, Tier II and Tier III mills will be required to establish and maintain flow measurement equipment to verify compliance with the annual average reduced flow limits for those tiers for bleach plant and pulping area and evaporator condensates. EPA is not establishing minimum monitoring frequencies for flow in this regulation. Permit writers maintain the authority to establish monitoring frequencies on a best professional judgment basis. See 40 CFR 430.02.

Review of currently available data and literature indicates that the numerical values for flow set forth to define Tiers II (10 m^3/kkg) and III (5 m^3/kkg) are appropriately stringent reduced flow targets by comparison to current wastewater flow for mills with extended delignification technologies. See DCN 14488. EPA believes it is appropriate to include condensates as part of the specified wastewater flow volume because technologies are available today that allow for their recycle and reuse; use of these technologies therefore ensures that the cumulative volume of wastewater flow is reduced to the greatest extent possible. See DCN 14488. One technology in particular is the "clean condensate alternative," which is a viable MACT compliance alternative. See 40 CFR 63.447. This alternative facilitates the segregation, treatment, and reuse of condensates and thus will assist mills in achieving the wastewater flow objectives. Inclusion of pulping and evaporator condensates in these reduced flow targets therefore is consistent with the "clean condensate" MACT compliance alternative and will promote flow reduction through recycle and reuse of the greatest possible volume of process wastewater.

EPA has the legal authority to establish Advanced Technology effluent limitations for non-chemical parameters, such as lignin content measurements and flow, and to do so where appropriate in narrative form. For Tier I, these limitations take the form of kappa numbers to measure lignin content in unbleached pulp and a narrative requirement to recycle pulping area filtrates; for Tiers II and III, they take the form of numerical limitations on process wastewater flows, as well as the narrative requirement to recycle pulping area filtrates. EPA has the authority to establish limits for lignin content in unbleached pulp, for recycle of filtrates, and for reduced process wastewater flows because each of these parameters functions as a restriction on the quantities, rates or concentrations of chlorinated organic pollutants and other pollutants in a mill's wastestream. See CWA Section 502(11). Restrictions on lignin content of unbleached pulp, measured as a kappa number, can be used to reduce the presence of precursors for chlorinated organic pollutants in a mill's wastewater. In addition, lignin itself is a material that includes polynuclear aromatic hydrocarbons; a number of polynuclear aromatic hydrocarbons are included in EPA's list of priority pollutants. See Appendix A to Part 403 (reprinted after 40 CFR 423.17). Recycling pulping area filtrates to the chemical recovery cycle prevents the discharge of weak black liquor, which includes inorganic pulping chemicals and dissolved wood substances. The dissolved wood substances include polynuclear aromatic materials, degraded carbohydrates, low-molecular weight organic acids, and wood extractives (resins and fatty acids). The toxicity of the materials contained in black liquor is well documented; see the BMP Technical Support Document (DCN 14489). Limits for process wastewater flow, in this case pertaining to total pulping area and evaporator condensate and bleach plant wastewater, move mills toward closed loop operations. Reductions in flow will have the effect of dramatically reducing mass loadings—and discharges—of non-chlorinated organics such as lignin and a variety of chlorinated organics in addition to dioxin, furan and the chlorinated phenolic pollutants specifically regulated today. Because those pollutants are far too numerous to measure individually (and some have not been specifically isolated and identified), EPA determined that it was impracticable to set mass-based limits for all of those pollutants. See DCN 14488. EPA judged that establishing flow levels for Tiers II and III would be the best way to control the discharge of these pollutants.

For the foregoing reasons, all of these Advanced Technology performance objectives qualify as effluent limitations under CWA section 502(11). As noted above, the filtrates recycle limitation is a narrative limitation. Nothing in the definition of effluent limitation in CWA section 502(11) or elsewhere in the CWA compels that restrictions on the discharge of pollutants be expressed in numeric form. *See NRDC* v. *Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977). In this instance, EPA determined that the

to conclude that flow reduction technologies are emerging. Although the flow volume projected or reported by these mills excludes pulping area or evaporator condensates, which EPA includes within its Tier II flow limitation, EPA expects that over the next ten or eleven years condensate reuse strategies and discharge flow reduction technologies will mature to allow mills to achieve the pulping area condensate, evaporator condensate and bleach plant wastewater flow level being codified today as part of Tier II. For further discussion of EPA's rationale for selecting this technology as the basis for Voluntary Advanced Technology BAT limitations and NSPS at the Tier II level, see Section IX.A.6.

The model technology for the Tier III Voluntary Advanced Technology BAT limitations and NSPS represents what EPA believes can be achieved in 15 or 16 years by mills on the cutting edge of minimum effluent technology. In EPA's view, such mills will fully reuse pulping area and evaporator system condensates, have a closed fiber line prior to bleaching, and recycle the majority of bleach plant filtrates back to the recovery cycle. EPA expects that these mills will also operate efficient biological treatment systems. To achieve this degree of mill closure, in addition to the level of technology described under Tier II, EPA expects the model Tier III mill will have "kidney" technology to remove metals from bleach filtrate and chloride from the mill liquor cycle, and may perform extensive steam stripping or other treatment of condensates to allow for full reuse. Mills that choose to use ozone delignification may avoid the need for a chloride removal system. EPA also expects that the Tier III mills will have advanced process control systems and negligible losses of black liquor through leaks and spills. Finally, the model Tier III mill will likely have extended liquid storage capacity as part of its water recycle and liquor management systems to help maintain the good hydraulic balance required for low discharge flow operation. While no U.S. mill today is achieving these limitations, EPA believes that the continuing progress being made by mills toward closed-loop processing will lead to greater innovation regarding technologies and practices necessary to achieve the Tier III limitations. For further discussion of EPA's rationale for selecting this technology as the basis for Voluntary Advanced Technology BAT limitations and NSPS at the Tier III level, see Section IX.A.6. For a more detailed discussion of the technology bases for the Voluntary Advanced Technology BAT Limitations and NSPS, see Voluntary Advanced Technology Incentives Program Technical Support Document (DCN 14488).

4. Pollutants Regulated by Voluntary Advanced Technology BAT and NSPS Limitations

Except for TCF-based processes, each Advanced Technology tier consists of limitations for dioxin, furan, chloroform, and 12 chlorinated phenolic pollutants monitored at the bleach plant. EPA is not codifying limits for these pollutants for TCF processes. As discussed in more detail below, each Tier also includes AOX limitations monitored at the end of the pipe and, depending on the Tier, limitations on lignin content or wastewater flow. In addition, each BAT Tier includes limitations on pentachlorophenol and trichlorophenol (when used as biocides), see 40 CFR 430.24(d), and each NSPS Tier includes limitations on BOD_5, TSS and pH, as well as biocides. See 40 CFR 430.25(c) and (d).

EPA has chosen to use AOX as a performance standard for each of the three Voluntary Advanced Technology BAT tiers because AOX is a measure of progress in reducing the total chlorinated organic matter in wastewaters resulting from the bleaching of pulps. In addition, the use of AOX rather than other measures of organic matter (e.g., BOD_5) will further encourage a pollution prevention approach instead of end-of-pipe treatment technologies. The final rule establishes minimum monitoring frequencies for AOX for each of the Tiers, except for TCF fiber lines. See 40 CFR 430.02(d) and (e). For TCF fiber lines, permit writers should determine the appropriate monitoring frequency to assure continued compliance with the AOX limitation.

In addition to the AOX criterion, EPA is establishing BAT limitations requirements for Tier I that include kappa numbers measured prior to bleaching and a narrative limitation calling for recycling of all filtrates generated prior to the point at which that kappa number is measured. See 40 CFR 430.24(b)(4)(i). The kappa number is a measure of lignin content in unbleached pulp, and is routinely determined by mills. EPA is not establishing minimum monitoring requirements for kappa numbers in this regulation. Permit writers maintain the authority to establish monitoring frequencies on a best professional judgment basis.

By meeting the kappa number limitations, Tier I mills will achieve substantial reductions in precursors for chlorinated organic pollutants found in lignin beyond reductions achieved by mills with conventional pulping processes. See DCN 14488. Some industry commenters suggested that EPA simply specify qualifying Advanced Technologies and require participating mills to employ one or more of those technologies in order to receive incentives. EPA rejected this approach because it would inhibit development of equivalent technologies that EPA cannot foresee today and is inconsistent with the traditional performance-based structure of technology-based effluent limitations under the Clean Water Act. Nevertheless, EPA agrees with these commenters that Tier I mills will in all likelihood employ extended delignification technologies or other technologies that similarly reduce the kappa number prior to bleaching; EPA, therefore, is requiring Tier I mills to achieve specified kappa numbers that reflect the performance capabilities of well-operated, extended delignification systems. In addition, EPA's Tier I limits reflect EPA's expectation that Tier I mills will be bleaching pulps with less lignin and, hence, will realize significant reductions in the amount of unrecoverable bleaching chemicals required to achieve their target brightness. By using less bleaching chemical, Tier I mills will further reduce the formation and discharge of chlorinated organic pollutants generated by bleaching pulps with chlorine-containing compounds, including chlorine dioxide. By recycling the pulping area filtrates, Tier I mills also will be implementing an important building block for long-term flow reduction goals, and eliminating an important source of weak black liquor discharge that would otherwise go to the mill's wastewater treatment plant. See DCN 14488.

By defining Tier I with parameter values (AOX, kappa numbers) and recycle requirements as presented above, EPA intends to provide maximum encouragement to as many mills as possible to achieve the performance of at least the initial threshold of the Advanced Technology program. Adopting threshold performance criteria that are too stringent could discourage mills from making additional capital investments beyond those necessary to achieve the baseline BAT. This could undermine one goal of the incentives program, which is to achieve the greatest environmental results possible consistent with mills' capital

er line. *Id.* The next stage in the ntinuum consists of enforceable terim milestones. Under one set of lestones, existing dischargers rolled in Tiers II or III are required to eet interim BAT limitations equivalent the baseline BAT limitations by April , 2004. 40 CFR 430.24(b)(3). (By that te, dischargers enrolled are required meet the baseline BAT limitations for l pollutants, except for Tier I; the AOX nitation for mills enrolled in Tier I is e ultimate performance requirement r Tier I. *Id.*) Under the second set of ilestones, existing dischargers rolled in any tier are required to meet nforceable requirements determined by e permitting authority based on best ofessional judgment; these milestones ould be expressed as narrative or umeric conditions in the mill's NPDES ermit. 40 CFR 430.24(b)(2). EPA ntends the milestones to reflect each ep in a mill's progress toward chievement of the Tier's ultimate erformance requirements. Elsewhere in oday's **Federal Register**, EPA is roposing to require each participating ill to submit to its permitting authority plan detailing the steps it plans to take with corresponding dates) in order to eet its applicable BAT Tier mitations. Under the proposed egulation, permit writers would be uthorized to use the information in the nilestone plan as a basis for setting nilestone limitations. The final stage in he BAT continuum represents the ltimate Advanced Technology erformance levels for the Tier selected. 40 CFR 430.24(b)(4)(i). As noted above, he Voluntary Advanced Technology ncentives Program is also available for ew sources that elect to exceed aseline NSPS requirements. See 40 CFR 430.25(c). For new sources (as defined at 430.01(j)), the incentives program begins at Tier II. The ultimate Tier II and Tier III performance requirements constitute NSPS for such mills, with the addition of standards for conventional pollutants at the baseline NSPS level. See 40 CFR 430.25(c)(1) and (2). The NSPS Tier II and Tier III performance requirements are the same as the ultimate BAT Tier II and Tier III performance requirements for BAT. As required by CWA Section 306, new sources must comply with the applicable NSPS upon commencing operation; therefore, the incremental approach of achieving progressively more stringent performance levels discussed above for existing sources would not apply to new sources enrolled in the incentives program.

In addition to Voluntary Advanced Technology BAT limitations and NSPS, the NPDES permit of a mill enrolled in the Voluntary Advanced Technology Incentives Program will need to contain all other permit limitations and conditions otherwise applicable to the mill, including any conventional pollutant limitations and standards, any water quality-based effluent limitations required under CWA Section 301(b)(1)(C), and best management practices provisions, including those promulgated today. Schedules for complying with those requirements, if any, are determined by the applicable law; nothing in this incentives program alters in any way those compliance deadlines.

Because mills enrolling in the Voluntary Advanced Technology Incentives Program are subject to more stringent BAT limitations and NSPS than EPA could otherwise compel through national effluent limitations guidelines, EPA has assembled a package of rewards and incentives for participating mills. The public recognition incentive is available as soon as a mill accepts Voluntary Advanced Technology BAT limitations in its NPDES permit. The reduced monitoring incentive applicable to dioxin, furan, chloroform and the 12 chlorinated phenolic pollutants is available as soon as participating mills achieve those limitations. See 40 CFR 430.02(c). The reduced monitoring incentive applicable to AOX is available only after the ultimate Advanced Technology performance level for that pollutant is achieved. See 40 CFR 430.02(d) and (e). The remaining incentives, including greater permit certainty, reduced inspections, and reduced penalties, are available only after the mill achieves all of the ultimate Advanced Technology performance levels.

EPA has decided not to make the Voluntary Advanced Technology Incentives Program available to indirect discharges at this time because it would be much more difficult to administer than the baseline PSES program and therefore would impose substantial burden on local governments. Further, EPA does not believe that commitments by indirect dischargers to reduce AOX or flow levels warrants any delay in compliance with limitations on dioxin and furan due to POTW pass-through and biosolids contamination concerns. Similarly, EPA has not identified feasible technologies beyond BAT that can significantly reduce pollutant discharges from mills in the Papergrade Sulfite subcategory at this time, and so is not able to develop an incentives program for this subcategory. Moreover, stakeholders have offered no specific suggestions or supporting information and data upon which EPA reasonably could develop a program for the Papergrade Sulfite subcategory. However, EPA will consider developing incentive programs for other subcategories as BAT limitations are promulgated for those subcategories.

3. The Technology Bases for the Voluntary Advanced Technology BAT Limitations and NSPS

In order to determine the appropriate Voluntary Advanced Technology BAT limitations and NSPS, EPA first selected a model technology for each Tier. For Tier I, which applies only to BAT, EPA determined that the most appropriate technology was extended delignification with complete substitution of chlorine dioxide for elemental chlorine, closing up wastewater discharges from the fiber line prior to bleaching, and efficient biological wastewater treatment. EPA selected this technology basis because it is available today (see discussion of BAT Option B and NSPS technology in Section VI.B.5.(a) and (b)), because it is economically achievable for mills voluntarily choosing to implement it (see Section IX.A.6), and because it represents an important step in the direction of a minimum impact mill.

The model technology for Tier II Voluntary Advanced Technology BAT limitations and NSPS consists of extended delignification with complete substitution of chlorine dioxide for elemental chlorine, supplemented with increased use of water conservation practices, water reuse practices, bleach plant filtrate recycling practices, and efficient biological wastewater treatment. EPA anticipates that Tier II mills will maximize the capability of extended delignification technology, thereby reducing the amount of chlorine dioxide used in bleaching. The model Tier II mill also will have highly effective pulping liquor spill prevention and control and will have evaporators that minimize the amount of black liquor carryover, to allow for extensive condensate reuse. EPA expects that Tier II mills also will employ a closed fiber line prior to bleaching improved water reuse within the bleach plant, and will recycle a portion of bleach plant filtrate back through the fiber line to the recovery cycle. The Tier II Advanced Technology BAT limitations and NSPS represent the performance demonstrated by mills that minimize effluent flow and reduce the formation of chlorinated organic compounds using these technologies and practices. Three mills in the United States are approaching the reduced wastewater flow levels equivalent to Tier II, which leads EPA

labeled Tier I, Tier II and Tier III; the two NSPS tiers are labeled Tier II and Tier III. Tier III is the most stringent of the tiers. Each BAT tier is made up of an array of increasingly more stringent enforceable effluent limitations, culminating in the ultimate performance requirements for that particular tier. The NSPS tiers consist entirely of the ultimate performance requirements for each tier. In addition to the Voluntary Advanced Technology effluent limitations and NSPS codified today, EPA has also assembled a number of incentives relating to permitting and enforcement matters and public recognition. EPA hopes these incentives will encourage many mills to develop and install advanced and even innovative technologies that will lead the industry as a whole toward the elimination of pollutant discharges.

EPA believes it is appropriate as a matter of policy to offer mills incentives to reach beyond the baseline BAT and NSPS process technologies. Capital costs associated with the Tier I technology are substantially greater than the capital costs of Option A, which is the technology basis for the baseline BAT limits. Although over ten years a mill employing Tier I technologies will likely save money in operating costs, the capital outlay involved may discourage mills from doing more than the regulatory minimum. For Tiers II and III, the costs and risks are even more acute, when one considers the cost of research, development, and full scale commercial trials of technologies in the early stages of development and implementation, as well as the associated uncertainties concerning possible product impacts. EPA is interested in encouraging research, development and installation of emerging technologies in order to motivate the development of these technologies for broader commercial applications. As these technologies become proven and their efficiencies publicized, EPA hopes that they will become—in effect if not as a matter of law—the industry floor. Thus, EPA believes it is in the public interest to encourage mills today to develop environmentally beneficial technology and to reward mills that are innovative and forward-looking in their use of new and more environmentally effective technology despite its greater cost.

EPA received suggestions for an incentives program from a number of stakeholders. From these and other stakeholder suggestions, EPA has developed a program, presented below, that is intended to provide incentives for further long term environmental improvements. EPA is incorporating several types of incentives in this program. In addition, because mill-specific factors, including product specifications and existing equipment, will affect the technical approach taken and the environmental goal attainable by an individual mill, EPA is establishing several tiers of Advanced Technology performance objectives, each with limitations and standards specific to the model technology EPA is positing. In order to promote ambitious use of Advanced Technologies, EPA is offering greater incentives for greater reductions in pollutant discharge.

EPA recognizes that some mills in the Bleached Papergrade Kraft and Soda subcategory have already installed or have committed to install Advanced Technologies that are achieving or have the potential to achieve effluent limitations equivalent to the ultimate performance requirements of one or more of the Voluntary Advanced Technology Incentive Tiers. If these mills accept enforceable NPDES permit limitations at one of the Tier levels, they will qualify for the incentives program at that level. In some instances, therefore, the incentives will actually serve as rewards for effluent reductions already achieved.

2. Mechanics of the Incentives Program

The Voluntary Advanced Technology Incentives Program for the Bleached Papergrade Kraft and Soda subcategory will supplement the otherwise compulsory baseline BAT and NSPS program. EPA emphasizes that the Voluntary Advanced Technology Incentives Program is entirely voluntary; no mill in Subpart B is required to participate. Rather, mills subject to the baseline BAT limits and NSPS contained in Subpart B may enroll in the incentives program and thus subject themselves to more stringent technology-based limitations corresponding to the Incentives Tier they select. For example, a mill that determines that it can achieve Tier II limits may designate itself as a BAT Tier II mill. A mill with more than one fiber line subject to Subpart B may choose to enroll all or some of its fiber lines in the Voluntary Advanced Technology Incentives Program. A mill wishing to experiment with advanced or even innovative bleaching technologies also may choose different Tiers for different fiber lines. After the mill enrolls in the Voluntary Advanced Technology Incentives Program, the permit writer must place the corresponding BAT limitations in the mill's permit. Achievement of the Advanced Technology BAT limitations thereafter would be compulsory for that mill. A mill that chooses not to participate in the program will receive the baseline BAT limitations or NSPS; similarly, a mill that chooses to enroll some but not all of its Subpart B fiber lines in the Voluntary Advanced Technology Incentives Program will receive baseline BAT limitations or NSPS for its non-participating fiber lines.

EPA expects that an interested mill would formally enroll in the Voluntary Advanced Technology Incentives Program prior to issuance of its next NPDES discharge permit. Enrollment can be made by indicating the mill's intent on its permit application or through separate correspondence to the permitting authority as long as the signatory requirements of 40 CFR 122.22 are met. However, as discussed in more detail in Section IX.A.7 below, EPA assumes that most mills, for practical purposes, will decide whether to participate in the Voluntary Advanced Technology Incentives Program in the next year in order to assure that they will have the maximum amount of time to achieve the various Tier limitations and to receive the additional compliance time for MACT, established under these rules for mills enrolled in the Voluntary Advanced Technology Incentives Program. Any mill can voluntarily enter at any tier appropriate to its individual circumstances. Further, mills that enter either at Tier I or Tier II may decide, after making such a commitment in permits but before termination of the appropriate compliance period (i.e., not later than six years after publication of these rules—Tier I, or not later than 11 years after publication of these rules—Tier II), to commit to the requirements of a more stringent tier (i.e., Tier II or Tier III). Such mills will be subject to the deadlines specified in the regulation for the newly chosen tier.

Existing dischargers volunteering to participate in the incentives program would receive BAT limitations that become progressively more stringent over time. Although applied in stages, the limitations represent a continuum of progress that a participating mill commits, and is required, to achieve. At the first stage in the continuum are limitations for the enrolled fiber line that reflect either a mill's existing effluent quality or its current technology-based permit limits for the BAT parameters, whichever are more stringent. See 40 CFR 430.24(b)(1). For the bleach plant parameters, such as dioxin, existing effluent quality would be determined at the bleach plant, while existing effluent quality for AOX would be determined at the end of the pipe based on loadings attributable to that

ercent to 170 percent of water-related osts.

The case studies were not selected to be, and are not necessarily, representative of national benefits with respect to air quality.

TABLE VIII–9.—COMPARISON OF POTENTIAL ANNUAL BENEFITS TO POTENTIAL ANNUALIZED COSTS FOR SEVEN CASE STUDY SITES

[Millions of 1995 dollars]

Site	Water-related benefits	Air-related benefits [b]		Total monetized benefits	Total compliance costs [a]
		MACT I	MACT II		
ORIGINAL CASE STUDIES					
enobscot River	$0.7–$2.3	($9.5)–7.7	$0.1	($8.7)–10.1	[c]
Visconsin River	$0.1–$1.5	($16.9)–15.6	$2.1	($14.7)–19.2	$9.3
ower Columbia River	$1.5–$8.6	($26.9)–56.2	$0.7	($24.7)–65.5	$16.6
NEWER CASE STUDIES					
ower Tombigbee and Mobile Rivers	$1.1–$12.0	($136.8)–113.2	$81.7	($54.0)–$206.9	$32.5
igeon River	$2.7–$8.7	($5.8)–$5.7	$2.1	($1.0)–$16.5	[c] $7.1
amoa Peninsula	$0.1–$1.4	($5.0)–10.1	$0.0	($4.9)–$11.5	[d] $5.0
Upper Columbia River/Lake Roosevelt	$1.5–$11.6	NA	NA	$1.5–$11.6	$3.0

[a] The total compliance costs shown in this Table (for BAT/PSES, MACT I and proposed MACT II Option #1) differ from compliance costs used o determine economic achievability. The cost estimates for the case studies were based on custom analysis of technology in-place correspond-ng to the case study timeframes. In contrast, estimates used to determine economic achievability used a standard mid-1995 baseline for tech-nology in-place

[b] Based on implementation of technologies consistent with Option A.

[c] Confidentiality agreements preclude disclosure of total costs for this site.

[d] This mill has indicated EPA's cost estimate is too high because EPA did not fully account for technology in-place.

NA = Not applicable.

IX. Incentives for Further Environmental Improvements

A. The Voluntary Advanced Technology Incentives Program

1. Introduction

EPA is promulgating BAT limitations today that will achieve significant pollutant reductions using technologies within the economic capability of the subcategory as a whole. At the same time, EPA wants to encourage the widespread use and perfection of technologies such as extended delignification and to promote the development of even more advanced technologies, such as those aimed at reducing bleach plant flow. EPA also wants to encourage the widespread use and perfection of TCF processes. These technologies and processes have the ability to surpass the environmental protection that would be provided by compliance with the baseline BAT. Indeed, EPA's vision of long-term environmental goals for the pulp and paper industry includes continuing research and progress toward such environmental improvement. The Agency believes that individual mills can be encouraged to make substantial environmental progress beyond the base level compelled by law. This industry's participation in the 33/50 program, its progress toward reducing toxic discharges in advance of the proposed BAT revisions, its joint initiative with the U.S. Department of Energy to reduce future energy demands, and its development and implementation of the Sustainable Forestry Initiative, among other voluntary environmental undertakings, indicate that an incentives program may be widely accepted and utilized by individual mills.

For this reason, EPA is establishing a Voluntary Advanced Technology Incentives Program to encourage mills in the Bleached Papergrade Kraft and Soda subcategory to move beyond today's baseline BAT technologies toward the "mill of the future," which EPA believes will have a minimum impact on the environment. EPA also intends the program to serve as a pilot program for determining the effectiveness of regulatory incentives as a means of stimulating development of environmentally beneficial technologies. As a result of the Voluntary Advanced Technology Incentives Program, EPA hopes to achieve within sixteen years greater pollutant reductions than it could achieve solely by establishing a technological floor. Indeed, the development of increasingly more advanced bleach plant process technologies is a critical step toward the Clean Water Act's ultimate goal of eliminating the discharge of pollutants into the Nation's waters. See CWA Section 101(a)(1).

The BAT program under the Clean Water Act is widely and justifiably applauded as a critical tool in forcing the development and installation of environmentally beneficial technologies. The statute demands progress toward the goal of eliminating the discharge of all pollutants, CWA Section 301(b)(2)(A), but emphasizes that that progress must be "reasonable." *Id.* This Voluntary Advanced Technology Incentives Program marries the twin objectives embodied in Section 301(b)(2)(A): compelling the industry to go as far as it reasonably can go, through the achievement of limits that are technically and economically achievable, while holding out through the Voluntary Advanced Technology Incentives Program an array of alternative effluent limits that EPA believes will lead to zero discharge. The baseline BAT limitations discharge EPA's statutory mandate: to promulgate limitations based on the best available technology economically achievable. The Voluntary Advanced Technology Incentives Program, in turn, promotes EPA's statutory goal: to establish limitations that act as a beacon to show what is possible.

EPA is codifying three tiers of Voluntary Advanced Technology BAT effluent limitations and two tiers of Voluntary Advanced Technology NSPS, which together form the backbone of the Voluntary Advanced Technology Incentives Program for mills in the Bleached Papergrade Kraft and Soda subcategory. The three BAT tiers are

Compared to current discharges, the incremental benefits associated with OD (Option B) include: reduction of color (by 40 percent): COD (by 40 percent): AOX (by 84 percent); and chronic sub-lethal aquatic toxicity. TCF would also reduce color discharges (by 40 percent), COD (by 40 percent), AOX (by 96 percent) and chronic sub-lethal aquatic toxicity. The water quality benefits of the rejected options are shown in Table VIII–8.

TABLE VIII–8.—MONETIZED WATER QUALITY BENEFITS OF REJECTED BAT/PSES OPTIONS FOR BLEACHED PAPERGRADE KRAFT AND SODA & PAPERGRADE SULFITE MILLS

Benefit category	Option B (millions 1995$)	TCF (millions 1995$)
Water-related Benefits		
Human health (Recreational fish consumption)	$2–$23	$2–$25
Recreational angling		
"Contaminant-free" fishery	$2–$19	$2–$19
Increased participation	–	–
Reduced Sludge Disposal Costs	$8–$16	$8–$16
Total Monetized Water-related Benefits	$12–$58	$12–$60

– Positive benefits expected but not estimated.

Combined annual air and water benefits related to Option B for all 155 mills regulated by today's rule, including final MACT I, proposed MACT II and BAT/PSES based on Option B, would total ($701) million to $1,491 million. Combined annual air and water benefits related to TCF, including final MACT I, proposed MACT II and BAT/PSES based on TCF would total ($701) million to $1,493 million.

J. Benefit-Cost Comparison Using Case Studies

Many benefits are highly site-specific. At proposal, EPA estimated the costs and benefits of the pulp and paper rule at three sites using a case study approach. EPA has expanded the case study analysis to incorporate additional sites. The case studies focus on water quality benefits, resulting from installation of BAT/PSES technologies, with air quality benefits modeled for case study mills as they are at the national level (see Section VIII.G.1, above). The three case studies at proposal were (1) the Penobscot River in Maine, (2) the Wisconsin River in central Wisconsin, and (3) the lower Columbia River in Washington and Oregon. In addition, a qualitative retrospective case study was conducted of the Leaf River in Mississippi. These case studies were selected to provide geographic representation of the impacts of the proposed rule, taking data availability into consideration.

For the final rule, the three quantitative case studies were updated to reflect EPA's revised analysis of costs, loadings, and human health risks to sport anglers. In consideration of environmental justice, EPA also evaluated health risks to Native American anglers in the Penobscot and Columbia River case study areas.

The four new case studies of monetized benefits analyze: (4) the Lower Tombigbee and Mobile River watersheds in Alabama, (5) the Pigeon River in North Carolina, (6) the Samoa Peninsula in California, and (7) the upper Columbia River in Washington State and British Columbia, Canada. These new case studies provide EPA with the first real empirical evidence of already-realized benefits that can be expected from adoption of the final BAT/PSES limits. Although a portion of the water-related benefits estimates in these newer case studies are based on actual outcomes from installing pollution control equipment (i.e., a retrospective analysis), estimates of the benefits of MACT standards in these case studies are prospective, based on expected future benefits.

The case studies compare costs and benefits at specific bleached papergrade kraft and soda mills in these seven areas across the country, some of which have not installed technologies comparable to the bases for BAT/PSES and some of which have installed such technologies, thereby allowing the retrospective assessment of BAT/PSES costs and benefits. Where mills have installed BAT-like technologies, capital investments may include: 70 percent to 100 percent substitution; oxygen delignification plus 100 percent substitution; and/or totally chlorine-free technologies.

EPA evaluated control cost estimates and air benefits for emission controls necessary to meet the MACT I and II standards on a prospective basis, assuming the level of controls currently existing at mills in the case study areas as a baseline.

As with the national-level analysis, significant water-related benefits are derived from removal of dioxin/furan from fish, and air-related benefits from improved agriculture and health from reduced ozone emissions. However, the case studies also address a wider range of water-related benefits, including some site-specific recreational benefits such as surfing, boating, white water rafting, non-consumptive uses and non-use benefits that result from improved color in the receiving water, improved odor and removal of health advisories. The case studies provide a more complete picture of the range of water-related benefits that may be expected from the rule, although a number of identifiable benefits, including improvements in ecological conditions and reductions of non-cancer health effects remain unquantified and unmonetized.

Benefits and costs for the case studies are summarized and compared in Table VIII–9. The monetized benefits range from two percent to 387 percent of BAT/PSES compliance costs. The case study results indicate that monetized benefits may be of the same order of magnitude as costs at individual sites.

From a water quality perspective, the case studies provide a cross-section of mills and receiving waters nationwide, including fast- and slow-moving streams, lakes and ocean waters.

Using receiving water and population characteristics, EPA attributed benefits from the case study sites to all bleached papergrade kraft and soda and papergrade sulfite mills. As a sensitivity analysis, EPA used the water quality benefits from the case studies to estimate the national level water quality benefits of the integrated final and proposed rule for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. Based on the case studies, monetized benefits from the water rules (Option A) would be expected to range from $91 million to $451 million per year, or from 35

or TCF (see the Economic Analysis, CN 14649, Chapter 8). Aggregate annual benefits attributed to MACT II range in value from $302 million to $384 million. Combining the benefits of the final and proposed air quality standards yields a range of total annual air quality benefits (damages) from ($713) million to $1,433 million.

2. Water Benefits

The water quality benefits described in this section include benefits for rejected BAT/PSES options for the Bleached Papergrade Kraft and Soda subcategory in combination with benefits for the selected BAT/PSES for the Papergrade Sulfite subcategory. (Benefits for the two CWA subcategories were also combined in Section VIII.G.2 for the selected BAT/PSES.) EPA estimated the human health benefits that could be expected if either of the rejected BAT/PSES options for the Bleached Papergrade Kraft and Soda subcategory—Option B or TCF—were implemented. For combined recreational and (non-Native American) subsistence angler populations using the same fish consumption rates EPA used for the selected BAT/PSES, Option B is projected to eliminate approximately 0.75 to 2.50 annual cancer cases from the baseline of 0.83 to 2.76 annual cancer cases projected to result from the mills' discharges at [mid-1995] levels, leaving a residual of 0.08 to 0.26 excess cancer cases per year. Here, as in Section VIII.G.2.b(1), excess cancer cases refers to cancer cases attributable solely to pulp and paper dioxin/furan discharges. This represents a reduction of 90 percent from baseline. The monetized value of this reduction is $2 to $23 million. TCF is projected to result in a reduction from the mid-1995 discharge baseline of 0.83 to 2.76 cases to 0.0 cases, which increases the benefits from TCF by $0.1 million to $2.7 million, compared to Option B. Because chlorine or chlorinated compounds are not used for bleaching, no dioxin formation was attributed to the mills under this option. Although some background dioxin cancer risk would remain that is attributable to sources other than current pulp and paper discharges, no residual cancer risk would remain from bleached papergrade kraft and soda mills.

For Native American subsistence fishermen, EPA evaluated cancer risks at baseline and under Option B. To estimate the maximum potential risk, EPA assumed that the entire population of the tribes with treaty-ceded fishing rights near pulp and paper mills would consume an average of 70g/person/day of TCDD/TCDF contaminated fish. With this level of consumption, the projected increased number of cancer cases for this population at baseline would be 0.14 cancer cases/year. EPA estimates that this number would decline to 0.007 cancer cases/year if BAT/PSES based on Option B were promulgated and to 0.0 cases/year if BAT/PSES based on TCF were promulgated.

Both Option B and TCF would result in the removal of 19 dioxin/furan-related fish consumption advisories on streams downstream from bleached papergrade kraft and soda mills. EPA estimates that non-dioxin advisories will remain on three of those streams. Therefore, here as in Section VIII.G.2.c, EPA did not monetize the benefits of removing the dioxin/furan fish consumption advisories on these streams. EPA estimates the value to anglers of the 16 "contaminant-free" fisheries as a result of removing these advisories to be $2 million to $19 million. EPA also estimates that recreational fishing would increase on these 16 streams by an estimated 115,000 angling days to 379,000 angling days post-compliance. However, the monetary value of this increase is not estimated because of the difficulty of determining the extent to which this increased participation reflects a net increase in fishing activity or merely a shift from other locations. These results are the same as those presented for the selected BAT/PSES. Because of dioxin removals, sludge disposal costs for both Option B and TCF could be expected to decline by $8 million to $16 million (see the Economic Analysis, DCN 14649, Chapter 8).

With respect to non-cancer human health benefits, none of the four pollutants with RfDs is estimated to exceed a non-cancer hazard quotient of 1.0 under baseline or under conditions associated with rejected Option B for recreational, subsistence, or Native American subsistence anglers. The same is true for the selected BAT/PSES. Similarly, Option B would reduce projected health-based AWQC exceedances to one facility for one pollutant (pentachlorophenol). Under TCF, EPA estimates that there would be no exceedances of health-based AWQCs. For dioxin, EPA estimates that Option B would reduce incremental exposure from fish consumption to a level that is not significantly different from ambient background exposure. Under TCF, chlorine and chlorinated compounds are not used for bleaching, and therefore no dioxin was attributed to mills under this option.

With respect to aquatic life benefits, EPA's modeling results show that, for the four pollutants exceeding chronic aquatic life criteria at 19 mills (up to 25 total exceedances), rejected Option B would reduce these exceedences to one pollutant (TCDD) at three mills (three total exceedences). TCF would reduce these exceedances to zero.

In addition to the benefits of reducing dioxin in fish, EPA investigated other potential benefits associated with Option B and TCF, including color, COD, AOX, and chronic sub-lethal toxicity.

Increased color in a receiving water can decrease light penetration there, thus resulting in shifts of phytoplankton community structure to undesirable species, reduced primary productivity (which can alter the trophic structure of fish communities), and elevated receiving stream temperatures. However, the actual impact on the receiving water of reducing color in mill effluent is highly site-specific and depends in particular on the natural color of the receiving water and other factors. Therefore, the monetized benefits will also be site-specific, to the extent that they can be determined at all. EPA is not promulgating national technology-based limitations or standards for color, but rather has determined that the potential aesthetic or aquatic impacts are best addressed on a site-specific basis by the permitting or pretreatment authority where necessary. See Section VI.B.3.e. Indeed, EPA notes that about eight mills currently have limitations for color in their NPDES permits, and an additional two mills have current color monitoring requirements where stream water quality requires such measures.

Lowering COD can protect the receiving water against oxygen depletion and is likely to reduce non-chlorinated organic compounds that cause chronic sub-lethal effects on aquatic life. Evidence indicates that this toxicity is associated at least in part with families of non-chlorinated organic materials. Several studies indicate that, as wastewater COD is reduced, indices of these chronic toxicity effects also are reduced. EPA is deferring regulation of COD to the individual permitting process for the time being, although EPA intends to promulgate effluent limitations guidelines and standards for COD for Subpart B mills in the future. See Section VI.B.3.d.

Although a statistically significant relationship between AOX and adverse environmental effects has not been established, EPA believes that reduction of AOX (a valid measure of the total chlorinated organic matter) will result in water quality benefits. See Section VI.B.3.c. However, these cannot be quantified at this time.

TABLE VIII–6.—MONETIZED WATER QUALITY BENEFITS OF FINAL BAT/PSES FOR BLEACHED PAPERGRADE KRAFT AND SODA AND PAPERGRADE SULFITE MILLS

Benefit category	Final BAT/PSES (millions 1995$)
Water-related Benefits	
Human health (recreational fish consumption)	$2–$22
Recreational angling	
"Contaminant-free" fishery	$2–$19
Increased participation	-
Reduced Sludge Disposal Costs	$8–$16
Total Water-related Benefits	$12–$57

- Positive benefits expected but not estimated.

H. Comparison of Costs and Benefits

This section provides the individual and combined costs, economic impacts, and benefits of the proposed and final CAA and CWA pulp and paper regulations described in earlier sections. See Table VIII–7. The costs and benefits of the CAA (MACT) rules apply to all 155 kraft, soda, sulfite and semi-chemical mills subject to final or proposed MACT requirements, while the costs and benefits for the final CWA (BAT/PSES) regulations apply to the 96 mills in the Papergrade Sulfite and Bleached Papergrade Kraft and Soda subcategories.

Using the pre-tax annualized cost estimates reported in Section VIII.C, net monetized air-related benefits are estimated to range between net costs of $1,165 million to net benefits of $929 million per year for the final MACT I rule considered in combination with the pre-tax annualized cost estimates for the final BAT/PSES. Pre-tax annualized cost estimates are used as a proxy for the social costs of the rules. Net benefits of the proposed regulatory alternative for MACT II are $270 million to $352 million. Thus, the range of net benefits (disbenefits) of the final and proposed air quality standards is ($896) million to $1,281 million.

EPA did not estimate annual net benefits for the final BAT/PSES for the Papergrade Sulfite and Bleached Papergrade Kraft and Soda subcategories because so many categories of benefits are unmonetized that the comparison would be misleading.

TABLE VIII–7.—SUMMARY OF COSTS, ECONOMIC IMPACTS AND BENEFITS

	MACT I	MACT II	Combined air rules	Final BAT/PSES	MACT I and final BAT/PSES (96 mills)	MACT I, MACT II, and final BAT/PSES (96 mills)	MACT I, MACT II, and final BAT/PSES (155 mills)
Capital Costs	$501	$258	$759	$1,039	$1,394	$1,524	$1,799
Pre-Tax Annualized Costs*	$125	$32	$157	$263	$351	$366	$420
Monetized Annual Benefits	($1,040)–$1,054	$302–$384	($739)–$1,438	$12–$57	($1,028)–$1,111	NE	($727)–$1,495
Net Annual Benefits (Benefits-Costs)	($1,165)–$929	$270–$352	($896)–$1,281	NE	NE	NE	NE
Projected Mill Closures	0	0	1	1	2	3	3
Potential Job Losses (due to mill closures)	0	0	ND	ND	900	ND	ND
Projected Firm Failures	0	0	0	0	0	0	0

* Pre-tax costs are greater than the post-tax annualized costs shown in Tables VIII–1 and VIII–3.
Net costs (where costs exceed benefits) are shown in parentheses.
NE = not estimated.
ND = not disclosed to protect confidentiality.
Figures in table reflect rounding.

I. Costs and Benefits of Rejected Options for the Bleached Papergrade Kraft and Soda Subcategory—Option B and TCF

1. Air Benefits

As noted in Section VIII.F.1, the oxygen delignification technology used as a component of Option B and TCF increases emissions of certain pollutants and, hence compliance costs to meet MACT I standards; the implementation of additional MACT controls, however, also increases MACT-related removals. As a result, both MACT I costs and benefits increase where oxygen delignification is utilized. (As noted above, only VOC, PM, and SO_2 benefits are monetized here.) However, because the MACT I technologies control all of the increased emissions associated with oxygen delignification, there is no increased net benefit of the CWA and CAA technologies to ambient air quality. Rather, the net monetized benefits of MACT I in combination with Option B or TCF are equivalent to the monetized benefits of MACT I in combination with the final BAT/PSES. Thus, MACT I benefits associated with reducing VOCs under either Option B or TCF range from $29 million to $1,050 million. MACT II VOC reduction benefits range from $2 million to $84 million. Therefore, total monetized VOC benefits of the air quality standards under either Option B or TCF are $31 million to $1,134 million. PM related disbenefits for MACT I are $1 million, while MACT II PM benefits are $300 million for a total PM benefit of approximately $299 million, for either Option B or TCF. SO_2 related disbenefits for MACT I are from $1,043 million down to $0, while MACT II SO_2 benefits are from $0.1 to $0.3 million.

Total monetized benefits (disbenefits) for MACT I are ($1,015) million to $1,049 million under BAT/PSES Option

.ich is less than estimated background
'els for the United States.
(2) Impact of BAT/PSES Controls on
)xin/Furan-Related Fish
'nsumption Advisories. EPA estimates
at all 19 dioxin/furan-related fish
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)wnstream of papergrade sulfite and
eached papergrade kraft and soda
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ted some time after the rule is
1plemented. Recent evidence indicates
.at dioxin/furan fish tissue
)ncentrations decline within several
ears of removing dioxin/furan
:scharges, which is more rapidly than
reviously thought (see Chapter 9 of the
:onomic Analysis, DCN 14649). EPA
:counts for potential latent dioxin/
.uran contributions from sediment to
.sh tissue by assuming a three-year lag
efore cancers from fish tissue
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.uran-related fish tissue advisories are
ifted.

(3) Exceedances of Human Health-Based Ambient Water Quality Concentrations (AWQCs). EPA also has compared the modeled in-stream pollutant concentrations to human health water quality criteria or other toxic effect values, which are referred to as health-based AWQCs. Exceedances of health-based AWQCs indicate existing human health-based water quality problems.

EPA has analyzed the health-based AWQCs for the ingestion of organisms and the ingestion of water and organisms based on the simple dilution model. EPA estimates that no mills exceed the health-based AWQCs for ingestion of organisms only under baseline conditions or under the final rule. With respect to the ingestion of water and organisms, at baseline, three mills exceed AWQCs for two pollutants, chloroform and pentachlorophenol (a total of four exceedances). Under the rule, only one mill exceeds AWQCs (for pentachlorophenol).

EPA did not estimate exceedances of AWQCs for dioxin and furan because the simple dilution model is not well-suited for use in estimating human health effects associated with water column concentrations of hydrophobic chemicals like dioxin and furan. EPA did not use the DRE model for this analysis for dioxin/furan because results of the DRE model would not be comparable with AWQCs.

(4) Aquatic Life Benefits. EPA used the simple dilution approach to estimate exceedances of aquatic life AWQCs. This is a conservative approach that assumes all pollutants (including dioxin and furan) discharged to receiving streams are available to the biota. Although hydrophobic chemicals such as dioxins and furans will be associated primarily with suspended particulates and sediments, some concentrations will also be found in the water column near the discharge point. This is particularly true if discharges are assumed to be continuous because even though the pollutants might eventually become associated with suspended solids and sediment, they would also be present in the water column in the vicinity of the discharge on an ongoing basis prior to partitioning. Therefore, although it is conservative, EPA believes that the simple dilution approach provides a reasonable estimate of impacts to aquatic life.

EPA compared modeled in-stream concentrations of toxic discharges to EPA's aquatic life AWQCs. EPA's modeling results show that receiving water concentrations for up to four pollutants (of 15 pollutants with chronic aquatic life AWQCs) at 19 mills exceed aquatic life criteria at baseline discharge levels (up to 25 total exceedances). The final BAT/PSES for the papergrade sulfite and Bleached Papergrade Kraft and Soda subcategories are projected to reduce these exceedances to one pollutant (TCDD) at six mills (six total exceedances). On average, the selected BAT/PSES will reduce color of effluent by approximately 2.5 percent compared to current discharges. This color reduction may have some aquatic life or recreational benefits depending on the natural color of the receiving water, but they are not quantifiable or monetizable at this time.

c. Monetization of Water Quality Benefits. Monetized benefits of the final BAT/PSES for mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories are presented in Table VIII–6. EPA has monetized the human health benefits resulting from elimination of 0.73 to 2.41 cancer cases per year for the nation as a whole (see Section VIII.F.2.b.(1)). The projected benefits range from $2 million to $22 million.

EPA estimates the value to anglers of contaminant-free fisheries as a result of lifting 16 of the 19 dioxin/furan-related fish consumption advisories to be $2 million to $19 million. (Because these values are based on a benefits transfer from a study of contamination of the Great Lakes trout and salmon fishery, which may differ greatly from some of the areas affected by this rule, these values provide only a general sense of the magnitude of the benefits of the rule.) Because non-dioxin/furan fish consumption advisories (PCBs and mercury) will remain in place on three streams, EPA did not monetize the benefits of removing the dioxin/furan fish consumption advisories on these streams. EPA also estimates that recreational fishing would increase on the 16 streams by 115,000 angling days to 379,000 angling days post-compliance. However, the monetary value of this increase is not estimated because of the difficulty of determining the extent to which this increased participation reflects a net increase in fishing activity or merely a shift from other locations (see the Economic Analysis, DCN 14649, Chapter 4).

Because of dioxin/furan removals due to compliance with BAT limitations and PSES, sludge from pulp and paper mills may be disposed of through land application, instead of more costly landfilling or incineration. (Pursuant to a January 1994 Memorandum of Agreement between EPA and the American Forest and Paper Association (AF&PA), a maximum dioxin/furan concentration of 50 ppt is allowed for land application of sludge or a sludge-derived product. See DCN 14399). Mill sludge disposal costs could be expected to decline by $8 million to $16 million. EPA estimated these values based on the reduced tonnage of expected dioxin/furan-contaminated sludge, which in turn was based on the proportional reduction of dioxin/furan in effluent (see the Economic Analysis, DCN 14649, Chapter 8).

Total monetized water-related benefits for all the above categories range from $12 million to $57 million.

As noted previously, the above estimates do not include the benefits that have been identified but not monetized, such as health effects for Native American subsistence fishermen, reduction in AWQC exceedances, reduction of projected non-cancer effects and improvements in fish and wildlife habitat.

Chapters 4 and 8 of the Economic Analysis (DCN 14649).

EPA is also updating fish consumption rates used to estimate cancer and non-cancer hazards. At proposal, EPA used 25 g/day for recreational anglers, and 145 g/day for subsistence anglers. The revised estimates are 21 g/day for recreational anglers and 48 g/day for subsistence anglers, based on data provided by the nationally based "Continuing Survey of Food Intake by Individuals" (CSFII), conducted by the U.S. Department of Agriculture. EPA is also using an updated fish consumption rate for Native American subsistence populations of 70 g/day, based on two studies (CRIFTC, 1994; Wolfe and Walker, 1989, in rulemaking record). This consumption rate represents an average fish consumption rate for Native Americans. (See Environmental Justice Analysis in Chapter 8 of the Economic Analysis, DCN 14649).

Projected individual cancer risks differ among the evaluated mills and among recreational, subsistence, and Native American subsistence fishermen due to the differences in consumption rates. TCDD and TCDF contribute most of the estimated cancer risks. The final BAT/PSES for the papergrade sulfite and Bleached Papergrade Kraft and Soda subcategories are projected to reduce average baseline individual cancer risks up to about one order of magnitude for each affected group—recreational, subsistence, and Native American subsistence populations. At both baseline and post-compliance, Native American subsistence populations are at about one order of magnitude higher risk than recreational anglers and less than one order of magnitude higher risk than subsistence fishermen in this assessment because of their comparatively higher fish consumption rates.

At proposal, EPA estimated exposed recreational and subsistence fishermen based on a comparison of creel survey results to licensed anglers in counties adjoining pulp mill streams. Based on these surveys, EPA estimated that 29 percent of county fishermen would use affected stream reaches and therefore could be exposed to contaminated fish. Since proposal, EPA has considered additional recreational angler survey information and has determined that a range of 10 percent to 33 percent of adjacent county-licensed anglers provides effective upper and lower bounds to the fishing effort expected on most affected stream segments. EPA's benefit estimation methodology is described in Chapter 4 of the Economic Analysis (DCN 14649).

EPA estimated the reduced annual cancer cases for combined recreational and subsistence angler populations as a result of the final BAT/PSES for the Papergrade Sulfite and Bleached Papergrade Kraft and Soda subcategories. The projected number of increased cancer cases for this population under baseline conditions due to pulp and paper discharges is 0.83 to 2.76 annual cancer cases. EPA estimates this number would decline to 0.1 to 0.35 excess cancer cases per year after implementation of the final BAT/PSES, thus eliminating approximately 0.73 to 2.41 annual cancer cases.

For Native American subsistence fishermen, EPA evaluated an upper bound total risk at baseline and post-compliance with the selected BAT/PSES. EPA assumed that the total population of the tribes with treaty-ceded fishing rights near pulp and paper mills consumed an average of 70 g/person/day of TCDD/TCDF contaminated fish. The projected number of increased cancer cases for this population under baseline conditions due to pulp and paper discharges is 0.14 annual cancer cases. EPA estimates this number would decline to 0.008 excess cancer cases per year after implementation of the final BAT/PSES.

With respect to non-cancer benefits, EPA examined the current discharge of four pollutants that have reference doses (RfDs) contained in EPA's Integrated Risk Information System (IRIS). The four pollutants are chloroform, pentachlorophenol, 2,3,4,6-tetrachlorophenol, and 2,4,5-trichlorophenol. The RfD represents an estimate, with uncertainty spanning perhaps an order of magnitude, of daily exposure—expressed in milligrams per kilogram of body weight per day (mg/kg/day)—that is likely to be without an appreciable risk of deleterious effects to a given population during a lifetime. (EPA notes that this analysis considers only the contribution of Subpart B and E pulp and paper current discharge effluent to the RfD; the contribution from other sources (background level of exposure) is not evaluated.)

For the four pollutants with RfDs in IRIS, EPA used the simple dilution model to determine fish tissue concentrations. EPA then estimated whether human consumption of fish by recreational, subsistence, and Native American subsistence populations exposed to the pollutants below pulp and paper mills would exceed a chemical-specific noncancer hazard quotient of 1.0. Hazard quotients are based on the relationship between fish tissue concentrations, fish consumption, and RfDs. If a hazard quotient exceeds 1.0, adverse effects might occur. None of the four pollutants with RfDs in IRIS is estimated to exceed a non-cancer hazard quotient of 1.0 under baseline or BAT/PSES conditions for recreational, subsistence, or Native American subsistence anglers.

EPA did not use the reference dose (RfD) approach to evaluate potential noncancer effects associated with dioxin/furan. The use of an RfD for dioxin/furan presents special problems. If EPA were to establish an RfD for dioxin/furan using the standard conventions of uncertainty, the RfD value would likely be one to two orders of magnitude below average background population exposure. As stated above, the RfD is a level that is likely to be without an appreciable risk; it is not an "action level" or exposure level where non-cancer effects are predicted. Where the RfD is below background levels, and where effects are not readily apparent at background levels, it is not appropriate to use the RfD for quantifying benefits.

As an alternative to using the RfD, EPA evaluated potential noncancer effects of dioxin/furan by comparing the modeled incremental exposure of dioxin/furan from fish consumption (based on results from the DRE model) to estimated ambient background levels (i.e., 120 picograms of toxic equivalents/day (pgTEQ/day)). EPA estimates that adverse impacts associated with dioxin/furan exposures may occur at or within one order of magnitude of average background exposures. As exposures increase within and above this range, the probability and severity of human noncancer effects most likely increases. EPA's analysis shows that the estimated dioxin/furan exposure from pulp and paper effluent at baseline exceeded estimated ambient background exposure by an order of magnitude for two mills, with the size of the exposed population ranging from 4,910 to 16,205 recreational and subsistence anglers. The selected BAT/PSES are projected to reduce the incremental exposure from fish consumption to a level that was not significantly different from estimated ambient background exposure. The size of the recreational and subsistence angler population exposed to dioxin/furan doses exceeding one order of magnitude greater than the background level would be zero under the selected BAT/PSES.

For Native American subsistence populations with treaty-ceded fishing rights, the maximum dioxin/furan exposure under baseline conditions is projected to be 803 pgTEQ/day. Under the selected BAT/PSES, the maximum exposure is reduced to 39 pgTEQ/day.

benefits. For MACT II, all emission reductions are valued. Using the range of values for the average benefit per Mg for SO_2 and the assumptions for the ranges in emissions, monetized annual SO_2 disbenefits of MACT I range from (1,064 million down to $0. For the proposed MACT II alternative, total annual SO_2 benefits are from approximately $0.1 to $0.3 million. Therefore, total monetized SO_2 benefits (disbenefits) of the integrated rule are approximately ($1,064) million to $0.3 million.

Summing the monetized benefits and disbenefits for VOC, PM, and SO_2 emission changes provides a range of total annual benefits (disbenefits) for MACT I of approximately ($1,040) million to $1,054 million. Aggregate annual benefits attributed to MACT II range in value from $302 million to $384 million. Combining the benefits of the final and proposed air standards yields a range of total annual benefits from approximately ($739) million to $1,438 million.

These benefits are incomplete due to EPA's inability to quantify many benefit and disbenefit categories including individual health and welfare endpoints as well as the benefits and disbenefits of controlling entire pollutant categories. Pollutant categories that are not monetized are HAPs, TRS, CO, and NO_x.

c. Uncertainties Associated With Air Quality Benefits. Benefit per Mg estimates used to monetize PM and VOC emission reductions are uncertain because average benefit per Mg values do not take into account location-specific information such as the population exposed. The location-specific information is expected to have a significant effect on the estimated benefits associated with these emission reductions. Also, lack of information for several benefit categories precludes a complete quantification of all benefit categories (or disbenefits for pollutant increases).

2. Water Quality Benefits

This section describes environmental and human health benefits expected as a result of implementing new BAT/PSES limits at 92 of the 96 mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. (EPA estimated benefits for 92 mills because it did not have effluent discharge information from 3 mills and did not have receiving stream flow data for 1 mill). Because EPA was not able to project the number of new sources, EPA attributes no benefits to the final NSPS or PSNS regulations. Discharge of toxic, nonconventional, and conventional pollutants into freshwater, estuarine, and marine ecosystems may alter aquatic habitats, affect aquatic life, and adversely impact human health. See Section VII.B.2. Chlorinated organic compounds from chlorine bleaching, particularly 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and 2,3,7,8-tetrachlorodibenzofuran (TCDF) are human carcinogens and human systemic toxicants and are toxic to aquatic life. These pollutants are persistent, resistant to biodegradation, and bioaccumulative in aquatic organisms. As of December 1995, states have issued 19 dioxin/furan-related fish consumption advisories near 18 papergrade sulfite and bleached papergrade kraft and soda mills (EPA, *National Listing of Fish Consumption Advisories*, June 1996).

EPA's analysis of these environmental and human health risk concerns and the water-related benefits resulting from the final effluent limitations guidelines and standards for these two subcategories is contained in the "Water Quality Assessment of Final Effluent Limitations Guidelines for the Papergrade Sulfite and Bleached Papergrade Kraft and Soda Subcategories of the Pulp, Paper, and Paperboard Industry" (WQA) (DCN 14650).

a. Qualitative Description of Water-Related Benefits. The final BAT limitations and PSES promulgated today for Subparts B and E will benefit aquatic life by reducing the pulp and paper industry's discharge of toxic and nonconventional pollutants, including a 91 percent reduction in TCDD and TCDF, a 69 percent reduction in AOX, an 83 percent reduction in chloroform, and an 82 percent reduction in chlorinated phenolic pollutants compared to mid-1995 discharge levels. Toxic and nonconventional pollutants will be reduced to levels below those considered to impact biota in many receiving waters. Pollution reduction numbers are provided in Section VII.B.2. Such impacts include acute and chronic toxicity, sublethal effects on metabolic and reproductive functions, and loss of prey organisms. Chemical contamination of aquatic biota may also directly and indirectly impact local pescivorous wildlife and birds.

b. Quantitative Estimates of Water-Related Benefits. EPA has quantified human health and aquatic life benefits using a site-specific analysis for baseline conditions and for the conditions that would result from pollutant removals under the rule. The final BAT limitations and PSES for Subparts B and E would result in a significant reduction of dioxins and furans in fish tissues. As a result, the largest quantifiable and monetizable water benefit is a reduction in number of potential excess cancer cases from the consumption of contaminated fish by recreational and subsistence anglers. The next largest category of monetized benefits includes recreational fishing benefits derived from lifting of all 19 existing dioxin/furan-related fish consumption advisories in waters downstream from mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. Removing fish consumption advisories would be expected to increase the number of recreational anglers at sites where advisories are lifted and to increase fishing enjoyment by existing anglers. Three of the 19 receiving streams with dioxin/furan-related fish consumption advisories also have advisories in place for other contaminants (from other sources) that will not be affected by this rule. No monetized benefits are expected to accrue for these streams at this time. Quantified, non-monetized benefits include reduction in exceedances of aquatic life and health-based ambient water quality concentrations.

(1) Fish Consumption Cancer Risks and Non-cancer Hazards. Upper-bound individual cancer risk, aggregate risk, and non-cancer hazards from consuming contaminated fish are estimated for recreational, subsistence, and Native American subsistence anglers. At proposal, concentrations of carcinogenic and systemic toxicants in fish were estimated using two site-specific models—a simple dilution model and EPA's draft Dioxin Reassessment Evaluation model (DRE)(DCN 14650). For the final rule, EPA used only the DRE model to estimate TCDD and TCDF levels in fish below 92 mills discharging into 73 receiving streams, as well as individual cancer risks and non-cancer hazards. Of these mills, two in the Bleached Papergrade Kraft and Soda subcategory discharge through the same pipe and therefore were treated as a single discharger. As a result, a total of 91 discharges from 92 mills were evaluated for the water quality assessment. EPA continues to use the simple dilution model to evaluate other chlorinated organics (i.e., three carcinogens and four systemic toxicants). EPA believes the DRE approach provides more reliable estimates of dioxin and furan fate and transport in the environment for use in human health assessments. The reasons for relying exclusively on the DRE for assessing impacts due to dioxin and furan are explained in greater detail in

welfare is associated with elevated concentrations of fine particles which reduce visibility, damage materials, and cause soiling. The integrated rule will decrease the adverse effects of PM.

CO is a colorless, odorless gas that is toxic to mammals. When inhaled, it combines with hemoglobin, which reduces the oxygen-carrying capacity of blood and results in less oxygen being transported to vital organs of the body. This can have detrimental effects on the cardiovascular, central nervous, and pulmonary systems. The reduction of CO emissions will diminish these potential effects.

SO_2 oxidizes in water to form both sulfurous and sulfuric acids. When SO_2 dissolves in the water of the respiratory tract of humans, the resulting acidity is irritating to the pulmonary tissues, causing nasal irritation and breathing difficulties (especially to individuals with respiratory diseases such as asthma). When SO_2 dissolves in the atmosphere in rain, fog, or snow, the acidity of the deposition can corrode various materials and cause damage to both aquatic and terrestrial ecosystems. SO_2 can also transform into $PM_{2.5}$, the effects of which are discussed above.

b. Monetized Air Quality Benefits. Table VIII–5 below presents both the health and welfare benefits described in this section as well as the emission reductions identified in Section VII.B.1 that are not monetized but are considered in the evaluation of benefits.

The benefit transfer method is utilized to value a subset of the pollutants discussed above (VOC, SO_2, and PM). This method relies on previous benefit studies that have been conducted for the same pollutants that are impacted by the pulp and paper rulemaking. These studies provide useful data that can be transferred across contexts in order to approximate the benefits of the pulp and paper emission reductions.

TABLE VIII–5.—EMISSIONS REDUCTIONS AND ANNUAL AIR QUALITY BENEFITS

Pollutant	Standard					
	MACT I		MACT II		Combined	
	Decrease (Mg)	Value (SMM)	Decrease (Mg)	Value (SMM)	Decrease (Mg)	Value (SMM)
HAPs	139,000	NE	2,600	NE	142,000	NE
TRS	79,000	NE	—	NE	79,000	NE
NO_X	(5,200)	NE	(500)	NE	(5,700)	NE
VOC	409,000	24–1,055	32,600	2–84	441,000	26–1,139
PM	(83)	(1)	24,000	300	24,000	299
CO	(8,700)	NE	58,000	NE	49,000	NE
SO_2	(94,500)	(1,064)–0	30	0.1–0.3	(94,400)	(1,064)–0.3
Total	.....	(1,040)–1,054	.....	302–384	.....	(739)–1,438

NE = not estimated.
Numbers in parentheses ( ) indicate emissions increases or negative benefits values.
Numbers in table rounded.

For VOCs, benefits are valued using estimates of a range of the average benefit per Megagram (Mg) derived from a recent benefit analysis conducted by EPA in the process of revising the ozone national ambient air quality standard (NAAQS) (see docket no. A–95–58: Regulatory Impact Analysis for the Particulate Matter and Ozone NAAQS and proposed Regional Haze Rule; July 1997). EPA values a range of VOC benefits reflecting (1) an assumption that the transfer of benefits must correlate with the areas that violate the ozone standard, and (2) an assumption that recognizes that reductions outside areas of violation of the ozone standard can have a positive benefit. Therefore, the range of values reflects the application of a range of values for the average benefit per Mg as they are applied to (1) the subset of VOC emission reductions in areas of violation, and (2) to all VOC emission reductions expected to be achieved by the integrated rule. The true value is likely to fall within this range. Using the range of values of the average benefit per Mg for ozone, monetized annual VOC benefits of MACT I emission reductions range from $24 million to $1,055 million. The lower-end of this range reflects an assumption of zero mortality effects associated with ozone exposure and assumes morbidity benefits occur only in areas predicted to violate the ozone standard, while the upper-end includes mortality estimates as are calculated for the upper-end of the range of ozone benefits is included in the NAAQS RIA and assumes morbidity benefits occur in all areas. For the proposed MACT II alternative, total annual VOC benefits range in value from approximately $2 million to $84 million. Therefore, total monetized VOC benefits of the integrated rule are approximately $26 million to $1,139 million.

For PM, a benefit transfer estimate is obtained from a benefit analysis of PM_{10} that was prepared to support the evaluation of the revised PM NAAQS (see Appendix C of the Regulatory Impact Analysis for the Particulate Matter and Ozone NAAQS and proposed Regional Haze Rule; July 1997). The average benefit per Mg derived from this study is applied to all changes in emissions of PM that result from the integrated rule. Using this value, the *loss* in total monetized annual PM benefits associated with MACT I is approximately $1 million. The proposed MACT II alternative achieves a *positive* benefit approximately equal to $300 million. Thus the combined value of PM benefits for the final and proposed pulp and paper air standards is $299 million.

For SO_2, the EPA transfers a benefit estimate from a national SO_2 strategy analysis conducted for the evaluation of the revised PM NAAQS (see docket no. A–95–54: Regulatory Impact Analysis for the Particulate Matter and Ozone NAAQS and proposed Regional Haze Rule; July 1997). This analysis shows that benefit values are higher in the eastern regions of the country when compared to the western regions. Therefore, EPA derives a range of benefit per Mg values for each segment of the country. In addition, EPA takes into consideration the uncertainty inherent in the estimate of MACT I SO_2 emission increases that may result from the rulemaking. Therefore for MACT I, EPA values all SO_2 emission increases to obtain a lower bound estimate of (negative) benefits and assumes zero emission increases due to the likely effects of mitigating behavior to obtain an upper bound estimate of zero

other impacts remain unchanged. EPA conducted no additional economic analysis for this combination of costs.

2. Implications of Results

The costs of either Option B or TCF are projected to cause one or more firm failures (bankruptcies). This is true even when the BAT/PSES costs are considered without the compliance costs associated with MACT I and/or MACT II. Although EPA cannot determine the actual outcome of the projected failures in terms of lost production, closed facilities, and lost jobs, the level of displacement would almost certainly cause detrimental impacts to the U.S. pulp and paper industry. Section VI.B.5.a(5) discusses EPA's reaction to these projected impacts in terms of regulatory decisions. See also Chapter 6 of the Economic Analysis, DCN 14649. That discussion also includes the Agency's findings that the rejected BAT/PSES options are not economically achievable.

G. Benefits

In addition to costs and impacts, EPA also estimated the environmental and human health benefits of implementing the CAA and CWA requirements. Section VII of this preamble describes the estimated reductions in air emissions and effluent discharges. The incremental environmental improvements noted in Section VII.B. are derived compared to a baseline of current emissions and discharges. Because current emissions and discharges are a function of current technology, this is the same baseline that was used to establish the costs of complying with the rules. To the extent the total benefits of the rule can be measured, costs can be directly compared to benefits.

EPA is confident that its estimation of compliance costs is a full and accurate account of such costs; EPA is less confident that the estimation of benefits is similarly complete. EPA is not currently able to quantitatively evaluate all human and ecosystem benefits associated with air and water quality improvements. EPA is even more limited in its ability to assign monetary values to these benefits and therefore to be able to compare them to costs in a standard cost-benefit framework. A comparison of costs to only the limited monetized subset of benefits severely underestimates the true benefits of environmental quality improvement and compromises the validity of a cost-benefit analysis. The economic benefit values described below and in the Economic Analysis (DCN 14649) should be considered a limited subset of the total benefits of these rules, and should be evaluated along with descriptive assessments of benefits and the acknowledgment that even these may fall short of the real-world benefits that will result from the rule.

1. Air Quality Benefits

Section VII.B.1 of this preamble describes the emissions reductions expected as a result of implementing MACT I and MACT II standards. Implementation of the final MACT I standard is expected to reduce emissions of HAPs, VOCs, and TRS, but increase emissions of PM, SO_2, CO, and NO_X. The proposed alternative for MACT II is expected to reduce emissions for HAPs, VOCs, PM, TRS, CO, and SO_2, while it is expected to create a slight increase in NOx emissions. The technology bases for BAT/PSES have secondary impacts on the level of air emissions. The combined effect of MACT I and MACT II for all subcategories regulated under the CAA is to decrease emissions for all of the above mentioned pollutants except NO_X and SO_2. See Table VIII–5 below. EPA performed an evaluation of the benefits associated with the air regulations based on the emission reductions estimated in Section VII.B.1. The net change in air benefits expected to result from the changes in emissions will be a change in adverse health effects associated with inhalation of the above pollutants as well as changes in welfare effects such as improved visibility and crop yields, and reduced materials soiling and corrosion. Chapter 4 of the EA presents a detailed description of the methodology used to monetize the benefits.

a. Qualitative Description of Pollutant Effects. The air rules are designed to reduce the emission of HAPs as defined in Section 112 of the CAA. Several of these HAPs are classified as probable or possible human carcinogens. Reducing the emissions of these pollutants is expected to reduce the cancer risk of the exposed population. Other HAPs are not classified as carcinogens; however, they have been shown to cause other adverse health effects such as damage to the eye, central nervous system, liver, kidney, and respiratory system when the concentration of these emissions is above the health reference benchmark for human exposure.

Total reduced sulfur (TRS) emissions cause the malodorous smell often associated with areas near pulp and paper mills. The MACT standards will reduce these effects significantly. Odorant stimulants of the nasal receptors that are associated with TRS emissions have been associated with marked respiratory and cardiovascular responses, however, the association is not direct because the perception of the odor does not necessarily cause toxic effects. The threshold for odor detections may occur before the onset of toxic effects. However, the absence of odor does not guarantee safety since some components of TRS emissions can cause fatigue of the olfactory senses, so individuals may not perceive an odor on some occasions when toxic effects can occur. There are numerous anecdotal reports of adverse reactions related to odors associated with TRS, including headaches, shortness of breath, nasal irritation, and, in some cases, nausea and sinus congestion.

VOC and NO_X emissions interact in the presence of sunlight to create ground-level ozone. Recent scientific evidence shows an association between elevated ozone concentrations and increases in hospital admissions for a variety of respiratory illnesses and indicates that ground-level ozone not only affects people with impaired respiratory systems (such as asthmatics), but healthy adults and children as well. Adverse welfare effects of ozone exposure include damage to crops, tree seedlings, ornamentals (shrubs, grass, etc.), and forested ecosystems. The reactions between VOCs and NO_X to form ozone depend on the balance in concentrations of each pollutant found in the ambient air. For example, when the concentration of NO_X is high relative to the concentration of VOCs, VOC reductions are effective in limiting ozone formation, while NO_X reductions in that situation are ineffective. The integrated rule is expected to increase NO_X emissions, but decrease VOC emissions. The increase in NO_X is not expected to cause significant adverse health or environmental impacts because the magnitude of this increase is much less than the magnitude of the VOC emission reduction. The VOC reductions are expected to contribute to the decrease in ozone concentrations.

The adverse human health effects associated with PM include: premature mortality; aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions and emergency room visits, school absences, work loss days, and restricted activity days); changes in lung function and increased respiratory symptoms; alterations in lung tissue and structure; and altered respiratory tract defense mechanisms. Populations at greater risk from exposure are: individuals with respiratory disease and cardiovascular disease, individuals with infectious disease, elderly individuals, asthmatic individuals, and children. Reduced

the costs and impacts of the rejected BAT/PSES options, MACT I, and MACT II.

TABLE VIII–4.—COSTS AND ECONOMIC IMPACTS OF REJECTED BAT/PSES OPTIONS FOR THE BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY

Costs & Impacts	Rules					
	Option B (BAT/PSES)	TCF (BAT/PSES)	Option B (BAT/PSES)+ MACT I	TCF + (BAT/PSES) MACT I	Option B (BAT/PSES) MACT I & MACT II	TCF, (BAT/PSES) MACT I & MACT II
Capital Costs ($MM)	2,100	3,100	2,600	3,600	2,700	3,700
Post-Tax Annualized Costs ($MM)	216	688	292	764	300	772
Mill Closures	2	7	4	9	ND[1]	9
Firm Failures	[3]	[3]	[3]	[3]	[3]	[3]
Job Losses (from mill closures)	900	7,100	4,800	10,200	ND	10,200
Decreased Shipments ($MM)	273	2,300	1,300	3,200	ND	3,200
Decreased Exports ($MM)	19	308	24	310	ND	310
Direct and Indirect Effects ($MM)	795	NR	3,850	NR	ND	NR

[1] ND: not disclosed to protect confidential business information.
[2] NR: not reported.
[3] 1 or more.

Option B: The BAT/PSES capital costs for Option B for the Bleached Papergrade Kraft and Soda subcategory are estimated at $2.1 billion; O&M costs are $87 million; and annualized costs are $216 million. These costs result in two projected mill closures, with direct impacts of at least 900 jobs lost, $273 million in decreased shipments, $19 million in decreased exports, and one or more potential firm failures. The firm failures may also result in thousands of additional jobs lost (see Section VI.B.5.a(5) and Chapter 6 of the Economic Analysis, DCN 14649). Indirect and direct economic loss (i.e., losses throughout the economy as a result of the closed mills) would be approximately $795 million. The mill closures are projected to increase county unemployment rates for the affected counties by 0.4 percent and 0.7 percent, respectively.

EPA also calculated cost-effectiveness ratios for Option B for this subcategory (for Option A results, see Section VIII.D.4, above). For direct dischargers, the average and incremental (compared to Option A) cost-effectiveness ratios are $15 per toxic pound-equivalent and $36 per toxic pound-equivalent, respectively (1981 dollars). For indirect dischargers, the incremental cost-effectiveness (compared to Option A), is $115 per toxic pound-equivalent.

Option B and MACT I: The combined capital costs for Option B and MACT I for mills in this subcategory are estimated at $2.6 billion; O&M costs are $154 million; and annualized costs are $292 million. MACT I annualized costs are greater under Option B than under Option A due to the additions of MACT controls for oxygen delignification equipment installed to comply with Option B. With the combined costs of Option B and MACT I, the number of projected mill closures increases to four, and the estimated number of firm failures remains unchanged at one or more. The four closures cause losses of approximately 4,800 jobs, $1.3 billion in shipments, and $24 million of exports. Direct and indirect losses would total nearly $4 billion. The mill closures are also projected to increase county unemployment rates; the range of increased unemployment for the affected counties is from less than 0.5 percentage points to nearly 10 percentage points (as a hypothetical example, from a baseline county unemployment rate of 10 percent to 10.5 percent after a closure in County X and from a baseline of 10 percent to 20 percent after a closure in County Y).

Option B, MACT I, and MACT II: The combined capital costs for Option B, MACT I, and proposed MACT II for mills in this subcategory are estimated at $2.7 billion; O&M costs are $153 million; and annualized costs are $300 million. With the combined costs of Option B, MACT I, and MACT II, the number of projected mill closures increases (number not disclosed), and the estimated number of firm failures remains unchanged at one or more. The analysis projects additional losses to jobs, shipments, and exports from the additional mill closures (amounts not disclosed). Direct and indirect losses would also increase, as would the unemployment rates in the counties in which the mill closures are located.

TCF: The capital costs for retrofitting mills in this subcategory for TCF technology are estimated at $3.1 billion for TCF based on peroxide bleaching and $5.6 billion for TCF based on ozone and peroxide bleaching, respectively. EPA evaluated mill closures for the TCF option with the lower capital costs. O&M costs for this option are $783 million, and annualized costs are $688 million. (TCF annualized costs appear lower than annual O&M costs because of tax shields.) EPA estimates that these costs would result in seven mill closures, which are associated with approximately 7,100 job losses. EPA did not conduct a firm failure analysis or calculate combined direct and indirect impacts for this option because the closures and job losses alone are more than sufficient indication that the option is not economically achievable. EPA estimates, however, that a greater number of firms would be placed in financial jeopardy with the costs of this option, compared to Option B, which EPA has already determined is not economically achievable (See Section VI.B.5.a(5)).

TCF and MACT I: The combined capital costs for TCF and MACT I for mills in this subcategory are estimated at $3.6 billion; O&M costs are $851 million, and annualized costs are $764 million. EPA estimates that these costs would result in nine mill closures and an associated loss of 10,200 jobs, $3.2 billion in shipments, and $310 million in exports. EPA conducted no additional economic analysis for this combination of costs.

TCF, MACT I, and MACT II: The combined capital costs for TCF, MACT I, and MACT II for mills in this subcategory are estimated at $3.7 billion; O&M costs are $849 million; and annualized costs are $772 million. With the combined costs of TCF, MACT I, and MACT II, EPA estimates that the number of mill closures, job losses, and

cover the capital cost associated with ıe NSPS/PSNS technology.

. Cost-Effectiveness

EPA uses a cost-effectiveness ratio of ollars per toxic pound equivalent emoved (see Economic Analysis (DCN 4649), Chapter 5) to evaluate the elative efficiency of a technology ɔption in removing toxic pollutants. The esults reported below are expressed in 1981 dollars, as prescribed by EPA's ɔst-effectiveness methodology (DCN 14649). For the Bleached Papergrade Kraft and Soda subcategory, the cost-effectiveness ratio for both BAT and PSES is $14 per toxic pound equivalent removed. The cost-effectiveness ratios for the Papergrade Sulfite subcategory are $13 per toxic pound equivalent removed for BAT and $45 per toxic pound equivalent for PSES. EPA considers the selected technology bases for the BAT/PSES limits for both subcategories to be cost-effective.

E. Costs and Impacts for the Integrated Rules

EPA estimates that 155 kraft, soda, sulfite, and semi-chemical mills will incur costs to comply with the CAA rules; 96 bleached papergrade kraft and soda and papergrade sulfite mills will incur costs to comply with the CWA rule, and the same 96 mills will incur both CAA and CWA rule costs. Table VIII–3 is a summary of the expected costs and impacts for various combinations of CAA and CWA rules. The losses of jobs, shipments, exports, and indirect effects reported in Table VIII–3 are the impacts derived from mill closures. Some results are not disclosed where confidentiality might be compromised.

TABLE VIII–3.—COSTS AND ECONOMIC IMPACTS OF CAA AND CWA RULES

Costs and Impacts	Rules					
	MACT I (final)	MACT II (proposed)	BAT/PSES (BPK&PS)[1]	MACT I & BAT/PSES (96 mills)	MACT I, BAT/PSES & MACT II (BPK&PS) (96 mills)	MACT I, BAT/PSES & MACT II (155 mills)
Capital Costs (SMM)	501	258	1,039	1,394	1,524	1,799
Post-Tax Annualized Costs (SMM)	82	23	172	229	240	277
Mill Closures	0	0	1	2	3	3
Firm Failures	0	0	0	0	0	0
Job Losses (from mill closures)	0	0	400	900	1,700	1,700
Decreased Shipments (SMM)	0	0	150	273	479	479
Decreased Exports (SMM)	0	0	19	19	22	22
Direct and Indirect Effects (SMM)	.....	.....	430	795	1,393	1,393

[1] BPK: Bleached Papergrade Kraft and Soda subcategory.
PS: Papergrade Sulfite subcategory.

While no mills are predicted to close due to MACT I costs alone, and one mill in the Bleached Papergrade Kraft and Soda subcategory is predicted to close due to BAT/PSES costs alone, EPA estimates that two mills in the Bleached Papergrade Kraft and Soda subcategory may close as a result of the combined costs imposed by these rules. The two predicted closures represent approximately 2.3 percent of the 86 bleached papergrade kraft and soda mills and 1.3 percent of all 155 kraft, sulfite, soda, and semi-chemical mills affected by this rulemaking. As a result of these two closures, 900 jobs could be lost. These jobs represent 0.9 percent of the jobs in the Bleached Papergrade Kraft and Soda subcategory. These costs generate a maximum estimated price increase of 1.5 percent for any product (pulp, paper or paperboard). Estimated losses in the value of shipments are approximately $273 million, or 0.8 percent of bleached papergrade kraft and soda shipments, while losses in the value of bleached papergrade kraft and soda exports are approximately $19 million, or 0.5 percent of subcategory exports.

No mills are projected to close in the CWA Papergrade Sulfite subcategory, or the CAA soda, sulfite, or semi-chemical subcategories as a result of either the promulgated CAA or CWA regulations or a combination of both.

EPA examined the indirect effects of the final regulations (MACT I, MACT III and BAT/PSES) on employment and output using a national-level input-output model developed by the U.S. Department of Commerce. The model provides multipliers that enable EPA to estimate national-level impacts based on the loss of employment and output from closing mills. Total projected effects on the U.S. economy of the combined MACT I and BAT/PSES are approximately 5,700 jobs lost and $795 million in lost economic output. While some local communities could experience some economic dislocation as a result of closures, overall national impacts would be insignificant. For comparison, the 1995 U.S. gross domestic product was $7.3 trillion. The loss is approximately one-tenth of 1 percent of the gross domestic product for 1995. EPA also evaluated regional (county-level) economic impacts when determining the economic achievability of the regulation. For the final MACT I and BAT/PSES, in the two counties where mills are projected to close, the unemployment rate would increase by 0.4 percent and 0.7 percent respectively.

In response to public comments, EPA also estimated the economic impacts associated with the combined costs of promulgated and proposed rules. When the MACT I, BAT/PSES, and MACT II costs are considered jointly, EPA projects an additional mill closure with 800 additional jobs lost and further decreases of $206 million in shipments and $3 million in exports. The total projected effects of the combined MACT 1, BAT/PSES, and MACT II costs are approximately 10,000 jobs lost and $1.4 billion in lost economic output.

F. Costs and Impacts of Rejected BAT/PSES Options for the Bleached Papergrade Kraft and Soda Subcategory

1. Summary of Results

Table VIII–4 presents costs and impacts for two options (Option B and TCF) that EPA evaluated, but did not select, as the basis for BAT/PSES for the Bleached Papergrade Kraft and Soda subcategory. EPA's rationale for selecting Option A for BAT/PSES for this subcategory is presented in Section VI.B.5.a(5). Table VIII–4 presents results in three ways: considering CWA costs and impacts alone; considering the costs and impacts of the rejected BAT/PSES options and MACT I; and considering

component of the Altman's Z analysis, on which EPA has relied to identify firm failures for this final rule. While providing some useful information, the facility financial analysis was not used to identify firm-level bankruptcies at proposal and did not provide the basis at proposal for making determinations of economic achievability.

As noted in Section VIII.A., EPA considers general and administrative as well as variable annual costs in the cost annualization calculation. At proposal, general and administrative costs (GAC) had been calculated as 4 percent of capital costs plus 60 percent of variable annual costs. Subsequent analysis indicated that the engineering estimates for effluent control already included the 60 percent of variable annual costs. To remove this double-counting, GAC is now calculated as four percent of capital costs for effluent control (see DCN 14086). GAC is added after the engineering estimates prior to cost annualization; this explains the differences between engineering and economic estimates of operating and maintenance costs.

All of the previously discussed revisions were made in an effort to conduct an economic analysis of the air and water regulations that is more representative of current economic conditions in the pulp and paper industry and that provides more accurate economic impact results.

C. Costs and Economic Impacts for Air Emissions Standards

Table VIII–2 presents the engineering control cost estimates for MACT I and for the regulatory alternative proposed for MACT II: $755 million in total capital costs and $172 million in annualized costs. A more detailed discussion of the control costs for the final MACT standard, including emission reductions and cost-effectiveness, is provided in Chapter 20 of the Background Information Document. Table VIII–2 also presents the capital costs and pre-tax and post-tax annualized costs used in the economic analysis. EPA has determined that the MACT III standards will impose no costs; therefore, none is presented here or in Table VIII–2.

As noted in Section VIII.A. and Chapter 5 of the Economic Analysis, the engineering control cost estimates of the cost of MACT regulations differ from the costs used in EPA's economic impact analysis of those standards. The economic analysis also differentiates between pre-tax annualized costs and post-tax annualized costs as discussed in Section VIII.A.

TABLE VIII–2.—ESTIMATES OF THE COST OF AIR REGULATIONS

[Millions of dollars]

Regulation	MACT control cost estimates		Economic analysis MACT cost estimates		
	Capital costs	Annualized cost	Capital cost	Annualized costs	
				Pre-tax	Post-tax
MACT I	$496	$130	$501	$125	$82
MACT II	259	42	258	32	23
Total Air	755	172	759	157	105

Based on the economic analysis, EPA predicts no firm failures, mill closures, or associated job losses as a result of the costs of the MACT rules considered individually. When the costs of the MACT rules are combined, EPA projects one mill closure with up to 700 job losses. No firm failures are anticipated for the combined MACT rules.

D. Costs and Economic Impacts for Effluent Limitations Guidelines and Standards

1. BPT and BCT

As explained in Section VI.B.2, EPA is exercising its discretion not to revise BPT limitations for conventional pollutants at this time for Subparts B and E. In addition, candidate BCT technologies do not pass the two-part BCT cost reasonableness test. Therefore, EPA is not revising the current BCT limitations for Subparts B and E mills; as a result, these mills will incur no incremental BPT or BCT costs.

2. Bleached Papergrade Kraft and Soda Subcategory

a. BAT/PSES. For the selected BAT/PSES (Option A), capital costs are $966 million, O&M costs are $151 million, and annualized costs are $162 million. When considering these costs alone, the economic analysis predicts closure of one mill as a result of this rule and no firm failures. Other economic impacts (e.g., job losses) are reported in the CBI portion of the rulemaking record.

b. NSPS and PSNS. EPA considered the cost of NSPS and PSNS technology for new source mills in the Bleached Papergrade Kraft and Soda subcategory. EPA expects few new source mills or fiber lines to be constructed that will be subject to NSPS/PSNS. Even if new source mills or fiber lines are constructed that are subject to NSPS/PSNS, EPA estimates that the selected NSPS/PSNS would not present a barrier to entry. EPA estimated the average incremental capital costs of NSPS/PSNS compliance (compared to Option A technology) to be approximately 0.50 to 2.0 percent of the capital cost of constructing a new source mill or fiber line and concluded that this cost was not sufficient to present a barrier to entry for proposed entrants, particularly considering the lower operating costs of Option B.

3. Papergrade Sulfite Subcategory

a. BAT/PSES. As explained in Section VI.B.6.a, EPA is dividing the Papergrade Sulfite subcategory into three segments. For BAT/PSES for all three segments combined, capital costs are $73.8 million, O&M costs are $7 million, and annualized costs are $9.8 million. No mills are projected to close as a result of these compliance costs, and no firms are projected to fail. There is no expected loss of jobs, shipments, or exports.

b. NSPS/PSNS. EPA considered the costs of NSPS/PSNS for new source mills in the Papergrade Sulfite subcategory. Because NSPS/PSNS equals BAT/PSES, EPA concluded that such costs were not sufficient to present a barrier to entry. First, the cost of the NSPS/PSNS technology is an insignificant fraction of the capital cost of a new source mill or fiber line (less than one percent). Also, the costs of including the selected NSPS/PSNS technology at a new source mill are substantially less on a per ton basis than the costs of retrofitting existing mills. Moreover, the increased chemical recovery and reduced operating costs for the NSPS/PSNS option allow firms to

mills are projected to close in the apergrade Sulfite subcategory as a esult of compliance costs. No firm ailures are predicted.

The combined annualized costs for he proposed and final rules (MACT I, BAT/PSES, and proposed MACT II) affecting the 96 bleached papergrade kraft and soda and papergrade sulfite mills are $240 million. With these combined costs, three mills are projected to close. The associated job losses increase with the additional projected closure, but the estimate is not reported here in order to protect confidential business information. No firm failures are expected to result from the combined costs of MACT I, BAT/PSES, and proposed MACT II for these mills.

The annualized costs for the proposed and final rules (MACT I, BAT/PSES, and MACT II) applicable to all 155 kraft, soda, sulfite, and semi-chemical mills are $277 million. With these combined costs for all rules and all 155 mills, the impacts are unchanged; i.e., three mills are projected to close, job losses exceed 900, and no firm failures are expected.

B. Overview of Economic Analysis

1. Revisions in Analysis From Proposal

a. Subcategories. Based on the subcategorization described in Sections II.C.1, VI.A and VI.B.1, EPA estimated impacts for four CAA subcategories—Kraft, Sulfite, Soda, and Semi-Chemical Process—and two CWA subcategories—Papergrade Sulfite and Bleached Papergrade Kraft and Soda. The economic analysis addresses 155 mills in the CAA subcategories and 96 mills in the CWA subcategories. The 96 CWA mills are a subset of the 155 CAA mills.

b. Options. (1) Air Emissions Standards. The selected technology bases for the MACT I & III standards are discussed fully in Section II.B.2 of this preamble. Regulatory options and alternatives for MACT II are discussed in Section IV.F of the preamble to the proposed MACT II standards, which appears elsewhere in today's **Federal Register**, and in the Economic Analysis (DCN 14649). EPA's economic analysis presents results for eight regulatory alternatives. The summary presented here pertains only to the final MACT I standard and proposed MACT II standard.

(2) Effluent Limitations Guidelines and Standards. For the BAT/PSES analyses for the Bleached Papergrade Kraft and Soda subcategory, EPA's economic analysis addresses three technology options. The summary presented in this section of the preamble focuses on Option A, the selected BAT/PSES option, but a brief discussion of the impacts for the rejected options appears below in Section VIII.F. For the Papergrade Sulfite subcategory, EPA's economic analysis (and the summary presented here) analyzes only the technologies selected as the bases for the BAT/PSES for each segment. This is because EPA identified no technically available options for the three papergrade sulfite segments other than those considered and selected.

NSPS/PSNS costs for new sources are presented in Section VIII.D.

c. Methodology. The methodologies used by EPA to evaluate economic impacts at the time of proposal are fully discussed in the Economic Impact and Regulatory Flexibility Analysis of the Proposed Effluent Limitations Guidelines and NESHAP for the Pulp, Paper, and Paperboard Industry (EPA–821–R–93–021, November, 1993). Revisions to these methodologies are discussed below and more fully in Chapters 3 and 4 of the Economic Analysis (DCN 14649).

As discussed or referenced in the July 15, 1996 Notice, EPA revised components of the economic methodology to account for recent changes that have occurred in the pulp and paper industry, including: (1) revision of the discount rate; (2) integration of market (price change) effects into the financial closure model; (3) incorporation of new industry cycle data into the forecasting methodology; (4) adjustment of the starting year for the analysis to 1996; (5) incorporation of updated mill ownership data in the firm failure model; and (6) a revised method for calculating annual costs. See 61 FR at 36843–44. Each of these methodology revisions is briefly discussed below.

At proposal, EPA used a facility-specific cost of capital (an average of nine percent real cost of capital) derived from responses to a 1989 industry survey) that reflected financing costs in 1989. Real (inflation-adjusted) financing costs declined considerably between 1989 and 1995. For the final rule, EPA primarily used an inflation-adjusted seven percent cost of capital or discount rate in the economic analysis because this rate better reflects real industry financing costs from 1995 to 1997, and the Agency does not have accurate information on current facility-specific financing costs. Additionally, the Office of Management and Budget recommends a seven percent discount rate to evaluate the social costs of federal regulations. In Chapter 6 of the Economic Analysis (DCN 14649), EPA presents a sensitivity analysis of results using alternative discount rates.

At proposal, EPA used both a financial model and a comprehensive market model to assess economic effects. Much of the information in the market model was derived from the 1989 survey. A number of substantial changes have occurred in pulp and paper markets since 1989 that the market model does not reflect. EPA decided not to update the market model (which estimated price increases), because an update would have required a new survey of every mill and all product lines, which would have been unnecessarily costly and burdensome to mill operators. EPA was also concerned that the amount of time required for conducting and analyzing a second survey would unnecessarily delay the final rule. This would further extend the industry's inability to plan and make capital investments with certainty regarding regulatory requirements. Instead, EPA modified the financial model to incorporate product supply and demand elasticities, which are estimates of changes in demand or supply in response to price changes. The summary of results presented in this preamble does not reflect the effects of price increases, because such changes did not materially affect EPA decisions. Chapter 6 of the Economic Analysis (DCN 14649) presents all of the results.

The last year of price information available at proposal was 1988. Between 1988 and 1995, the pulp and paper industry completed a full industry revenue cycle, with revenues peaking in 1988, falling through 1992, and reaching historic heights in 1995. For the final rule, this newer information was incorporated into the forecasting methods for the financial closure model, which assumes this seven-year cycle (a six-year cycle was used at proposal) of falling and rising prices will continue into the future. Additionally, the starting year for the analysis was adjusted to 1996 (from 1989, which was used at proposal).

To identify potential firm failures (i.e., bankruptcies) using the Altman's Z financial ratio analysis, EPA obtained updated financial information, including mill ownership data, for publicly held companies. Because updated information for privately held companies was not available from public sources, EPA did not evaluate possible failures among private firms. To include these companies would have required a new industry survey.

A facility-level financial analysis that was conducted at proposal was discontinued because EPA was also unable to update facility-level financial information without a new survey. The facility-level analysis is not a

further analysis of the MACT III regulations.

EPA separately evaluated the impacts of the BAT, PSES, NSPS, PSNS, and BMP requirements for the 86 mills currently in the Bleached Papergrade Kraft and Soda subcategory and the 11 mills currently in three segments of the Papergrade Sulfite subcategory. (One mill is in both CWA subcategories.) Both direct and indirect discharging mills are subject to BMPs. Hereafter, EPA's reference to BAT/PSES costs includes the costs of complying with the final BMP requirements.

EPA also evaluated the costs and impacts for the combination of MACT I and BAT/PSES for the 96 bleached papergrade kraft and soda and papergrade sulfite mills that are affected by both rules. EPA also provides an estimate of the economic impacts when the proposed MACT II costs are combined with the MACT I and BAT/PSES costs for these 96 mills. Finally, the economic impacts and costs for all 155 kraft, soda, sulfite, and semi-chemical mills affected by air and/or water regulations are reported.

EPA also evaluated the impacts of NSPS or PSNS costs for new sources, both singly and in combination with MACT I and proposed MACT II costs.

EPA evaluated economic achievability based on the relative magnitude of compliance costs (in the form of total annualized costs) and the resulting potential facility closures, potential job losses, firm failures (potential bankruptcies), reduced value of shipments, balance of trade effects, and indirect effects (reduced regional and national output and employment which reflect the fact that impacts on the pulp and paper industry will resonate throughout the economy). Table VIII–1 presents a summary of annualized costs and projected mill closures for the various rules and rule combinations. The level of detail for reporting results in the preamble (and in the EA) is sometimes constrained in order to protect confidential business information. For that reason facility closures and job losses, for example, are not identified for certain combinations of rules. All of the results are contained in the confidential portion of the rulemaking record.

TABLE VIII–1.—SUMMARY: COSTS AND ECONOMIC IMPACTS OF CAA AND CWA RULES

Costs and impacts	Rules					
	MACT I (final) (all mills)	MACT II (proposed) (all mills)	BAT/PSES (final) (BPK&PS) [1]	MACT I and BAT/PSES (final) (BPK&PS)	MACT I, BAT/PSES and MACT II (BPK&PS)	MACT I, BAT/PSES and MACT II (all mills)
Pre-Tax Annualized Costs (S MM) [2]	125	32	263	351	366	420
Post-Tax Annualized Costs(S MM)	82	23	172	229	240	277
Mill Closures	0	0	1	2	3	3
Firm Failures	0	0	0	0	0	0

[1] BPK: Bleached Papergrade Kraft and Soda subcategory PS: Papergrade Sulfite subcategory.
[2] Pre-Tax costs are not used in determining economic achievability.

MACT Costs: Total annualized MACT I costs for 155 facilities in all subcategories regulated today are $82 million (all annualized costs presented in Section VIII are post-tax costs in 1995 dollars, except where noted). These costs differ from the engineering MACT control cost estimates presented in Section VI, as noted above and in Section VIII.B.1.c. Total annualized proposed MACT II costs for all subcategories that EPA proposes to regulate are $23 million. No mill closures, job losses, or firm failures are projected when either MACT I or proposed MACT II costs are analyzed individually. When the costs for final MACT I and proposed MACT II are combined, the (post-tax) annualized costs are $105 million and result in one estimated mill closure and losses of up to 700 jobs. No firm failures are predicted as a result of the combined costs of MACT I and MACT II.

BAT/PSES Costs: EPA estimated economic impacts for three BAT/PSES options (Option A, Option B, and TCF) for all bleached papergrade kraft and soda mills. Section VI.B.5.a(1) of this preamble contains a description of each option. The naming conventions of Option A, Option B, and TCF, which EPA introduced in that section, are also used here. EPA selected Option A as the technology basis for BAT/PSES for the Bleached Papergrade Kraft and Soda subcategory (see Section VI.B.5.a(5)). For the 11 mills in three segments of the Papergrade Sulfite subcategory, the Agency estimated the economic impacts of one technology for each segment. EPA selected those technologies as the bases for BAT/PSES for this subcategory (see Sections VI.B.6.b and d). EPA presents a summary of the economic impacts of the selected BAT/PSES technology bases immediately below. A summary of the economic impacts for the rejected BAT/PSES options in the Bleached Papergrade Kraft and Soda subcategory is presented in Section VIII.F.

Total annualized costs for the selected BAT/PSES for the 96 mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories are $172 million. One mill closure is predicted for the Bleached Papergrade Kraft and Soda subcategory as a result of compliance costs. Estimates of job losses are not presented in order to protect confidential business information. EPA estimates no closures for the Papergrade Sulfite subcategory as a result of compliance costs. EPA estimates that no firm failures will result from BAT/PSES in these subcategories. Based on current information, EPA projects that there may be some new sources, most likely new fiber lines at existing pulp and paper mills. EPA has identified the per plant NSPS/PSNS costs for the Bleached Papergrade Kraft and Soda and the Papergrade Sulfite subcategories. EPA did not have sufficient information to reliably project the likely number of new sources (see Section VIII.D). EPA also expects that many replacement fiber lines constructed at Subpart B mills will be enrolled in the Voluntary Advanced Technology Incentives Program and will therefore be existing sources rather than new sources. 40 CFR 430.01(j)(2). EPA also conducted a barrier to entry analysis for new sources, discussed below.

Combined Costs: The combined annualized costs for MACT I and BAT/PSES, affecting 96 bleached papergrade kraft and soda and papergrade sulfite mills, are $229 million. As a result of these costs, two mills in the Bleached Papergrade Kraft and Soda subcategory are projected to close with an associated loss of 900 jobs. See Table VIII–3. No

TABLE VII–7.—NON-WATER QUALITY ENVIRONMENTAL IMPACTS OF NSPS/PSNS FOR THE BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY—Continued

	1000 tpd fiber line
Total Reduced Sulfur	Increase by 28 Mg/year.
Particulate Matter	Decrease by 12 kg/year.
Carbon Monoxide	Decrease by 3 Mg/year.
Nitrogen Oxides	Decrease by 28 Mg/year.
Sulfur Dioxides	Decrease by 56 Mg/year.

[1] See Section 11.4.1.3 of the Supplemental Technical Development Document, DCN 14487.

NSPS and PSNS that EPA is promulgating today for the Papergrade Sulfite subcategory are equivalent to BAT and PSES. Therefore, the NSPS and PSNS present no additional non-water quality environmental impacts.

VIII. Analysis of Costs, Economic Impacts, and Benefits

A. Summary of Costs and Economic Impacts

This section presents a summary of EPA's evaluation of the costs, economic impacts, and benefits of the Cluster Rules. A more detailed analysis is contained in the Economic Analysis for the National Emission Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category—Phase 1 (DCN 14649; hereafter, the Economic Analysis).

Today's action is a significant departure from prior EPA rulemakings in that, for one industry, EPA is considering the ramifications of implementing two major environmental statutes with respect to pollution control, industrial technology and operations, environmental impacts, costs, and economic impacts. As noted in Section II of this preamble, today's rulemaking establishes regulations that implement elements of both the CAA and CWA. The objective of this economic analysis is to provide the most accurate portrayal possible of the aggregate costs that the industry will face by implementing these regulations, as well as the economic, financial, and social impacts that EPA estimates will result from these costs. The economic impacts of the combined, or joint, costs of the final CWA (BAT, NSPS, PSES, PSNS, and BMP) requirements and the final and proposed CAA requirements (MACT I, MACT III, and proposed MACT II) are different than the impacts that would result from the costs of the CWA or CAA requirements considered separately. While EPA presents separately the CWA and CAA compliance costs and the economic impacts of those costs in this section, the Agency believes the most accurate estimation of the economic impacts that the pulp and paper industry will experience is derived by considering total (combined) compliance costs of both the CAA and CWA rules. Under the CWA, EPA considered the economic impacts of each option by subcategory, combining indirect and direct dischargers. EPA combined these groups because there are no differences between direct and indirect dischargers in each subcategory with respect to characteristics of wastewater generated or the model process technologies considered.

The compliance costs described in this section are EPA's best estimates of the actual costs facilities will incur to comply with the promulgated and proposed rules.

The total annualized and operation and maintenance (O&M) costs differ somewhat from the engineering cost estimates shown in Section VI. The annual O&M costs shown in this section include a general and administrative cost of four percent of capital costs, which makes these O&M costs significantly higher than the engineering O&M cost estimates shown in Section VI. The annualized costs shown in Section VIII are both pre-tax and post-tax. Pre-tax costs, because they capture total economic losses to society, are considered the social costs of the rule and are used for examining cost-effectiveness (Sections VIII.D.4 and VIII.F.1) and for comparing the costs and benefits of the rule (Section VIII.H). Post-tax costs, which represent the projected costs to a firm after tax shields for depreciation and other factors are accounted for, are used in the economic achievability determination under the Clean Water Act to evaluate facility closures, firm failures, and related impacts. Post-tax costs are used in Sections VIII.A, VIII.B, VIII.C, VIII.E, VIII.J, and most of Sections VIII.D and VIII.F.

EPA's financial and economic analyses reflect as accurately as possible the information that pulp and paper industry managers will consider in making financial decisions. The economic impacts described in this section (such as facility closures, job losses, and reduced shipments) result from the total costs that a facility will bear (including environmental compliance costs) compared to the facility's expected revenues. EPA also evaluated the aggregate costs for all facilities borne by each company to determine if each company will be in jeopardy of bankruptcy as a result of aggregate compliance costs.

In this section, EPA also describes the qualitative, quantitative, and monetized benefits of environmental improvements expected to result from compliance with these rules, and compares these benefits to the costs of the rules. EPA identified 158 mills at proposal with kraft, soda, sulfite or semi-chemical pulping processes. Of these, EPA now projects that 155 mills will bear costs under the final MACT I and 149 mills will bear costs under the proposed MACT II (six mills do not practice chemical recovery). These numbers could change over time as mills change processes or close operations.

EPA separately evaluated the compliance costs and economic impacts of: (1) MACT I for the 155 mills that pulp wood using kraft, soda, sulfite, or semi-chemical pulping processes; (2) combined final MACT I and proposed MACT II for those mills; and (3) proposed MACT II for combustion sources at the 149 mills. Although all of the regulatory options and alternatives under consideration for MACT II are evaluated in the EA, only the economic impacts related to the proposed regulatory alternative are presented here. EPA estimates that there will be no economic impacts associated with the MACT III regulations, which are promulgated for mills that practice mechanical, secondary fiber, or non-wood pulping or that produce paper or paperboard from purchased pulp, because EPA believes that compliance with MACT III requirements will neither impose costs nor result in additional emissions reductions. For this reason, Section VIII presents no

(i.e., solids removed during physical wastewater treatment processes such as sedimentation prior to biological treatment) is high in wood fiber and volatile solids. Secondary sludge is the product of biological treatment in which microorganisms consume organic matter (BOD_5) in the wastewater. Secondary sludge is a gelatinous mixture of bacterial and fungal organisms. Because of the reduction in BOD_5 load into treatment, the combined application of BAT limitations, PSES, and BMPs promulgated today will decrease sludge generation by 35,900 kkg/yr (39,600 short tons/yr), which represents a 2 percent reduction from the mid-1995 baseline for subpart B and E mills.

Sludge generated at bleached papergrade kraft and soda and papergrade sulfite mills may contain dioxin and furan if these pollutants contaminate the wastewater treated at these mills. At proposal, the Agency estimated that the mills in these two subcategories generated 177 g/yr TEQ dioxin and furan in their wastewater treatment sludge. Since the proposal, industry has significantly reduced the level of dioxin and furan in its wastewater. The Agency estimates that the dioxin and furan content of the sludge has decreased similarly, to approximately 50 g/yr TEQ. See the Supplemental Technical Development Document, DCN 14487.

The process changes that form the basis of the BAT limitations and PSES promulgated today limit the concentration of dioxin and furan allowed to be discharged to the wastewater treatment system. As a result, the Agency estimates that when fully implemented, the combined application of BAT limitations and PSES will reduce the present sludge loading of dioxin and furan TEQ by 43 g/yr, approximately an 85 percent reduction from current levels. The period of time before individual mills have reached this level will vary somewhat depending on the compliance schedule incorporated in the permit and the type of treatment system in place at each mill. See the Supplemental Technical Development Document, DCN 14487.

EPA concludes that the technologies that form the basis of BAT, PSES, and BMPs for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories are beneficial from the standpoint of solid waste generation. The technologies both reduce the quantity of solid waste generated and also improve its quality by reducing the pollutant loading in the sludge generated.

4. Other Environmental Impacts

Wood consumption at the bleached papergrade kraft and soda mills will be reduced by up to 0.3 percent by the final BAT limitations and PSES promulgated today. The wood savings results from a reduction in losses of useful fiber associated with the recovery of liquor spills and improvements in brownstock washing and screening of pulp. EPA estimates no change in wood consumption at mills in the Papergrade Sulfite subcategory.

The control technologies that form the basis of the effluent limitations guidelines and standards promulgated today will reduce bleached papergrade kraft and soda mill effluent wastewater flows. The greatest reductions would be realized in mills presently discharging the highest flows. In 1995, the average bleached kraft mill discharged approximately 95 m^3/metric ton effluent (23,000 gallons/metric ton). For a 1,000 metric ton/day mill, the average effluent flow is similar to that from a city of 250,000 people. The effluent limitations guidelines and standards will reduce total effluent flow in two ways: (1) Closure of brownstock screening systems, and (2) BMPs. At a mill with open screening, closure could reduce total effluent flow by 25 percent. BMP implementation could result in further effluent flow decreases of two percent. EPA estimates a small reduction in wastewater effluent flow from mills in the Papergrade Sulfite subcategory.

EPA concludes that the technologies that form the basis of BAT, PSES, and BMPs for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories are beneficial from the standpoint of wood use and wastewater generation, and will not produce significant adverse non-water quality environmental impacts.

D. Non-Water Quality Environmental Impacts of New Source Performance Standards and Pretreatment Standards for New Source (NSPS and PSNS)

EPA analyzed the projected non-water quality environmental impacts of BAT for the Bleached Papergrade Kraft and Soda subcategory for BAT, PSES, and BMPs based on complete substitution of chlorine dioxide for chlorine and other technology elements. This section presents the non-water quality environmental impacts of a second technology configuration (NSPS and PSNS) which is equivalent to BAT, PSES, and BMPs with the addition of extended delignification (oxygen delignification or extended cooking) on a new 1000 tpd bleached papergrade kraft fiber line.

Table VII–7 presents the non-water quality environmental impacts of the selected technology basis for NSPS and PSNS, compared to conventional pulping and bleaching technology. These estimates are based on the same calculational methodology described under BAT and PSES, applied to a 1000 tpd model mill. Based on these estimates, EPA concludes that the process technologies that form the basis for NSPS and PSNS for the Bleached Papergrade Kraft and Soda subcategory pose no significant adverse non-water quality environmental impacts.

TABLE VII–7.—NON-WATER QUALITY ENVIRONMENTAL IMPACTS OF NSPS/PSNS FOR THE BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY

	1000 tpd fiber line
Wood Consumption	No Difference.
Effluent Flow	Moderate Decrease.[1]
BOD to Treatment	Decrease by 11,300 kg/day.
Sludge Generation	Decrease by 890 kg/day.
Carbon Dioxide	Decrease by 21,700 Mg/year.
Energy Impacts:	
Total Electricity Demand	Decrease by 222,600 million BTU/year in oil equivalent.
Total Steam Demand	Increase by 60,180 million BTU/year in oil equivalent.
Total Energy Demand	Decrease by 162,400 million BTU/year in oil equivalent.
Air Emissions:	
Hazardous Air Pollutants	Increase by 407 Mg/year.
Chloroform	No Difference.
Volatile Organic Compounds	Increase by 707 Mg/year.

Increases in the emission of criteria pollutants are also listed in Table VII–5a. The emission of total criteria air pollutants from spent pulping liquor combustion sources (i.e., recovery boilers) at mills in the Bleached Papergrade Kraft and Soda subcategory will increase by 1.2 percent as a result of BAT, PSES, and BMPs and will be only slightly mitigated by MACT II controls. The increases in nitrogen oxides (423 Mg/yr), sulfur dioxides (784 Mg/yr), and carbon monoxide (1440 Mg/yr) emissions are minor relative to nationwide emissions, which are 19.8 million Mg/yr for nitrogen oxides, 16.6 million Mg/yr for sulfur dioxides, and 83.6 million Mg/yr for carbon monoxide (OAQPS, 1995).

EPA concludes that the technologies that form the basis of BAT, PSES, and BMPs for bleached papergrade kraft and soda and papergrade sulfite mills pose no significant adverse impacts to and indeed have some benefits for air quality. EPA bases this determination on the following:

—Total HAP emissions from the sources subject to control by MACT I and proposed MACT II from kraft and sulfite pulping and bleaching processes decrease as a result of BAT, PSES, and BMPs;

—HAP emissions would increase by less than one percent from bleached kraft combustion sources and increase by less than two percent from papergrade sulfite combustion sources; and

—The increase in criteria air pollutants for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories is minor relative to current national industrial emissions.

EPA examined the effect of BAT combined with BMPs on the generation of CO_2 by considering the overall mill carbon balance and the energy balance. Anthropogenic generation of water vapor is minuscule relative to atmospheric recycling and is normally ignored in greenhouse gas analysis. Therefore, water vapor is ignored here. EPA concluded that neither option would have an impact on the total emission of greenhouse gasses from mills due to pulping processing. There, EPA concludes that the increased CO_2 emissions attributable to BAT pose no significant adverse non-water quality environmental impact.

2. Energy Impacts

The impacts of BAT, PSES, and BMPs on the energy use of the 86 mills with production in the Bleached Papergrade Kraft and Soda subcategory and the 11 mills with production in the Papergrade Sulfite subcategory are summarized in Table VII–6. The process changes that form the basis of the regulations promulgated today are estimated to result in an increased energy requirement of 3.70 trillion Btu/yr in oil equivalent at the 96 affected pulp and paper mills. This represents a 0.82 percent increase from the current total Bleached Papergrade Kraft and Soda subcategories energy consumption (papergrade sulfite total energy consumption is minor relative to bleached papergrade kraft) of 499.4 trillion Btu/yr in oil equivalent (DCN 14510). The increased energy use is due to the increased off-site chemical manufacturing electrical demand (met by off-site electric generating stations) and on-site electrical demand (also met by off-site electric generating stations, and commonly referred to as "purchased energy"). These increased demands are partially offset by the decreased steam demand (met by on-site power boilers and recovery furnaces). Oil equivalent is used to express the combined effects of changes in thermal energy and electric power. It is based on the assumption that marginal changes in electric power demand caused by the regulation will be supplied by conventional condensing-type oil-fired power stations. See DCN 14487.

TABLE VII–6.—ENERGY IMPACTS OF BAT, PSES, AND BMP: BLEACHED PAPERGRADE KRAFT AND SODA AND PAPERGRADE SULFITE MILLS

Energy impacts	Units	Bleached papergrade Kraft	Papergrade sulfite (all segments)	Combined total
On-Site Electricity Demand*	Trillion Btu/yr in oil equivalent	(2.37)	(0.0381)	(2.41)
Off-Site Electricity Demand*	Trillion Btu/yr in oil equivalent	10.0	(1.05)	8.95
Steam Demand	Trillion Btu/yr in oil equivalent	(2.88)	(0.010)	(2.89)
Total Energy Demand**	Trillion Btu/yr in oil equivalent	4.78	(1.08)	3.70
Total Energy Equivalent	Number of Households***	46,100	(10,400)	35,700

Parentheses indicate energy savings.
* Assumes an overall electrical generating efficiency of 25 percent. (DCN 14797).
** Totals do not equal the sum of each line item due to rounding. Refer to Section 11 of the Supplemental Technical Development Document which presents detailed energy estimates.
*** Assumes 103.6 million Btu/household/yr (Energy Information Administration (DOE) 1993).

The manufacture of sodium chlorate, the raw material used at pulp mills to manufacture chlorine dioxide, requires much more electrical energy than the manufacture of chlorine or other commonly used bleaching chemicals. As a result, off-site electrical demand increases by 8.95 trillion Btu/yr (2.61 million MWhr/yr) because of the effluent limitations guidelines and standards promulgated today. EPA estimates of changes in energy demand as mills install advanced technologies can be found in DCN 14488.

The total increase in energy demand resulting from this rule is equivalent to the energy required for 35,700 households. Compared to the most recent data for total national energy consumption, the rule represents a 0.004 percent increase in energy demand. EPA concludes that the technologies that form the basis of BAT, PSES, and BMPs for bleached papergrade kraft and soda and papergrade sulfite mills do not pose significant adverse impacts in nationwide energy demand.

3. Incidental BOD_5 Removal and Sludge

The process changes that form the basis for BAT, PSES, and BMP increase by approximately 1.5 percent the amount of spent pulping liquor collected and combusted by bleached papergrade kraft and soda mills. Spent pulping liquor is a significant source of BOD_5 loadings at these mills. The collection and combustion of this spent pulping liquor results in an approximately 20 percent decrease in BOD_5 load into treatment. (EPA expects that papergrade sulfite mills will have similar trends, but lacks data to calculate residuals.)

Sludge is generated as a byproduct of the wastewater treatment systems used at pulp and paper mills. Primary sludge

and soda and papergrade sulfite facilities subject to BAT, PSES, and BMPs decrease the emissions of some HAPs but have little impact on others. For example, the elimination of chlorine and hypochlorite from bleaching processes, part of the basis for BAT and PSES, will reduce the emission of chloroform in the Bleached Papergrade Kraft and Soda subcategory by 66 percent [but will have a much smaller impact on the emission of methanol.] The application of the BAT, PSES, and BMPs promulgated today for the Bleached Papergrade Kraft and Soda subcategory will reduce the emission of total HAPs from the sources controlled by MACT I from 149,000 Mg/year to 139,000 Mg/yr (7 percent reduction) without taking into account further reductions achieved by MACT I controls.

TABLE VII–4.—IMPACT OF BAT, PSES, AND BMP: BLEACHED PAPERGRADE KRAFT AND SODA AND PAPERGRADE SULFITE MILLS AIR EMISSIONS FROM SOURCES SUBJECT TO CONTROL BY MACT I

Air pollutants	Bleached papergrade kraft and soda [Mg/year]		Papergrade sulfite (all segments) [Mg/year]	
	Baseline emissions	Emission reductions from BAT/ PSES/ BMPs	Baseline emissions	Emission reductions from BAT/ PSES/ BMPs
Total Hazardous Air Pollutants	149,000	10,000	5,190	1,930
Chloroform	9,510	6,060	13	8
Volatile Organic Compounds	569,000	11,000	6,020	2,270
Total Reduced Sulfur	100,000	1,300	0	0

The process changes that form the basis of BAT, PSES, and BMP's increase by approximately 1.5 percent the amount of spent pulping liquor combusted by bleached papergrade kraft mills and papergrade sulfite mills. See the Supplemental Technical Development Document, DCN 14487. HAPs and criteria air pollutants (volatile organic compounds, particulate matter, carbon monoxide, nitrogen oxides, and sulfur dioxides) are generated from combustion of spent pulping liquor by bleached papergrade kraft and sulfite mills. As a result, as shown in Tables VII–5a and VII–5b, the emission of total HAPs from spent pulping liquor combustion sources (i.e., recovery boilers) will increase by 1.1 percent at bleached papergrade kraft and soda facilities and 1.9 percent at papergrade sulfite facilities above the 1995 baseline. However, the net increase in HAP emissions from these combustion sources (235 Mg/yr) represents 1.1 percent of the HAP emissions from all sources subject to control by MACT I, II, and III. Although BAT, PSES, and BMPs result in a small increase in HAP emissions from recovery boilers, the combined effect of the Cluster Rules (including proposed MACT II) is a net decrease of 60 percent in total HAP emissions from all controlled sources. See Table VII–2.

TABLE VII–5A.—IMPACT OF BAT, PSES, AND BMP: BLEACHED PAPERGRADE KRAFT AND SODA AIR EMISSIONS FROM RECOVERY BOILERS AT BLEACHED PAPERGRADE KRAFT AND SODA MILLS SUBJECT TO PROPOSED MACT II [MG/YEAR]

	1995 baseline emission	Emission increases from BAT/ PSES/ BMPs	MACT II emission reductions	Net change after MACT II[a]
Hazardous Air Pollutants	19,900	220	25	195
Volatile Organic Compounds	19,500	213	0	213
Total Reduced Sulfur	2,650	27	0	27
Particulate Matter	31,400	360	12,900	(12,540)
Carbon Monoxide	124,000	1,440	0	1,440
Nitrogen Oxides	36,100	423	0	423
Sulfur Dioxides	67,800	784	0	784

[a] Parentheses indicate emissions decreases below baseline.

TABLE VII–5B.—IMPACT OF BAT, PSES, AND BMP: AIR EMISSIONS FROM RECOVERY BOILERS AT PAPERGRADE SULFITE MILLS SUBJECT TO PROPOSED MACT II [MG/YEAR]

	1995 baseline emission	Emission increases from BAT/ PSES/ BMPs	MACT II emission reductions	Net change after MACT II
Hazardous Air Pollutants	2,110	40	N/S	40

N/S—Not Significant.

increases. The health effects and benefits of these emission reductions and increases are discussed in Section VIII.G.1 of this notice.

TABLE VII–2.—AIR EMISSION IMPACTS OF PULP AND PAPER RULES (ALL CAA SUBCATEGORIES)

Air pollutants	Baseline air emissions (Mg/year)	Air emission reductions (Mg/year)	
		Final cluster rules	Final cluster rules and proposed MACT II
Hazardous Air Pollutants	240,000	139,000	142,000
Volatile Organic Compounds	900,000	409,000	440,000
Total Reduced Sulfur	150,000	79,000	79,000
Particulate	[a]NA	[b](83)	24,000
Carbon Monoxide	NA	(8,700)	49,000
Nitrogen Oxides	NA	(5,200)	(5,700)
Sulfur Dioxides	NA	(94,500)	(94,400)

[a] Industry process data was not collected to calculate emissions for these pollutants increases and decreases for these pollutants reflected in columns to the right are increases or decreases of these pollutants caused by projected installation of MACT control equipment and secondary air emission impacts of BAT, PSES, and BMPs.
[b] Values in ( ) are estimated emission increases over baseline air emissions.

2. Water Pollutant Reductions

Table VII–3 shows the estimated baseline (as of mid-1995) and the reductions from baseline expected from the BMP requirements being promulgated today for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. (Hereafter, references to BAT/PSES impacts include impacts associated with today's BMP requirements.) Calculation of these pollutant reductions is discussed in Sections VI.B.5.a(3) and VI.B.6.b(5). For a discussion of the estimated effluent reduction benefits associated with the BAT limitations promulgated for the Voluntary Advanced Technology Incentives Program for the Bleached Papergrade Kraft and Soda subcategory, see Section IX. A.6 and Table IX–1.

TABLE VII–3.—ESTIMATED POLLUTANT REDUCTIONS FROM BASELINE FOR BAT/PSES

Pollutant parameter	Units	Baseline discharge for BPK mills	Estimated reductions: Final BAT/PSES for BPK mills	Baseline discharge for PS mills	Estimated reductions: Final BAT/PSES for PS mills
2,3,7,8-TCDD	g/yr	15	11	0.78	0.65
2,3,7,8-TCDF	g/yr	115	107	6.7	6.4
Chloroform	kkg/yr	48	40	5.4	5.2
Chlorinated Phenolics	kkg/yr	55	45	2.0	1.8
AOX	kkg/yr	36,300	24,200	4,380	4,010

BPK—Bleached Papergrade Kraft and Soda subcategory.
PS—Papergrade Sulfite subcategory.
g—grams.
kkg—metric ton (1,000 kilograms or 1 megagram (Mg)).

The air quality impacts shown in Table VII–2 and the water pollutant effluent reductions shown above are used in the following section to estimate reduced human health and environmental risk attributable to today's rules. These estimates also form the basis for estimating monetized benefits in the following section.

C. Non-Water Quality Environmental Impacts of Effluent Limitations Guidelines and Standards (BAT, PSES, and BMPs)

Sections 304(b)(2)(B) and 306(b)(1)(B) of the Clean Water Act require EPA to consider the non-water quality environmental impacts of effluent limitations guidelines and standards. To address these statutory requirements, EPA analyzed the air emissions, energy requirements, solid waste generation impacts, and other environmental impacts of the compulsory BAT, PSES, and BMPs being promulgated today for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. The results of this analysis are presented below. In performing the analysis, EPA assumed that each mill in the regulated subcategory would install the model technologies upon which today's limitations and standards are based.

1. Air Emissions

The air emissions reductions of BAT, PSES, BMPs, and MACT I, in combination, are presented in Section VII.B.1 above. This section presents the estimated air emission impacts of BAT, PSES, and BMPs on the 86 mills with production in the Bleached Papergrade Kraft and Soda subcategory and the 11 mills with production in the Papergrade Sulfite subcategory. (One mill has co-located operations in both subcategories that separately contribute to the number of mills in each subcategory.)

The control technologies that form the basis of effluent guidelines and standards promulgated today involve changes in the processes used to produce bleached pulp. These changes affect the rate at which air pollutants, including HAPs, are emitted from the pulping and bleaching processes that are subsequently controlled by MACT I. As shown in Table VII–4, the process changes at bleached papergrade kraft

TABLE VII–1.—FINAL CLUSTER RULES—SOURCES AND TECHNOLOGY BASES/LEVEL OF CONTROL

Toxic and nonconventional pollutant effluent control (BAT, PSES, and BMP technology bases) by subcategory					Hazardous air pollutant emission control (MACT I and III levels of control) by subcategory			
Bleached papergrade kraft and soda	Papergrade sulfite			Best Management Practices (BMP), (Subparts B and E)	Kraft	Soda and semi-chemical	Sulfite	Secondary and nonwood fiber, and mechanical wood fiber
	Calcium, magnesium, and sodium sulfite	Ammonium sulfite	Specialty grade					
	Selected BAT/PSES			Spent Pulping Liquor Spill Prevention and Control.	Control LVHC System Vents			See Bleach Plant Block Below
ECF: 100% Substitution of Chlorine with Chlorine Dioxide; effective brownstock washing; elimination of hypochlorite; oxygen-and peroxide-enhanced extraction; closed brown-stock screening; and other processes discussed at Section VI.B.5.a(1).	TCF: Oxygen- and peroxide-enhanced extraction; peroxide bleaching; elimination of all chlorine-containing compounds; and improved pulp cleaning.	ECF: 100% Substitution of Chlorine with Chlorine Dioxide; peroxide-enhanced extraction; elimination of hypochlorite; and use of dioxin-and furan-precursor-free defoamers.	ECF: 100% Substitution of Chlorine with Chlorine Dioxide; oxygen- and peroxide-enhanced extraction; elimination of hypochlorite; and use of dioxin and furan precursor-free defoamers.	.....	Control Selected HVLC Vents and Named High HAP Concentrated Condensate Streams.	Control Pulp Washing System Vents at New Sources.	Control Pulp Washing System Vents, and Control Liquor and Acid Tank Vents at New Sources.	
					Bleach Plant: Control Chlorinated HAP from Vents at Stages That Use Chlorinated Bleaching Chemicals, and Control Chloroform Emissions by Complying with BAT codified at 40 CFR 430.24(a) and (e) and 40 CFR 430.54(a) and (c) or by 100% substitution of chlorine with chlorine dioxide and elimination of hypochlorite.			

B. Air Emissions and Water Effluent Reductions

1. Air Emissions Reductions

The reductions described in this section are derived from estimated air emissions reductions at all 155 pulp and paper mills in the CAA kraft, soda, sulfite and semichemical subcategories that are subject to MACT I and MACT II standards. These mills include the 96 mills subject to the effluent limitations guidelines and standards promulgated today. All references in this section to MACT I air emissions refer to the expected effects of implementing both the air and water portion of the final Cluster Rules.

Implementation of the MACT portion of the Cluster Rules is expected to significantly decrease HAP emissions. Table VII–2 presents the environmental impacts of the Final Cluster Rules (BAT, PSES, BMPs, and MACT I) and the Final Cluster Rules in combination with the MACT II proposed standards.

The air emission impacts presented in Table VII–2 are calculated based on mill-specific processes and emission control information, emission factors, and control levels summarized in Table VII–1. A more detailed discussion of the calculation of the environmental impacts for the final MACT standards is presented in Chapter 20 of the Background Information Document described in Section XI of this preamble. A detailed discussion of the environmental impacts of the proposed MACT II is contained in the docket for the proposed MACT II standard. As shown in Table VII–2, these final Cluster Rules not only reduce HAP emissions from all CAA and CWA subcategories regulated, but they also result in decreases of volatile organic compounds and total reduced sulfur using industry data updated to 1996. Emissions of particulate and carbon monoxide are estimated to increase under the final rules, but are expected to decrease when combined with the proposed MACT II standards. Emissions of sulfur dioxides, and, to a lesser degree, nitrogen oxides are estimated to increase. Sulfur dioxide emissions are generated primarily from the combustion of sulfur-containing compounds, such as TRS, in the vent streams at kraft mills. The increases in carbon monoxide, nitrogen oxide, and particulate matter air emissions are primarily from the combustion of air vents in the pulping area and increased energy to produce additional steam for steam strippers and chlorine dioxide for the bleaching system. However, these emission increase estimates are likely overstated because they do not account for the fact that some mills in sensitive areas for sulfur dioxide already have sulfur dioxide controls in place or may choose alternative controls available in the final MACT rule that mitigate these

limitation must not result in non-water quality environmental impacts significantly greater than those accepted by EPA in promulgating the effluent limitations guidelines or pretreatment standards. See CWA section 301(n)(1)(D). FDF variance requests, along with all supporting information and data, must be received by the permitting authority within 180 days after publication of the final effluent limitations guideline or standard. See CWA section 301(n)(a). The specific regulations covering FDF variance requirements and administration are found at 40 CFR 122.21(m)(1), 40 CFR Part 125, Subpart D, and 40 CFR 403.13.

Dischargers may also apply for a variance from the BAT limitations on non-conventional pollutants in these final regulations under CWA section 301(c) (for economic reasons) and 301(g) (for water quality reasons). Regulations for the administration of these variances are specified in 40 CFR 122.21(m)(2).

New sources subject to NSPS or PSNS are not eligible for variances. See *E.I. DuPont* v. *Train*, 430 U.S. 112 (1977).

(2) Permit Modifications. It may be necessary to modify a permit at some point after it has been issued. In a permit modification, only the conditions subject to change are reconsidered. All other permit conditions remain in effect unchanged. A permit modification may be triggered in several ways, such as when the regulatory agency inspects the facility and finds a need for the modification, or when information submitted by the permittee suggests a need for a modification. Any interested person may request that a permit modification be made. There are two classifications of modifications: major and minor. From a procedural standpoint, they differ primarily with respect to the public notice requirements. Major modifications require public notice while minor modifications do not. See 40 CFR 122.63. Virtually all modifications that result in less stringent conditions are treated as a major modification, with provisions for public notice and comment. Conditions that would necessitate a major modification of a permit are described in 40 CFR 122.62. Minor modifications are generally non-substantive changes. The conditions for minor modification are described in 40 CFR 122.63.

VII. Environmental Impacts

This section of the preamble describes the environmental impacts of the air and water regulations being promulgated today, and the environmental impacts of the MACT II regulations being proposed today. These impacts are described in terms of reductions in air pollution emissions expected as a result of the final MACT I and proposed MACT II rules, as well as the reduction in water pollution (effluent) discharges expected as a result of today's effluent limitations guidelines and standards for Subparts B and E. (In this section, all references to MACT I include MACT III unless expressly noted.) The emissions and effluent reductions described in this section generate the quantified and monetized benefits described in Section VIII of this preamble. This section also discusses the non-water quality environmental impacts of the effluent limitations guidelines and standards promulgated today, including air emissions, energy requirements, solid waste generation, water use, and wood consumption. Sections II.B.2 and VII.A describe air and water pollution control technologies for each subcategory regulated today: Kraft, Soda, Sulfite, and Semi-chemical mills that are subject to MACT I and MACT III standards; and bleached papergrade kraft and soda and papergrade sulfite mills that are subject to effluent limitations guidelines and standards. EPA estimates that the application of these technologies by the 155 mills regulated by today's air rules, including 96 of those mills also regulated by today's water rules, will substantially reduce air emissions and water pollution discharges, as described in Section VII.B.

A. Summary of Sources and Level of Control

Table VII–1 shows a summary of sources and technology bases/level of control for the final BAT/PSES effluent limitations guidelines and standards, and the final MACT I standards. The summary of sources and level of control for MACT II are discussed in the preamble for the proposed MACT standards elsewhere in today's **Federal Register**.

reflecting both bleach plant discharge patterns and secondary biological treatment system performance that is readily measured at reasonable cost. At this time, AOX analysis costs $120 per sample. This cost is likely to decrease after this regulation is promulgated with increased capacity at commercial laboratories and analytical laboratories on-site at many mills. While this bulk parameter measures all chlorinated organic constituents in wastewater and not individual pollutants, daily monitoring will provide an essentially continuous data stream on a quick turnaround basis to mill operating personnel and permit compliance authorities to assess and control process technologies and manage the performance of end-of-pipe biological treatment systems.

The minimum monitoring frequencies in this rule as described above will provide sufficient information to evaluate mill compliance with the promulgated limitations over the long term and allow permitting and pretreatment authorities to judge whether a different frequency of monitoring is warranted after the initial compulsory period of minimum monitoring has been completed. These data will prove useful to permitting authorities and also to mill operators in developing a robust mill-specific compliance data base with which to analyze the effects of mill processes on effluent trends. The five-year duration of the minimum monitoring requirements is consistent with permit issuance cycles, will ease administrative burdens on operators and permitting authorities, and will provide data useful for establishing appropriate monitoring requirements during future permit renewals.

Following completion of the compulsory five-year monitoring period set forth by this rule, the permitting or pretreatment authority has discretion to adjust monitoring requirements as deemed appropriate on a case-by-case basis. For those mills consistently demonstrating reductions superior to those required merely to comply with their permit requirements, EPA believes that it may be appropriate to allow less frequent monitoring to reduce the regulatory burden. EPA expects the permitting or pretreatment authority also to consider the mill's compliance and enforcement history in determining monitoring frequencies. This avenue for relief provides incentives for voluntary reductions of pollutant discharges through such means as reuse and recycling. EPA also expects permitting and pretreatment authorities to consider whether poor performance, compliance or enforcement history, or other site-specific factors indicate a need to impose more frequent monitoring than that specified in this rule.

EPA has issued interim guidance for performance-based reductions of NPDES permit monitoring frequencies, which may be useful for permit writers and pretreatment authorities in determining alternative monitoring frequencies at the close of the compulsory five-year period imposed by this rule. (See Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies, April 1996, EPA–833–B–96–001). This document provides guidance to permit writers on implementing EPA's NPDES regulations regarding appropriate monitoring in permits and describes the conditions under which reduced monitoring would be justified. Pretreatment control authorities also may find this guidance useful in setting monitoring frequencies for industrial users of POTWs. The current guidance applicable to all industrial point sources is dated April 19, 1996, and is subject to revision.

(c) Certification for TCF Bleaching. Mills certifying in their permit application process that all bleaching processes are totally chlorine-free are exempted from the minimum monitoring frequencies established in this rule, provided that analytical data routinely submitted as part of the permit application confirm the absence of chlorinated compounds. See 40 CFR 430.02. EPA believes it is appropriate to exclude TCF mills from the minimum monitoring frequencies for chlorinated compounds since any process change that introduces chlorinated compounds to the bleaching process requires notification to the permitting authority and would result in reopening the permit for modification. See, e.g., 40 CFR 122.21(g)(3), 122.21(g)(7), and 122.41(l).

(d) ECF Certification in Lieu of Monitoring. In response to comments, EPA has considered whether certification of ECF bleaching processes can be used in lieu of monitoring. Because of the effect that operation and control of pulping and bleach plant processes have on generation of chlorinated pollutants, EPA has determined that the information available at this time does not demonstrate that ECF certification alone is sufficient to ensure compliance with the regulations promulgated today. Therefore, this rule does not allow certification of ECF bleaching to replace monitoring. (See DCN 14497, Vol. I, and section VI.B.5 of this preamble for a discussion of factors affecting chlorinated pollutant generation.)

Elsewhere in today's **Federal Register**, however, EPA is proposing to allow mills to demonstrate compliance with chloroform limitations by certifying that they use ECF bleaching processes and that these processes are operated in a manner consistent with certain process and related factors. In this notice, EPA also is seeking additional chloroform data, along with corresponding process data, to determine whether an ECF certification process for chloroform should require certification of certain process factors; for example, factors relating to residual lignin content, chemical application rates, and other process variables.

d. Intake Credits, Upsets, and Bypasses. An intake credit is an adjustment made to an effluent limitation to reflect the presence of a pollutant in the discharger's intake water beyond what is removed by an installed technology that would otherwise meet the technology-based effluent limitation or standard. EPA's regulations concerning intake credits are set forth at 40 CFR 122.45 and 40 CFR 403.15.

A "bypass" is an intentional diversion of waste streams from any portion of a treatment facility. An "upset" is an exceptional incident in which there is unintentional non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. EPA's regulations concerning bypasses and upsets are set forth at 40 CFR 122.41 (m) and (n).

e. Variances and Modifications to Permits. (1) Variances. Dischargers subject to the BAT and PSES limitations promulgated in these final regulations may apply for a Fundamentally Different Factors (FDF) variance under the provisions of section 301(n) of the CWA. The FDF variance considers those facility-specific factors that a permittee believes to be uniquely different from the factors considered by EPA in developing an effluent guideline to determine whether the effluent guidelines limitations should be inapplicable to the permittee's facility. An FDF variance is based only on information submitted to EPA during the rulemaking establishing the effluent limitations, or on information the applicant did not have a reasonable opportunity to submit during the rulemaking process. See CWA section 301(n)(1)(B). If fundamentally different factors are determined to exist, the alternative effluent limitations for the petitioner must be no less stringent than those justified by the fundamental difference. See CWA section 301(n)(1)(C). The alternative effluent

sulfite pulp segment. In cases where other sources of AOX, such as paper machines, make the end-of-pipe AOX limitations in this rule impractical or infeasible for the purpose of assessing the contribution of AOX from bleach plant sources, the AOX limitation may be imposed on internal waste streams (i.e., bleach plant effluent) before mixing with other waste streams containing AOX. See 40 CFR 122.45(h).

(4) Minimum Monitoring Frequencies. (a) Rationale for Establishing Minimum Monitoring Frequencies. EPA proposed specific minimum monitoring frequencies for pollutants in bleach plant and end-of-pipe effluent discharges. See 58 FR at 66189. Although EPA proposed minimum monitoring requirements for BOD_5 and TSS limitations established as part of NSPS, EPA is not specifying such requirements in the final rule because permit authorities have ample experience regulating these pollutants and can determine the appropriate monitoring frequencies. See Section VI.A.3 for a discussion of BOD_5 monitoring requirements under today's air rule. See also Section VI.B.7 for a discussion of monitoring requirements associated with BMPs.

The final rule specifies minimum monitoring frequencies for AOX, dioxin, furan, chloroform, and chlorinated phenolic pollutants for non-TCF mills because of the nature and composition of the discharges from non-TCF bleached papergrade kraft and soda and papergrade sulfite mills. See 40 CFR 430.02 (a) and (b). Wastewaters from these mills have been found to contain chlorinated organic compounds that are highly toxic and bioaccumulative (e.g., dioxin, furan, and chlorinated phenolic pollutants). Process-related variability in generating these pollutants is clearly reflected in available data. Therefore, given the environmental significance of these pollutants, minimum monitoring is both necessary and appropriate to ensure that data are available to permitting authorities to have an adequate basis to verify compliance with the technology-based effluent limitations and standards. In contrast to discharges of BOD_5 and TSS, receiving water effects from discharges of these chlorinated pollutants are not as easily detected, are not as well understood, and do not manifest themselves in a manner that enables a mill to quickly become aware of and react to releases that may be harmful to the environment.

The monitoring requirements imposed in 40 CFR 430.02 will not take effect until EPA has obtained approval of these information collection requirements from the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* For monitoring requirements applicable to direct dischargers, EPA will seek to amend the NPDES Discharge Monitoring Report ICR No. 229, OMB approval number 2040–0004, prior to its expiration on May 31, 1998. For indirect dischargers, EPA will seek to add specified monitoring requirements for indirect dischargers to the National Pretreatment Program ICR No. 2, OMB approval number 2040–0009, when it expires on October 31, 1999. EPA will not seek to amend this ICR prior to its expiration date because the monitoring requirements for indirect dischargers do not become effective until April 16, 2001 for existing indirect dischargers, and EPA anticipates no new indirect dischargers commencing discharge prior to the ICR expiration date.

(b) Duration of Minimum Monitoring Frequency. The final rule includes minimum monitoring frequency requirements for demonstrating compliance with limitations and standards for dioxin, furan, chloroform, the 12 chlorinated phenolic pollutants, and AOX for non-TCF mills. See 40 CFR 430.02(a). Permitting and pretreatment authorities retain authority to specify more frequent monitoring on a case-by-case basis and must specify AOX monitoring frequency for TCF mills on a best professional judgment basis. The minimum monitoring frequencies are applicable to mills in Subparts B and E for a duration of five years after inclusion in NPDES permits for direct dischargers. See 40 CFR 430.02(b). For existing indirect dischargers, the minimum monitoring requirements apply until April 17, 2006 which reflects a five-year monitoring period following the termination of the three-year compliance period authorized by CWA Section 307(b)(1). *Id.* For new indirect dischargers, the five year minimum monitoring period commences upon operation. *Id.*

EPA has determined the minimum monitoring frequencies established by this rule are necessary to demonstrate compliance with the effluent limitations guidelines and standards promulgated today, particularly considering the degree of change that is expected to occur to pulping and bleaching processes as this rule is implemented. In establishing the minimum monitoring frequencies for the regulated pollutants, the Agency has struck a balance between the cost of the monitoring regimen and the need to ensure that sufficient data are consistently available to permitting authorities to provide an adequate basis to verify compliance with the effluent limitations and standards and to mills to quickly become aware of and react to releases that may be harmful to the environment.

The Agency has selected a minimum monitoring frequency of once per month for dioxin, furan, and chlorinated phenolic pollutants. See 40 CFR 430.02(a). These pollutants are the most toxic and bioaccumulative among those regulated yet also are the most costly to analyze (total cost of approximately $1,325 per sample; $825 per sample for dioxin, furan, and $500 per sample for all 12 chlorinated phenolic analytes). EPA expects that 12 data points for each pollutant per year, together with daily end-of-pipe AOX data and information on process conditions from detailed mill logs (e.g., unbleached pulp kappa numbers, bleach plant kappa factors, bleached pulp brightness, etc.) that are reviewable upon request, will yield a meaningful basis for establishing compliance with the promulgated limitations through long-term trends and short-term variability in dioxin, furan, and chlorinated phenolic pollutant discharge loading patterns.

The Agency has selected a minimum monitoring frequency of once per week for chloroform. See 40 CFR 430.02(a). This minimum monitoring frequency has been selected because data available indicate there can be considerable temporal variability of this pollutant in bleach plant wastewaters. Therefore, more data are required to adequately assess compliance with the promulgated limitations and standards on both a long-term and short-term basis. While the cost for laboratory analysis of chloroform (approximately $270 per sample) is much lower than for dioxin, furan, and chlorinated phenolic pollutants, chloroform sampling requirements are more extensive and rigorous (e.g., sampling of all bleach plant filtrates using special equipment and containers to prevent volatilization). Weekly data (52 data points) and information on process conditions from detailed mill logs that are reviewable upon request are expected to yield an adequate basis for establishing long-term compliance trends in chloroform discharge loadings and developing process control strategies to ensure the short-term compliance in chloroform discharge loadings.

The Agency has selected a minimum monitoring frequency of once every day for AOX for non-TCF mills. See 40 CFR 430.02(a). This minimum monitoring frequency has been selected because there can be considerable daily variability in chlorinated organic discharge loadings to receiving streams

pollution reduction achievable for these pollutants through the use of BAT, NSPS, PSES and PSNS technologies for these subparts. (Section VI.B.5.a(4) provides a detailed discussion about ML limitations.) EPA intends for mills subject to ML limitations to have pollutant discharges with concentrations less than the Minimum Levels of the analytical methods specified today in § 430.01(i).

Compliance with the ML limitation for an analyte can only be demonstrated by using the method specified in § 430.01(i) for that analyte, or other methods approved in 40 CFR Part 136 that have Minimum Levels equal to or less than the minimum level specified today in § 430.01(i). Mills are not authorized under this rule to demonstrate compliance with an ML limitation codified today by using an analytical method with a minimum level above the Minimum Level specified in § 430.01(i).

The Minimum Level specified for each method is the lowest level at which calibration is performed. See 40 CFR 430.01(i). Laboratories calibrate their equipment by using standards (i.e., samples at several known concentrations of each analyte). Calibration is necessary because laboratory equipment does not measure concentrations directly. Rather, the equipment generates signals or responses from analytical instruments that must be converted to concentration values. The calibration process establishes a relationship between the signals and the known concentration values of the standards. This relationship is then used to convert signals for samples with unknown concentrations.

In the calibration process, one of the standards will have a concentration value at the Minimum Level for each analyte. Because the minimum levels are the lowest levels for which laboratories calibrate their equipment, measurements below the Minimum Level are to be reported as being "less than Minimum Level," or "<ML".

Often, laboratories report values less than minimum levels to be "not detected" or "<ML." In some cases, however, the laboratories report these values as if the values were quantified. For example, if the Minimum Level specified in § 430.01(i) is 10 ppq, the laboratory might report a measurement that is 4 ppq. Such reported values might occur in two situations. In the first situation, the laboratory could have used the method specified in § 430.01(i), but referred to the measurement as "detected" although it was less than the Minimum Level. The second situation could occur in the future as the analytical methods become more sensitive than the methods specified in § 430.01(i). Using such future methods could conceivably allow laboratories to reliably measure values less than today's minimum levels. Such measurements resulting from either situation would be considered to demonstrate compliance with the ML limitations, because these measurements are less than the method ML specified in § 430.01(i).

When monitoring for compliance with this final rule, a sample-specific Minimum Level greater than the method Minimum Level will not demonstrate compliance with an ML limitation. Such sample-specific Minimum Levels may result from sample volume shortages, breakage or other problems in the laboratory, or from failure to properly remove analytical interferences from the sample. EPA believes that all of these situations can be avoided by careful adherence to sample collection and laboratory analysis procedures. For example, in the Agency's long-term variability study, some of the one-liter jars that were sent to laboratories for analysis were not filled to capacity. In this example, adjustments to the Minimum Levels could have been avoided if a sufficient volume of sample had been collected by filling the one-liter jars to capacity, or by using larger or extra jars. Mill personnel should collect sufficient volume to allow for analysis of the entire sample volume specified in the method and for dilutions, re-analyses, or other problems that may occur. In addition, it is often possible for the laboratory to adjust for extraction of smaller sample volumes by further concentrating the resulting extracts prior to analysis.

Table VI–11 provides some examples demonstrating compliance with the ML limitations. In these examples, the method ML specified in § 430.01 is 10 ppq.

TABLE VI–11.—EXAMPLES DEMONSTRATING COMPLIANCE WITH ML LIMITATIONS

Is concentration reported as "detected" or "non-detected" in the sample?	Value reported by laboratory (ML in these examples is 10 ppq)	Does the sample demonstrate compliance?	Explanation for compliance determination
Detected	4 ppq	Yes	4 ppq is less than the ML specified in § 430.01.
Detected	10 ppq	No	Compliance is demonstrated only with measurements less than the ML specified in § 430.01.
Detected	11 ppq	No	The measured value is greater than the ML specified in § 430.01.
Non-detected	<5 ppq	Yes	<5 ppq is less than the ML of 10 ppq specified in § 430.01.
Non-detected	<10 ppq	Yes	Compliance is demonstrated for all values less than the ML specified in § 430.01.
Non-detected	<11 ppq	No	The sample-specific ML must be less than the ML of 10 ppq specified in § 430.01.

(3) AOX at Calcium-, Magnesium-, or Sodium-Based Sulfite Mills. The AOX limitation for calcium-, magnesium-, or sodium-based papergrade sulfite mills is expressed as less than the Minimum Level (ML) of the analytical method. As discussed in section VI.B.6, this AOX limitation is based on transfer of data collected at the bleach plant effluent to the end-of-pipe for BAT. EPA received comments asserting that this transfer of data does not account for potential sources of AOX other than the bleach plant. Examples of these potential sources of AOX include the release of AOX from purchased pulp used in papermaking, the use of chlorinated compounds for control of biological growth on paper machines, chlorine use in water treatment, and bleaching colored broke in the stock preparation area. Hypochlorite is also used in deinking processes to strip color from post-consumer waste.

AOX contributions from deinking operations are not covered by this rule and would be addressed in developing appropriate permit limitations as described in VI.B.8.b(2) above. AOX contributions due to chlorine use in treating process water supplies are not taken into account in the development of limitations and standards for the calcium-, magnesium-, or sodium-based

machine moisture content, while market pulp is measured as air-dry metric tons (10 percent moisture). EPA is not changing this definition of production as it applies to the effluent limitations and standards for any subcategory in Part 430 other than subparts B and E. EPA is also retaining the existing definition of production for the NSPS for conventional pollutants being promulgated today for subpart B and subpart E. See 40 CFR 430.01(n)(1).

However, EPA is codifying a new definition of production for the AOX and chloroform limitations being promulgated today for subparts B and E. See 40 CFR 430.01(n)(2). Under the new specialized definition, the production-normalizing parameter to be used by permit writers in calculating mass-based limitations for chloroform and AOX is air-dried metric tons of brownstock pulp (10 percent moisture) entering the bleach plant at the stage during which chlorine or chlorine-containing compounds are first applied to the pulp. In the case of bleach plants that use totally chlorine-free bleaching, the production-normalizing parameter used to calculate mass-based limitations shall be air-dried metric tons of brownstock pulp (10 percent moisture) entering the first stage of the bleach plant from which wastewater is discharged. *Id.* Production, in turn, is defined as the annual unbleached pulp production that enters the bleach plant (at ten percent moisture) divided by the number of operating days of the bleach plant. *Id.*

The Agency had proposed to change the current definition of production in part 430 by adding the following statement: "Production in each of the foregoing cases shall be determined for each mill based upon the highest annual production in the past five years divided by the number of operating days that year." See 58 FR at 66189. EPA has decided not to revise the definition to include a new time basis because EPA is not revising the current BPT and BCT effluent limitations guidelines at this time for subparts B and E. Codifying a new time basis for determining production of AOX and chloroform would have required permit writers to apply different time bases for determining production for purposes of calculating BAT limitations and limitations for conventional pollutants. In EPA's view, this would have unduly complicated the permitting process. In addition, for NSPS, introducing a time basis would be illogical because new sources do not have five years of data from which to determine the one highest year.

(2) Determination of Permit Limitations for Multiple Subcategory Mills. For facilities with multiple point source categories, subcategories, and segments, the appropriate guidelines for each category, subcategory (or subpart), and segment are used to determine a single permit limit for each pollutant. Chapter 5 of the U.S. EPA NPDES Permit Writers' Manual (EPA–833–B–96–003, December 1996) provides guidance in determining permit limits in situations when the effluent guidelines for one subcategory regulates a different set of pollutants than the effluent guidelines applicable to another subcategory. For mill subject to today's rule, this situation may arise in setting permit limits for AOX when the mill has production in multiple subcategories.

For pollutants regulated today at the bleach plant (i.e., dioxin, furan, chlorinated phenolic pollutants, and chloroform, and, for subpart B PSES/PSNS, AOX), EPA does not believe that multiple guidelines will be relevant. The bleach plant is unlikely to be used for more than one subcategory (or segment in subpart E), and thus, the permit limit will be determined by the limitations and standards for a single subcategory (or segment).

There may be instances where a pollutant is regulated under the limitations and standards promulgated today and the permitting authority also wishes to establish limits for that particular pollutant have yet to be established. For example, the permitting authority might need to use best professional judgment to determine end-of-pipe limits for AOX for a mill with production not only in subpart B or E (for which AOX limitations are being promulgated today) but also in another subpart (for which no AOX limitations have been promulgated) that generates AOX. In these instances, the permitting authority would use best professional judgment to develop pollutant limits for wastestreams and pollutants not covered by today's rulemaking and apply those limits to determine a proper permit limitation for the mill.

Following promulgation of today's rules, EPA will develop and publish additional guidance for the pulp and paper industry for determining permit limitations for facilities with production in multiple categories, subcategories, and segments.

c. Compliance With Effluent Limitations. (1) Compliance Demonstration for In-Plant Limitations. The effluent limitations and standards that the Agency is promulgating today for dioxin, furan, chloroform, the 12 chlorinated phenolic pollutants and AOX will be applied (depending on the subcategory and segment) to the total discharge from each physical bleach line operated at the mill. At most mills, wastewaters from acid and alkaline bleaching stages are discharged to separate sewers. At some mills, however, bleach plant wastewaters are discharged to a combined sewer containing both acid and alkaline wastewaters.

For dioxin, furan, and chlorinated phenolic compounds, compliance with the effluent limitations and standards can be demonstrated by collecting separate samples of the acid and alkaline discharges and preparing a flow-proportioned composite of these samples, resulting in one sample of bleach plant effluent for analysis. However, in determining the limitations, EPA used data from acid and alkaline bleach plant effluents that had been analyzed separately. (EPA also used data from combined sewers.) In a comment on Method 1653 (DCN 20095 A8), the commenter reported problems in achieving the Minimum Level in Method 1653 for samples of composited acid and alkaline filtrates. If necessary to achieve the Minimum Level, EPA recommends that the facility test the effluents separately for reliable determination of the chlorophenolics, TCDD, and TCDF.

For chloroform, however, separate samples and analyses of all bleach plant filtrates discharged separately are required to prevent the loss of chloroform through air stripping as the samples are collected, measured, and composited or through chemical reaction when the acid and alkaline samples are combined. If separate acid and alkaline sewers do not exist, compliance samples must be collected from the point closest to the bleach plant that is or can be made physically accessible.

(2) Compliance with ML Limitations. In today's rulemaking for the Bleached Papergrade Kraft and Soda subcategory, EPA is establishing limitations and standards for 12 chlorinated phenolic pollutants and dioxin, and alternative TCF limitations and standards for AOX, that are expressed as less than the Minimum Level ("<ML"). See 40 CFR 430.24, 430.25, 430.26, 430.27. For various segments of the Papergrade Sulfite subcategory, EPA is establishing limitations and standards for AOX, chlorinated phenolic pollutants, dioxin, and furan that are also expressed as "<ML." See 40 CFR 430.54, 430.55, 430.56, 430.57. Henceforth, this discussion refers to these limitations and standards as "ML limitations". The "ML" is an abbreviation for the Minimum Level identified today in § 430.01(i) for the analytical methods that EPA used to determine the level of

supplements the capacity of an existing fiber line (and also, incidentally, increases the total quantity of pollutants discharged by the mill), the new fiber line would be considered a new source subject to NSPS.

EPA believes it is appropriate to subject a new fiber line that is substantially independent of an existing fiber line to new source performance standards because a mill designing that new fiber line has pollution prevention opportunities akin to those available to greenfield mills. For example, a mill would have the opportunity to incorporate pollution prevention principles when designing a new fiber line, including a new flow scheme and water balance. This new fiber line would provide the opportunity to take advantage of pollution prevention savings attributable to reduced chemical needs (and costs), increased energy recovery, the possibility of improving yield, and other operation and maintenance improvements.

EPA notes that a fiber line that is substantially independent of an existing fiber line is a new source even if the new fiber line is enrolled in the Voluntary Advanced Technology Incentives Program. EPA believes that this is appropriate because the supplemental fiber line increases both the mill's production capacity and its discharge of pollution to the environment. However, the fiber line could qualify for incentives if it is enrolled in the Voluntary Advanced Technology Incentives Program for NSPS at the Tier II or Tier III level.

As reflected in the July 1996 Notice, 61 FR at 36848, EPA had considered excluding from the definition of new source those mills that renovated existing fiber lines but remained at existing production levels. In response to comments, EPA has decided not to introduce production levels as a factor in determining new source status. First, taking production levels into account in determining whether an existing source becomes a new source would be a departure from current practice that EPA believes is not justified in this case. EPA believes that the new source status of a subpart B or E mill should be determined by the degree of process and production changes made at a mill's fiber lines—such as the replacement of existing digesters and bleach plants with new equipment—because those changes, not production levels, present the real opportunities for pollution prevention represented by NSPS or PSNS. Moreover, EPA agrees with comments stating that mills subject to subpart B or E frequently undergo changes in various degrees to increase production levels and that many of these changes do not result in or from substantially independent facilities or the total replacement of existing facilities. See DCN 25538 at 70–72. Therefore, the mere fact that a mill increases its production levels does not mean that it concurrently has the opportunity to install the type of advanced pollution prevention technologies represented by NSPS.

(3) Non-Continuous Discharger. EPA is changing the regulatory language defining non-continuous dischargers as it applies to subparts B and E. See 40 CFR 430.01(k)(2). EPA is also republishing, without change, the current definition of non-continuous dischargers because it continues to apply to the other subparts in part 430 and to the determination of technology-based effluent limitations on conventional pollutants for existing dischargers subject to subpart B or E. See 40 CFR 430.01(k)(1).

EPA had proposed a new definition that would have defined as a non-continuous discharger a mill that stored wastewaters for periods of at least 24 hours and that released that wastewater on a batch basis. In the final definition applicable to subparts B and E, EPA is retaining the storage component of the proposed (and existing) regulation but is not specifying a minimum 24-hour storage period because EPA determined that it had no particular significance for these subparts. However, as indicated in the July 1996 Notice, 61 FR at 36842, EPA is adding language defining as a non-continuous discharger a discharger that releases stored wastewater on a variable flow or a pollutant loading rate basis. Finally, in this new definition, EPA is clarifying that it applies to storage or release of wastewaters required by the permitting authority for the purpose of protecting receiving water quality, among other purposes. See 40 CFR 430.01(k)(2). For subparts B and E only, EPA also is eliminating the requirement in the existing regulation, at 40 CFR 430.01(c) (1996 ed.), for the NPDES authority to include maximum day and maximum 30-day average concentration limitations consistent with BPT, BCT, or NSPS limitations as appropriate. See 40 CFR 430.01(k). EPA will defer to the NPDES authority to establish maximum day and maximum 30-day average limitations that are necessary to protect receiving water quality. In later final rulemaking phases (see section II, table II–2), EPA intends to adopt for remaining subcategories the same definition for non-continuous dischargers as is being promulgated today for subparts B and E.

(4) Retention of Previously Promulgated Effluent Limitations Guidelines and Standards. As discussed in more detail in Section VI.B.2, EPA is not revising BPT or BCT effluent limitations for conventional pollutants for subparts B and E. Therefore, EPA is retaining the previously promulgated limitations for these pollutants and subparts. See 40 CFR 430.22, 430.23, 430.52, 430.53.

EPA is also retaining previously promulgated NSPS for subparts B and E because new sources that commenced operation prior to the effective date of today's NSPS remain subject to the earlier standards for ten years beginning on the date construction of the new source was completed. CWA section 306(d); see 40 CFR 430.25(a), 430.55(a).

Finally, as discussed in more detail in Section VI.B.3.f, subparts B and E include previously promulgated end-of-pipe effluent limitations guidelines and standards for pentachlorophenol and trichlorophenol. EPA is also retaining the accompanying provisions authorizing mills that do not use those chemicals as biocides to certify this fact to the permitting or pretreatment authority with the result that they would not be subject to those limitations or standards. *Id.*

In addition to today's new regulations for subparts B and E, EPA is recodifying the previously promulgated BPT, BCT, BAT, NSPS, PSES and PSNS for the other subparts of the pulp, paper, and paperboard category. These limitations regulate the discharges of BOD_5, TSS, zinc, and other analytes. Although EPA is reorganizing the former subcategories in accordance with the new subcategory designations, EPA is not changing these limitations and standards. See Section VI.B.1.

b. Determination of Effluent Limitations for Permits. (1) Definition of Production and Production-Normalizing Parameters. The Agency has based some of the effluent limitations guidelines and standards promulgated today on pollutant concentrations. Others are mass-based, that is, normalized on the basis of an appropriate measure of production. Limitations and standards for AOX, chloroform, BOD_5, and TSS fall into this category.

This appropriate measure of production is known as the "production-normalizing parameter." The current definition of "production-normalizing parameter" is annual off-the-machine production (including off-the-machine coating, where applicable) of pulp, paper, and/or paperboard, divided by the number of operating days that year. Most paper and paperboard production is measured at the off-the-

new source status. Indeed, the decision to promulgate subcategory-specific criteria in this rule is specifically contemplated by the general criteria codified at 40 CFR 122.29(b)(1). EPA believes this tailored definition is particularly important in view of the Voluntary Advanced Technology Incentives Program EPA is also promulgating today for subpart B mills. Through the Voluntary Advanced Technology Incentives Program, EPA is encouraging mills to install new process technologies and even to redesign bleach plant operations in order to achieve effluent reductions beyond those required at the baseline BAT level. EPA does not want existing mills that voluntarily choose to participate in the Voluntary Advanced Technology Incentives Program to be required to meet NSPS simply as a consequence of that election. Therefore, by promulgating a definition of "new source" specifically for subparts B and E, EPA hopes not only to clarify application of the Part 122 definitions but also to provide certainty to subpart B mills choosing to participate in the Voluntary Advanced Technology Incentives Program that they will not inadvertently become a new source, which would subject them to compulsory NSPS.

For the convenience of the permit writer, the definition of new source being codified in part 430 restates the three criteria already codified in § 122.29(b)(1). The first criterion provides that a source is a new source if it is constructed at a site at which no other source is located. Section 430.01 (j)(1)(i); see 40 CFR 122.29(b)(1)(i). As applied to part 430, this criterion is intended to ensure that a greenfield mill is characterized as a new source and hence is subject to NSPS or PSNS.

The second criterion specified in today's definition of new source incorporates the language of 40 CFR 122.29(b)(1)(ii) with two additions. First, it provides that a fiber line that totally replaces an existing fiber line is a new source (unless that fiber line is enrolled in the Voluntary Advanced Technology Incentives Program). Second, it includes a list of modifications that would not trigger the new source definition if made by subpart B or E mills. See 40 CFR 430.01(j)(1)(ii) and (2). This criterion provides essentially that a fiber line that is modified to comply with baseline BAT effluent limitations or that is totally rebuilt to comply with Advanced Technology BAT limitations is not a new source. (A fiber line is a series of operations employed to convert wood or other fibrous raw material into pulp. If the final product is bleached pulp, the fiber line encompasses pulping, deknotting, brownstock washing, pulp screening, centrifugal cleaning, and multiple bleaching and washing stages.)

Among the changes specified in the regulation that alone do not cause an existing fiber line at a mill to be considered a new source are: Upgrades of existing pulping operations; upgrades or replacement of pulp screening and washing operations; installation of extended cooking and/or oxygen delignification systems or other post-digester, pre-bleaching delignification systems; and bleach plant modifications including changes in methods or amounts of chemical applications, new chemical applications, installation of new bleaching towers to facilitate replacement of sodium or calcium hypochlorite, and installation of new pulp washing systems. 40 CFR 430.01(j)(2)(i)–(iv). By expressly excluding these process modifications from the new source definition, EPA thus allows a mill to implement the baseline BAT/PSES technologies without triggering NSPS or PSNS. EPA believes that interpreting process modifications that are designed to achieve compliance with baseline BAT/PSES limitations as an existing source modification is consistent with Congress' intentions in the Clean Water Act concerning the respective roles of standards for existing and new sources.

As discussed in more detail below in connection with the third new source criterion, EPA believes it is appropriate to define a new fiber line as a new source because the construction of the new fiber line (whether to supplement or replace an existing fiber line) presents the type of pollution prevention opportunities customarily represented by NSPS. However, EPA believes it is also appropriate to treat the replacement fiber line as an existing source if that fiber line is enrolled in the Voluntary Advanced Technology Incentives Program. See 40 CFR 430.01(j)(2)(v). EPA has decided to do this because requiring the new fiber line to meet baseline NSPS requirements would defeat the purpose of the Voluntary Advanced Technology Incentives Program by undercutting the more environmentally protective pollution prevention opportunities and limitations associated with that program. In the first place, Advanced Technology BAT limitations at the Tier II and Tier III levels are more stringent than the baseline NSPS requirements: EPA's definition of new source thus is intended to allow mills to commit to greater pollutant reductions than EPA could otherwise compel and to do so incrementally while maintaining use of the existing fiber line in the interim. Similarly, the Advanced Technology BAT limitations at the Tier I level promote pollution prevention opportunities not necessarily assured by NSPS, even though the technology bases for NSPS and Tier I are similar. EPA has established different limitations for Tier I than for NSPS because the regulations are intended to achieve different objectives. The new source performance standards for AOX are more stringent because, as a statistical matter, EPA determined that this performance level reflects the best demonstrated performance by mills using the NSPS technology. The Tier I limitations for AOX, in contrast, are intended to reflect a more inclusive performance level that EPA believes existing mills employing extended delignification can achieve, in order to encourage more mills to implement extended delignification technologies. The Tier I limitations also require the recycle of filtrates to the recovery systems and impose limitations on the lignin content of unbleached pulp, which EPA hopes will promote the use of particular pollution prevention technologies and, in turn, encourage mills to look beyond Tier I to the Tier II and Tier III levels. This goal contrasts with the objective of NSPS, which simply is to compel mills to achieve certain discharge levels by any combination of technologies the mill selects, and would be defeated if the definition of new source would have the effect of moving Tier I mills into NSPS. Therefore, EPA has decided that, on balance, imposing NSPS on mills that replace fiber lines for the purpose of participating in the Voluntary Advanced Technology Incentives Program would discourage rather than encourage the long-term goal of achieving even greater environmental performance.

The third criterion appearing in the definition of new source in § 430.01(j)(1)(iii) is identical to the third criterion at § 122.29(b)(1)(iii), and provides that a source is a new source if its processes are substantially independent of an existing source at the same site. In determining whether processes are substantially independent, the permitting or pretreatment authority is directed to consider such factors as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source. For example, if a mill operating in the Bleached Papergrade Kraft and Soda subcategory builds and operates an entirely new fiber line that permanently

at POTWs. For this reason, EPA is including as part of its pretreatment standards the requirement that indirect discharging mills implement BMPs in accordance with this regulation.

8. Regulatory Implementation for Effluent Limitations Guidelines and Standards

a. Applicability of Effluent Limitations Guidelines and Standards. Effluent limitations act as a primary mechanism to control discharges of pollutants to waters of the United States. These limitations are applied to individual mills through NPDES permits issued by EPA or authorized States under section 402 of the CWA. In addition, the pretreatment standards are directly applicable to indirect dischargers. Once today's regulations become effective, the effluent limitations and standards for the appropriate subcategory must be applied in all Federal and State NPDES permits issued to direct dischargers affected by this rule. See Section 301(b)(2), 402(a). This section describes the applicability of these limitations and standards to process and other wastewaters generated by the mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories, defines new sources subject to today's NSPS and PSNS, defines non-continuous dischargers and the applicable limitations, and describes the retention of the previously promulgated limitations and standards.

(1) Applicability of Limitations to Process and Other Wastewaters. The effluent limitations guidelines and standards for the pulp and paper industry apply to discharges of process wastewaters directly associated with the manufacturing of pulp and paper. See 40 CFR 430.00. EPA proposed a definition of process wastewater as any water that, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. The proposed definition specifically included boiler blowdown; wastewaters from water treatment and other utility operations; blowdown from high rate (e.g., greater than 98 percent) recycled non-contact cooling water systems to the extent they are mixed and co-treated with other process wastewaters; and stormwaters from the immediate process areas to the extent they are mixed and co-treated with other process wastewaters. The proposed definition specifically provided that contaminated groundwaters from on-site or off-site groundwater remediation projects would not be process wastewaters. EPA proposed to require separate permitting for the discharge of such groundwaters. The proposed definition also specifically excluded certain process materials from the definition of process wastewater. These process materials included: Green liquor at any liquor solids level; white liquor at any liquor solids level; black liquor at any liquor solids level resulting from processing knots and screen rejects; black liquor after any degree of concentration in the kraft or soda chemical recovery process; reconstituted sulfite and semi-chemical pulping liquors prior to use; any pulping liquor at any liquor solids level resulting from spills or intentional diversions from the process; lime mud and magnesium oxide; pulp stock; bleach chemical solutions prior to use; and papermaking additives prior to use (e.g., alum, starch and size, clays and coatings). The proposed regulation then would have prohibited the discharge of these materials into POTWs or waters of the United States without an NPDES permit or other authorization.

In this final rule, EPA is promulgating a definition of process wastewater applicable to subparts B and E. In response to the comments opposing the exclusion of these process materials, EPA revised the proposed definition of process wastewaters to eliminate the exclusion of the named process materials. See 40 CFR 430.01(m). The proposed language would have effectively required "closed cycle" mills, which was not EPA's intent. The exclusion of contaminated groundwater has been retained. Because the quantity and quality of such groundwaters are likely to be highly variable on a site-specific basis, the Agency concluded that their discharge to surface waters should be regulated separately from, or in addition to, process wastewaters on a case-by-case basis. EPA also has included leachate wastewaters from landfills owned and operated by mills generating wastes associated with manufacturing or processing subject to subparts B and E, where these leachate wastewaters are commingled with other process wastewaters. These leachate wastewaters typically comprise a very small proportion of the total volume received in end-of-pipe wastewater treatment facilities. In cases where the volumes or pollutants found in leachate wastewaters are of concern, permit writers may develop individual permit limitations on a case-by-case basis. EPA's definition continues to define process wastewater in terms of manufacturing or processing. EPA has promulgated a subcategory-specific definition of process wastewater in order to clarify the applicability of subparts B and E and to assist permit writers and pretreatment authorities in developing limitations and standards. The effluent limitations guidelines and standards promulgated today do not apply to discharges that are not associated with manufacturing or processing. Any mill wishing to discharge such wastewaters would need to obtain authorization in an NPDES permit or individual control mechanism administered by a POTW.

EPA's use of the term "during manufacturing or processing" should not be taken to exclude wastewaters generated during routine maintenance, including maintenance occurring during a scheduled temporary mill shut-down. Maintenance wastewaters were not explicitly excluded from the definition of process wastewater at proposal, nor are they excluded from the definition promulgated today. Wastewaters generated during routine maintenance are a result of pulp manufacturing processes and as such are included in the definition of process wastewater.

(2) Definition of New Source. In today's rule, EPA is promulgating a definition of "new source" applicable to Part 430, subparts B and E. See 40 CFR 430.01(j). This definition restates the definition set forth in 40 CFR 122.29(b)(1), but with the additional reference to certain process changes that, in and of themselves, would not cause a mill to become a new source. See 40 CFR 430.01(j)(2). EPA intends that permit writers will consult the specific "new source" criteria in Part 430, rather than the more general criteria set forth in 40 CFR 122.29(b)(1) and 403 when determining whether pulp and paper mills subject to subparts B or E are new sources. The other provisions of 40 CFR 122.29 continue to apply to these subparts, as do 40 CFR 122.2 and 40 CFR 403.3(k). The definition of "new source" in Part 430 does not affect the definition of "new source" for purposes of the NESHAP portion of these integrated rules.

EPA is aware that application of the definitions in Part 122 to pulp and paper mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories has sometimes caused controversy, leading to disagreement between the permitting authority and the facility whether a particular change at the mill triggers NSPS or PSNS. EPA is promulgating a definition of "new source" specifically for subparts B and E in order to set forth the specific factors relevant to a new source determination for covered mills and thus, EPA hopes, to end the disputes regarding a mill's

ovided by the industry in comments d the NCASI survey to develop unit sts for major equipment items, facility odifications, monitoring systems and MP Plan preparation, rather than using e total project costs reported by two ills as was done at proposal. Finally, PA incorporated the estimates of net perating and maintenance costs of MPs into the BAT/PSES cost model. he cost model tracked the impacts of creased pulping liquor recovery on e evaporators and chemical recovery ystem and determined the need for quipment upgrades resulting from the ombined effect of BAT/PSES process hanges and BMPs. The savings from educed load on the wastewater reatment system and increased ecovery of fiber, chemicals and energy ere subtracted from the BMP operating osts (i.e., increased evaporation energy, ank integrity testing, operator training, nd O&M costs for new equipment).

EPA disagrees with comments sserting that EPA lacks authority to stablish BMPs for pollutants that are ot identified as toxic under CWA section 307(a) or hazardous under CWA section 311. First, the non-toxic and on-hazardous pollutants controlled by hese BMPs are found in the same wastestreams bearing pollutants specifically identified as toxic pollutants or hazardous substances under sections 307(a) and 311 and implementing regulations. Although reductions of these pollutants are significant in environmental effect, their control is incidental to the control of all the pollutants subject to section 304(e). Second, EPA has independent authority under section 402(a)(1) to establish NPDES permit conditions, including BMPs, for any pollutant when such conditions are necessary to carry out the provisions of the statute. See 40 CFR 122.44(k). This authority operates independently of section 304(e). Indeed, when Congress enacted section 304(e) specifically for toxic pollutants and hazardous substances, it acknowledged that section 402(a)(1) already provided authority for imposing BMPs in NPDES permits. See Statement of Sen. Muskie (Dec. 15, 1977), reprinted in Legislative History of the Clean Water Act of 1977, at 453. EPA's authority to establish permit conditions under section 402(a)(1) is very broad. See *NRDC* v. *Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977). EPA has determined that mills without an adequate BMP program, such as that codified today, may experience undetected and uncontrolled leaks and spills that could disrupt the efficiency of their treatment systems, thus resulting in exceedances of the BAT limitations and NSPS promulgated today for subparts B and E. Moreover, the BMPs control pollutants that are not explicitly regulated under BAT and NSPS. Therefore, EPA determined that BMPs applicable to all pollutants in a mill's spent pulping liquor, turpentine, and soap were necessary in order to carry out the purposes of the Clean Water Act and hence are authorized under section 402(a)(1) and 40 CFR 122.44(k). Similarly, as discussed below, BMPs are authorized as pretreatment standards for pollutants in the spent pulping liquor, turpentine, and soap when they pass through or interfere with POTW operations.

Some commenters also objected to EPA's decision to establish the BMP program by regulation rather than deferring to the case-by-case determinations of permit writers. EPA agrees that a requirement to establish and implement BMPs of the type required by this rule could be imposed on a case-by-case basis under CWA section 402(a)(1) and 40 CFR 122.44(k). However, EPA rejected this approach for a number of reasons. First, section 304(e) expressly authorizes EPA to promulgate BMPs by regulation on a categorical basis. The spent pulping liquors, soap, and turpentine covered by these BMPs contain numerous toxic pollutants and hazardous substances subject to section 304(e) and hence may be controlled by regulation. Moreover, EPA determined that implementing the BMP program by regulation is necessary to ensure that each pulp and paper mill with pulp production in subparts B or E implements the type of BMPs that EPA has determined are fundamental to an effective BMP program for this industry. While the BMP regulation is intended to provide considerable flexibility to mills in designing their BMP programs, EPA has also determined that the various BMPs specified in the regulation are necessary to assure uniform and fair application of the requirements. Finally, EPA believes that the regulation represents an appropriate and efficient use of its technical expertise and resources that, when exercised at the national level, will relieve permit writers of the burden of implementing this aspect of the Clean Water Act on a case-by-case basis.

EPA also disagrees with comments asserting that EPA lacks authority to impose BMPs on indirect discharges. These BMPs are pretreatment standards under section 307(b) and (c). Pretreatment standards for new and existing sources under section 307 are designed to prevent the discharge of pollutants that pass through POTWs or that interfere with or are otherwise incompatible with treatment processes or sludge disposal methods at POTWs. To determine whether pollutants associated with spent kraft and sulfite pulping liquors, soap, and turpentine that are indirectly discharged by mills with pulp production in subparts B or E interfere with POTW operations or pass through untreated, EPA reviewed data collected from 1988 through 1992 at a POTW that receives effluent from a bleached papergrade kraft mill. Prior to 1990–91, the mill had virtually no facilities for control and collection of spent pulping liquor leaks and spills. POTW discharge monitoring records show the fully treated effluent exhibited consistent chronic toxicity to Daphnia from April 1988 until June 1991. The data further show that the toxic effects of the POTW's effluent have been reduced since implementation by the mill of effective spent pulping liquor management and spill prevention and control. These effluent toxicity effects can be related to the wood extractive components that are measurable by COD and are found in leaks and spills of spent kraft and sulfite pulping liquors that interfere with the performance of biological treatment systems and allow toxic pollutants to pass through inadequately treated. Indeed, evidence of such interference and pass-through was found in data from this mill and the POTW, which showed higher mass effluent loadings for COD, TSS and BOD_5 before the mill implemented a BMP program. After the BMP program was implemented, mass effluent loadings of these pollutants were reduced. Data for COD, in particular, indicated that short-term interference of POTW operations previously observed at higher COD levels was being mitigated. EPA also bases its pass-through finding on an incident occurring in 1993 at a different mill where an intentional diversion of spent pulping liquor debilitated the mill's secondary treatment system and killed fish in the receiving waters. These data led EPA to conclude that inadequate management and control of leaks and spills of spent pulping liquor, soap, and turpentine interfered with POTW operations and caused pass-through of pollutants. Because direct discharging mills using these BMPs achieve very high removals and because POTWs cannot achieve similar removals in the absence of BMPs employed by the indirect discharger, EPA has determined that pollutants in spent pulping liquor, soap, and turpentine, in the absence of controls on leaks, spills, and intentional diversions, can cause disruption and interference and do indeed pass through

liquors contain toxic components and that these materials, if uncontrolled, pass through or interfere with the operation of POTWs and may interfere with industrial wastewater treatment systems at mills that discharge directly to surface waters. EPA has excluded green, white and other intermediate pulping liquors (e.g., fresh sulfite pulping liquors) from this BMP rule because the data in the record does not indicate that these materials pass through wastewater treatment systems. Turpentine and soap are included in the BMP rule because, if spilled or lost, these materials can interfere with wastewater treatment operations and lead to increased discharges of toxic, nonconventional, and conventional pollutants.

In December 1993, EPA proposed to require mills to provide secondary containment for all pulping liquor bulk storage tanks. EPA has since determined that spill prevention can be adequately achieved for spent pulping liquor bulk storage tanks by substituting annual tank integrity testing and other containment or diversion structures (e.g., curbs and berms) in place of secondary containment. The final rule provides flexibility for mills to choose either secondary containment or annual tank integrity testing, coupled with other containment or diversion structures, to comply with this requirement for spent pulping liquor bulk storage tanks. See 40 CFR 430.03(c)(7). EPA determined that secondary containment should be required at all times for turpentine bulk storage tanks because of the extreme toxic effects a turpentine spill would have on the biological treatment system, and because the size of turpentine bulk storage tanks is such that secondary containment is easily achieved. In fact, EPA has found that most mills already provide secondary containment for their turpentine bulk storage tanks. No secondary containment is required for soap bulk storage tanks.

As discussed in the July 1996 Notice, EPA also proposed adding a requirement to the BMP regulation that would require mills to implement a monitoring program for the purpose of detecting leaks and spills, tracking the effectiveness of the BMPs, and detecting trends in spent pulping liquor losses. EPA proposed requiring mills to monitor wastewater treatment system influent for a short-term measure of organic content that can be completed on a daily basis (e.g., Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC)). EPA has promulgated this requirement (see 40 CFR 430.03 (h) and (i)), but in response to comments, EPA is also allowing mills to use an alternative parameter related to spent pulping liquor losses that can be measured continuously and averaged over 24 hours (e.g., specific conductivity or color). See 40 CFR 430.03(h)(2)(i). In conjunction with this monitoring, mills are required by today's regulation to establish action levels (using the measure of daily pollutant loading) that, when exceeded, trigger investigative and corrective action, as appropriate, to reduce the wastewater treatment system influent mass loading. See 40 CFR 430.03(h).

The proposed rule would have required certification of the BMP plan by a registered professional engineer (P.E.) and approval by the mill manager. The intent of the proposed P.E. certification was to assure preparation of a comprehensive BMP Plan that is tailored to the site-specific circumstances at the mill. Industry commented that many mills have no registered professional engineers on site. For mills without a P.E. onsite, the proposed requirement would result in the plan being certified by someone not involved with the mill on a daily basis, and someone not responsible for its operation. EPA has determined that requiring certification by a P.E. is unnecessarily prescriptive and may have unintended results. The final regulation deletes the requirement for certification by a registered P.E. and now requires the BMP Plan to be reviewed by the senior technical manager at the mill and approved and signed by the mill manager. See 40 CFR 430.03(f).

The regulation was proposed to be self-implementing for both direct and indirect dischargers. EPA has revised the regulation to make it clear that BMPs imposed on direct dischargers are not self-implementing, but rather apply only when incorporated into NPDES permits. See 40 CFR 430.03(j). This is consistent with CWA sections 304(e) and 402. The final regulation remains self-implementing for indirect dischargers. *Id.*

The final regulation extends compliance schedules for plan preparation and plan implementation to grant more time for the preparation of the initial BMP Plan and installation of monitoring and alarm systems. Based on information supplied by industry regarding the time required in past efforts to develop spill prevention programs, EPA determined that 12 months was reasonable to complete the development of the BMP Plan and includes that deadline in the regulation. Similarly, EPA determined that it is reasonable to require mills to commence operation of any new monitoring systems no later than 24 months following publication of the final rule. This compliance date provides sufficient time between BMP Plan preparation and operation of new monitoring systems (i.e., 12 months) to allow implementation of BMPs in a rational and effective manner.

The final BMP regulation is less prescriptive than proposed with regard to inspection, repair and log-keeping requirements. While many of the elements included in the proposed rule remain, EPA determined that the specificity of the language in the proposed regulation could be redundant to existing practices in place at some mills and be unnecessarily burdensome. EPA believes the language in the final rule will achieve the same results as it intended in the proposed rule while allowing mills to use existing maintenance and repair tracking systems to fulfill the requirement. See 40 CFR 430.03(c).

As discussed in the July 1996 Notice, EPA used the information obtained since proposal to revise its cost estimates for BMPs. See 61 FR at 36840. At proposal, EPA's estimated costs were based on the reported total project costs for two older bleached kraft mills to install spill prevention and control systems. After adjusting the costs to reflect the size of a "typical" mill, EPA then assumed that these costs reflected the average cost incurred by bleached papergrade kraft and soda and papergrade sulfite mills to install BMPs. EPA then imputed to some mills compliance costs less than that average cost depending on the extent EPA judged they had implemented BMPs (see Technical Support Document for Proposed Best Management Practices Programs: Pulping Liquor Management, Spill Prevention and Control, November 1993. Docket Section 17.4, DCN 08307).

EPA improved its estimates of industry-wide costs for compliance with the BMP requirements in the final rule, compared to the cost methodology used for the proposed regulation. These changes were discussed in the July 1996 Notice and in the accompanying Draft Technical Support Document for Best Management Practices Programs: Spent Pulping Liquor Management, Spill Prevention and Control, May 1996 (DCN 13894). EPA's supplemental mill visits and the NCASI survey responses have resulted in a more accurate status of the existing BMP infrastructure and programs at mills. This information was used to create model BMP mill requirements for each level of mill complexity and to classify mills by complexity level. EPA then used data

information collection request. See 40 CFR 430.03(a)(2).

NPDES permits must require existing direct discharging mills to meet the same deadlines specified for existing indirect dischargers which is calculated from the date of publication. See 40 CFR 430.03(j)(1). If the applicable deadline has passed at the time the NPDES permit containing the BMP requirement is issued, the NPDES permit must require immediate compliance with the BMP requirement. *Id.* EPA believes this is appropriate because the record shows that mills can implement the substantive requirements of the BMPs—which are well-known within the industry today—without significant uncertainty or difficulty. In addition, timely implementation will avert the adverse environmental effects of uncontrolled leaks, spills, and intentional diversions. Finally, the affected mills have been on notice for several years that these requirements would likely be imposed and therefore should not be prejudiced by prompt compliance obligations. EPA expects that the compliance date for full implementation of the BMP requirements will not extend beyond five years from the effective date of the final rule because EPA expects NPDES permits for those mills to be reissued on a timely basis. With the exception of the requirement to establish action levels, which must occur not later than 12 months after commencing discharge, new direct and indirect discharging mills must prepare the BMP Plan and implement all BMPs upon commencing discharge. See 40 CFR 430.03(j)(2).

EPA believes it is reasonable to require existing indirect dischargers to establish revised action levels by January 15, 2002 and to require all new sources to establish action levels no later than 12 months after commencing discharge. These requirements apply only after full implementation of the required BMPs and reflect the amount of time EPA believes is necessary for mills to collect monitoring data regarding the effectiveness of these newly implemented practices and to perform the statistical analysis to develop the required action levels. Because the required action levels are intended to reflect normal mill operating conditions using the BMPs, they cannot be established prior to the implementation of the BMPs or, in the case of new sources, prior to commencing discharge. For a discussion of EPA's basis for the other deadlines in this rule, see the BMP Technical Support Document, DCN 14489.

The proposed regulations had included provisions for leak and spill prevention, containment, and control through the use of BMPs. See 58 FR at 66078. The comments received by EPA on the proposed rule and subsequent **Federal Register** notices generally supported the use of BMPs, but a number of comments challenged EPA's compliance cost estimates and claimed that certain requirements were too prescriptive. In particular, industry asserted:

- The requirement to develop BMPs should be limited to spent pulping liquor (e.g., kraft black liquor, sulfite red liquors) and should exclude kraft green and white liquors and fresh sulfite pulping liquors;
- The proposed regulation was overly prescriptive in general and, in particular, the requirement for secondary containment was unnecessary to meet the objectives of the proposed regulation;
- EPA underestimated the costs for implementing BMPs;
- EPA lacks the authority to establish BMPs to control pollutants that are not identified as toxic under CWA section 307(a) or hazardous under CWA section 311; and
- EPA lacks the authority to impose BMPs on indirect dischargers.

In response to comments, EPA undertook several initiatives to understand industry's concerns about the proposed BMP requirements; to better understand the status of the industry with respect to pulping liquor management and spill prevention and control; and to better assess the BMP compliance costs. To supplement its understanding of industry's spent pulping liquor management and spill prevention and control practices, EPA visited more than 25 chemical pulp mills in the United States and 15 mills in Canada and Europe following its 1993 proposal. These mills included bleached and unbleached kraft mills and papergrade sulfite mills (see Docket Sections 21.5.1 and 21.5.3). EPA also reviewed the results of the NCASI BMP questionnaire distributed to the industry. Questionnaire responses were received from approximately 70 bleached and unbleached kraft, soda, and sulfite mills. Through this NCASI questionnaire EPA received a substantial amount of additional information about mill practices and costs for equipment, monitoring systems, and facility modifications (see Docket Section 21.1.3). In addition, EPA held detailed discussions with stakeholders regarding options for BMPs and associated costs. Much of this information was included in the Docket and made available to the public in conjunction with the Notice of Data Availability published in the **Federal Register** on July 5, 1995 (60 FR 34938). Additional information related to development of the BMP requirements, including changes in the wording and organization of the proposed rule, was discussed in the July 1996 Notice. See 61 FR at 36835.

Based on the information and data received since proposal, EPA revised the scope of the BMP requirements to focus on control of spent pulping liquor, turpentine, and soap. The BMP requirements were restructured to allow greater flexibility in how BMPs are implemented to address site-specific circumstances in achieving meaningful prevention and control of leaks and spills. EPA also reorganized the regulatory text from that presented in the record for the July 1996 Notice to provide greater ease of use by mill operators and permit writers, and to clarify the intent of particular BMP requirements. The most significant changes since proposal are discussed below.

In December 1993, EPA proposed BMPs for seven subcategories of the pulp, paper, and paperboard industry (58 FR at 66078), all of which chemically pulp wood and non-wood fibers. EPA still believes BMPs are appropriate for each of these chemical pulping subcategories; however, to be consistent with the effluent limitations guidelines and standards promulgated in this final rule, the BMPs promulgated today are applicable only to the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. EPA expects to promulgate BMPs for the remaining five chemical pulping subcategories [(Subparts A (Dissolving Kraft), C (Unbleached Kraft), D (Dissolving Sulfite), F (Semi-chemical), and H (Non-wood Chemical Pulp)] as it promulgates new effluent limitations guidelines and standards for these subcategories. Until new regulations for Subparts A, C, D, F, and H are promulgated, permit writers may wish to use the BMP regulations in this rule as a guide to issuing permits containing BMPs based on best professional judgment for mills with production covered by these other subparts. See CWA Section 402(a)(1); 40 CFR 122.44(k). POTWs may need to impose BMPs as local limits to facilities in these subcategories. See 40 CFR 403.5.

The BMP provisions in the proposed rule were structured to apply to all pulping liquors. In response to comments, EPA has revised the scope of the BMPs and for the final rule is limiting the BMP applicability to spent pulping liquors, turpentine, and soap. EPA has determined that spent pulping

systems and to reduce the cost of process operation through increased chemical recovery. The BMPs summarized below are discussed in detail in the Technical Support Document for Best Management Practices for Spent Pulping Liquor Management, Spill Prevention and Control, DCN 14489 (hereafter "BMP Technical Support Document").

Under this regulation, mills must implement the BMPs codified at section 430.03(c). BMP requirements for new and existing direct dischargers apply when incorporated as special conditions in NPDES permits, consistent with CWA sections 304(e) and 402(a). BMP requirements for new and existing indirect dischargers are pretreatment standards; therefore, they are self-implementing. The BMPs are:

(1) Return of spilled or diverted spent pulping liquors, soap, and turpentine to the pulping and recovery processes to the maximum extent practicable as determined by the mill; recovery of such materials outside the process; or discharge of spilled or diverted material at a rate that does not disrupt the receiving wastewater treatment system;

(2) Inspection and repair programs to identify and repair leaking equipment items;

(3) Operation of continuous, automatic spill detection systems that the mill determines are necessary to detect and control leaks, spills, and intentional diversions of spent pulping liquor, soap, and turpentine. Examples of such systems are high level monitors and alarms on storage tanks; process area conductivity (or pH) monitors and alarms; and process area sewer, process wastewater, and wastewater treatment plant conductivity (or pH) monitors and alarms;

(4) Employee training for those personnel responsible for operating, maintaining, or supervising the operation and maintenance of equipment items in spent pulping liquor, soap, and turpentine service;

(5) Preparation of brief reports that evaluate spills of spent pulping liquor, soap, or turpentine that are not contained at the immediate process area and intentional diversions of spent pulping liquor, soap, or turpentine that are not contained at the immediate process area, (this requirement takes effect on the date an OMB control number is issued);

(6) A program to review any planned modifications to the pulping and chemical recovery facilities and any construction activities in the pulping and chemical recovery areas before these activities commence to prevent leaks and spills during construction;

(7) Secondary containment for spent pulping liquor bulk storage tanks. As an alternative, mills may substitute an annual tank integrity testing program, if coupled with other containment or diversion structures, in place of secondary containment;

(8) Secondary containment for turpentine bulk storage tanks;

(9) Curbing, diking, or other means of isolating soap and turpentine processing and loading areas from the wastewater treatment facilities; and

(10) Wastewater monitoring to detect leaks and spills, to track the effectiveness of the BMPs, and to detect trends in spent pulping liquor losses.

In addition, § 430.03(d) requires each mill to prepare a BMP Plan, based on a detailed engineering review of the mill's pulping and recovery operations, that specifies: (1) The procedures and the practices to be employed by the mill to meet the BMP requirements listed above, as tailored to recognize site-specific conditions; (2) the construction the mill determines is necessary to meet the BMP requirements, including a schedule for such construction; and (3) the monitoring program that will be used to meet the BMP requirements. This requirement takes effect April 15, 1999 see 40 CFR 430.03(j)(1)(i), or the date an OMB control number for this requirement is issued, whichever is later. See 40 CFR 430.03(a)(2).

Each mill must also certify to the appropriate permitting or pretreatment authority that it has prepared the Plan in accordance with the BMP regulation. See 40 CFR 430.03(f). The mill is not required to obtain approval of the BMP Plan by the permitting or pretreatment authority. *Id.* The permitting or pretreatment authority at its discretion, however, may conduct a review of the BMP Plan, BMP Plan amendments, and BMP Plan implementation.

Finally, section 430.03(h) requires mills to establish action levels (a measure of daily pollutant loading) that, when exceeded, trigger investigative and corrective action (depending on the action level exceeded) to reduce the wastewater treatment system influent mass loading. This requirement takes effect April 15, 1999 see 40 CFR 430.03.(j)(1)(iii), or the date an OMB control number for this requirement is issued, whichever is later. The purpose of the action levels is to provide a framework for monitoring the performance and effectiveness of BMPs on a continuing basis and to establish an early warning system so that mills can detect trends in spent pulping liquor, soap, and turpentine losses that might not be obvious from other sources. Under the regulation, a mill has considerable flexibility to choose its monitoring parameter. For more discussion of action levels, see the BMP Technical Support Document, DCN 14489. EPA had considered requiring all mills to employ specific statistical action levels. See 61 FR at 36847. EPA rejected this approach because it was concerned that such action levels might fail to trigger appropriate investigative and corrective actions for some mills, while being too restrictive for other mills. Instead, EPA determined that authorizing mills to choose their own monitoring parameters and to set their own action levels better accounts for the variability in organic loadings at different mills and differences in treatment plant effectiveness and evaporator capacity, among other mill-specific factors. This flexibility thus ensures that the action levels reflect the actual performance of mill-specific BMPs and procedures. In this way, EPA believes the action levels will better achieve the spill and leak control objectives of the BMP requirements. Exceedances of the action levels will not constitute violations of an NPDES permit or pretreatment standard. See 40 CFR 430.03(i)(3). However, a mill that fails to take corrective action as soon as practicable in response to the exceedances will be violating its NPDES permit or pretreatment standard. *Id.*

As set forth in § 430.03(j), the following deadlines apply: Existing indirect dischargers are required to prepare BMP Plans and implement all BMPs that do not require the construction of containment or diversion structures or the installation of monitoring and alarm systems no later than April 15, 1999. Operation of any new or upgraded continuous, automatic monitoring systems that the mill determines to be necessary (other than those associated with construction of new containment or diversion structures) must commence no later than April 17, 2000. The mill must complete construction and commence operation of any spent pulping liquor, collection, containment, diversion, or other facilities, including any associated continuous monitoring systems, necessary to fully implement BMPs by April 16, 2001. Existing indirect dischargers must establish the initial action levels by April 15, 1999, and the revised action levels as soon as possible after fully implementing the BMPs, but not later than January 15, 2002. The requirements to develop the BMP Plan and to perform other record-keeping and reporting requirements do not apply until OMB has approved the associated

achieving effluent reductions. The selected NSPS technologies are presently being employed at mills in each segment of this subcategory. Moreover, the cost of the NSPS technology is an insignificant fraction of the capital cost of a new mill (less than one percent). Finally, EPA has determined that the costs of including the selected NSPS technologies at a new source are substantially less on a per-ton basis than the costs of retrofitting existing mills. See Chapter 6 of the Economic Analysis document (DCN 14649). Therefore, EPA has concluded that such costs do not present a barrier to entry. The Agency also considered energy requirements and other non-water quality environmental impacts for the selected NSPS options and concluded that these impacts were no greater than for the selected BAT technology options and are acceptable. See the Supplemental Technical Development Document, DCN 14487. EPA therefore concluded that the NSPS technology bases selected for each segment of the papergrade sulfite segment constitutes the best available demonstrated control technology for that segment.

d. Pretreatment Standards. EPA is promulgating pretreatment standards for new and existing sources for three segments of the Papergrade Sulfite subcategory based on the BAT and NSPS technologies selected for each segment. In determining PSES, EPA considered the age, size, processes, other engineering factors, and non-water quality environmental impacts pertinent to Subpart E mills. None of these factors provided a basis for selecting different PSES technologies. For each segment, EPA selected the best technology available to produce the products in each segment. Each of the selected PSES technologies is economically achievable and has no unacceptable adverse non-water quality impacts. With respect to PSNS for these segments, EPA concluded that the selected technologies represent the best available demonstrated control technologies that are capable of producing each segment's products. EPA also concluded that there was no barrier to entry for the reasons set forth in section VI.B.6.c. above for NSPS for this subcategory.

In order to determine which pollutants to regulate under PSES and PSNS, EPA used the same pass-through analysis it employed for the Bleached Papergrade Kraft and Soda subcategory described in section VI.B.5.c(2) above. EPA concluded that dioxin, furan, and the 12 chlorinated phenolic pollutants pass through or interfere with POTW operations for the ammonium and specialty grade segments for the reasons set forth in section VI.B.5.c(2) for Subpart B. This reasoning applies because the BAT/PSES model technologies for Subparts B and E are both based on ECF process technologies; the same is also true for the NSPS/PSNS technologies (although in neither subpart does the model pretreatment technology include secondary biological wastewater treatment). Based on its pass-through determination, EPA is promulgating national pretreatment standards for new and existing sources for those pollutants for those segments. These standards are expressed as "<ML." See Section VI.B.5.a(4)(c). With respect to chloroform, COD, and AOX in the ammonium and specialty grade segments of the Papergrade Sulfite subcategory, EPA has insufficient data at this time upon which to make pass-through determinations or to set pretreatment standards. Therefore, EPA will decide whether and how to regulate these pollutants for those segments when data become available.

For the calcium-, magnesium-, or sodium-based segment, the best available technology basis is TCF bleaching. Because no chlorine or chlorine-containing bleaching chemicals are used, no chlorinated pollutants are generated during bleaching. Therefore, EPA is not establishing pretreatment standards for dioxin, furan, chloroform, and the 12 chlorinated phenolic pollutants for this segment. With respect to AOX in the calcium-, magnesium-, or sodium-based segment, EPA finds that TCF bleaching will reduce AOX discharge loads from the 1 to 3 kg/metric ton typically found at baseline to less than minimum levels, even at indirect discharging facilities with no on-site biological treatment. This reduction is greater than 99 percent, which far exceeds the AOX reduction that can be demonstrated by POTW treatment. Therefore, EPA concludes that AOX passes through for this segment and is promulgating PSES and PSNS for AOX, with the limitation expressed as less than the minimum level, or "<ML." See 40 CFR 430.56(a)(1) and 430.57(a)(1).

With respect to COD in the calcium-, magnesium-, or sodium-based segment, EPA has insufficient data at this time upon which to make a pass-through determination or to set pretreatment standards. Therefore, EPA will decide whether and how to regulate COD for this segment when data become available.

The pretreatment standards for all segments of the Papergrade Sulfite subcategory also include best management practices. See 40 CFR 430.03. These requirements are described below in Section VI.B.7.

EPA is requiring mills to demonstrate compliance with PSES and PSNS on dioxin, furan, and the 12 chlorinated phenolic pollutants for the ammonium-based sulfite and specialty grade sulfite segments inside the discharger's facility at the point where the wastewater containing those pollutants leaves the bleach plant. EPA bases this decision on the reasons discussed in Section VI.B.5.a(6) for the Bleached Papergrade Kraft and Soda subcategory.

7. Best Management Practices

The regulations promulgated today include provisions requiring mills with pulp production in the Bleached Papergrade Kraft and Soda subcategory (Subpart B) and the Papergrade Sulfite subcategory (Subpart E) to implement BMPs to prevent or otherwise contain leaks and spills of spent pulping liquor, soap, and turpentine and to control intentional diversions of those materials. These BMPs apply to direct and indirect discharging mills within these subcategories and are intended to reduce mill wastewater loadings of non-chlorinated toxic compounds and hazardous substances. For direct dischargers, EPA is authorized to establish BMPs for those pollutants under CWA section 304(e). The same BMPs will also remove, as an incidental matter, significant loadings of color and certain oxygen-demanding substances in pulping liquors that are not readily degraded by biological treatment. EPA also expects incidental reductions in conventional water pollutants and certain air pollutants as a result of the BMPs. To the extent these pollutants are present in the wastestreams subject to section 304(e), EPA has authority under that section to regulate them. In addition, EPA has independent authority under CWA sections 402(a) and 501(a) and 40 CFR 122.44(k) to require direct dischargers to implement BMPs for pollutants not subject to section 304(e). To impose these BMPs on indirect dischargers, EPA relies on section 307 (b) and (c). Finally, EPA is authorized to impose the BMP monitoring requirements under section 308(a).

EPA has determined that these BMPs are necessary because the materials controlled by these practices, if spilled or otherwise lost, can interfere with wastewater treatment operations and lead to increased discharges of toxic, nonconventional, and conventional pollutants. The practices included in this rule are known to reduce the amount of spent pulping liquor discharged to wastewater treatment

reduced by 1,770 kilograms to 240 kilograms per year. As a result of the TCF limitations and PSES on mills in the calcium-, magnesium-, or sodium-based sulfite segment and as an incidental result of implementing the ECF model technology by direct and indirect discharging mills in the other two segments, discharges of AOX will be reduced by 4,010 metric tons to 370 metric tons per year. For a discussion of the environmental benefits resulting from these reductions, see Section VIII.G.2, and Chapter 8 of the Economic Analysis, DCN 14649.

(6) Development of Limitations. All of the limitations and standards promulgated today for Subpart E are expressed as "<ML." "ML" is an abbreviation for the Minimum Level identified in § 430.01(i) for the analytical methods that EPA uses to measure pollutant levels. For a more detailed discussion of ML limitations, see section VI.B.5.a.(4)(c).

In addition to the new effluent limitations guidelines and standards for each papergrade sulfite segment promulgated today and discussed immediately below, mills in the Papergrade Sulfite subcategory continue to be subject to existing limitations for pentachlorophenol and trichlorophenol. See 40 CFR 430.54(b), 430.55(c), 430.56(b), 430.57(b). These mills continue to have the opportunity to be exempt from these limitations and standards if they certify to the permitting or pretreatment authority that they are not using these chemicals as biocides. *Id.* For a discussion of these pollutants, see Section VI.B.3.f.

(i) Calcium-, Magnesium-, or Sodium-Based Sulfite Mills. Limitations for this segment were developed based on data from sampling at a European papergrade sulfite facility. (EPA did not set limitations based on performance data from the TCF U.S. mill in this segment because that mill produces sulfite pulp using hardwood furnish, which is easier to bleach than softwood sulfite pulp.) AOX was not measured at the end-of-pipe at the European facility so the AOX limitation is based on the transfer of data collected at the bleach plant effluent within that facility. This transfer is appropriate because the technology basis for the limitations, TCF bleaching, reduces AOX to concentrations below the method minimum level prior to any potential biological wastewater treatment. Therefore, since AOX is not detected above the minimum analytical level in bleach plant effluent, it should not be detected in final treated effluent.

(ii) Ammonium-Based Sulfite Mills. EPA is promulgating limitations for dioxin, furan, and 12 chlorinated phenolic pollutants for this segment. These limitations are expressed as "<ML." EPA based these limitations on industry-developed laboratory data for ECF bleaching trials supplied by an ammonium-based papergrade sulfite mill and the results from full-scale sampling at a magnesium-based sulfite mill using ECF bleaching technology. EPA was able to apply the data from the magnesium-based sulfite mill to the ammonium-based segment because ECF bleaching at magnesium-based mills will result in similar wastewater characteristics as ECF bleaching at ammonium-based mills because ECF bleaching chemistry is comparable between the two chemical bases. EPA is reserving AOX, COD, and chloroform limitations for this segment.

(iii) Specialty Grade Sulfite Pulps. EPA is promulgating limitations for dioxin, furan, and 12 chlorinated phenolic pollutants. These limitations are expressed as "<ML." The chlorinated phenolic limitations for this segment were developed from laboratory data for an ECF bleaching trial supplied by a specialty-grade sulfite mill. Data for dioxin and furan were not collected as part of this ECF bleaching trial because the mill researchers fully expected, based on the body of previous ECF bleaching research performed on sulfite pulp, that dioxin and furan would not be detected and therefore did not need analysis. For the purpose of establishing limitations for dioxin and furan in this segment, EPA is transferring laboratory data for ECF bleaching trials supplied by an ammonium-based papergrade sulfite mill. The transfer of limitations for dioxin and furan to this segment is supported by published reports that ECF bleaching of sulfite pulp will result in values of dioxin and furan in bleach plant effluent at levels below the minimum levels identified for the appropriate analytical methods. The transfer is further supported by the low levels of AOX measured (0.253 kg/ODMT) in the bleaching effluent from the specialty grade, laboratory-scale ECF bleaching trial. This AOX level suggests minimal chlorinated organics are formed during ECF bleaching of specialty grade pulp. For these reasons, EPA does not expect dioxin and furan to be present at or above the minimum level for these pollutants and is setting the limitations accordingly. EPA is reserving AOX, COD, and chloroform limitations for this segment until it has sufficient data upon which to base the limitations, because the performance of the BAT technology basis on these parameters cannot be accurately predicted from laboratory scale data.

(7) Point of Compliance Monitoring. EPA is requiring mills in the ammonium-based sulfite and specialty grade sulfite segments to demonstrate compliance with the BAT limitations on dioxin, furan, and the 12 chlorinated phenolic pollutants inside the discharger's facility at the point where the wastewater containing those pollutants leaves the bleach plant. See 40 CFR 430.54(c). EPA bases this decision on the reasons discussed in Section VI.B.5.a(6) for the Bleached Papergrade Kraft and Soda subcategory. Unless otherwise determined by the permit writer, mills in the calcium-, magnesium-, and sodium-based sulfite segment may demonstrate compliance with the BAT limitations for AOX at the end of the pipe.

c. NSPS. EPA is promulgating new source performance standards for each segment of the Papergrade Sulfite subcategory. See 40 CFR 430.55. The technology bases of NSPS for toxic and nonconventional pollutants for the three segments of the Papergrade Sulfite subcategory are the same as the model BAT technologies for those segments. For calcium-, magnesium-, or sodium-based sulfite mills, TCF bleaching technology is the technology basis for NSPS. ECF bleaching is the basis of NSPS for mills in the ammonium and specialty products segments because TCF bleaching has not been demonstrated for the full range of products made by mills in these segments. The toxic and nonconventional pollutants regulated, the limitations, and the points of compliance monitoring for NSPS for each segment are also the same as for BAT for those segments.

EPA proposed NSPS for conventional pollutants based on best demonstrated end-of-pipe secondary wastewater treatment. The treatment system with the lowest long-term average BOD_5 discharge was used to characterize the best demonstrated performance. EPA concluded that data in the record is not representative of the performance that can be achieved in the Papergrade Sulfite subcategory as a whole. For this reason, the new source performance standards for conventional pollutants promulgated today for each segment of the Papergrade Sulfite subcategory are the same as those promulgated in the 1982 NSPS regulation. See 47 FR 52006, 52036 (Nov. 18, 1982) (for former Subpart O); 48 FR 13176, 13177 (Mar. 30, 1983) (for former Subpart J).

In selecting its NSPS technology, EPA considered all of the factors specified in CWA section 306, including the cost of

For the foregoing reasons, EPA has selected the model ECF bleaching processes described above as the basis for BAT limitations and PSES for the ammonium-based segment.

(iii) Specialty Grade Sulfite Mills

EPA received comments and data indicating that key pulp and product characteristics for specialty grade sulfite pulps have not been achieved using TCF bleaching technologies. Firms producing specialty grade pulps indicate that required product characteristics are achievable using certain ECF bleaching technologies. See the record at sections 19.1 and 21.11.6; DCN 25502; DCN 20071a8; DCN 14497, Vol. I; and DCN 14494. As indicated in the July 1996 Notice, EPA has continued to monitor research efforts of specialty grade pulp producers in the field of pollution-preventing process changes. These research efforts have progressed to the point where data are available at this time to promulgate limitations for this segment for dioxin, furan, and chlorinated phenolic pollutants. For specialty grade sulfite mills, the technology basis for limitations is use of dioxin- and furan-precursor-free defoamers, complete (100 percent) substitution of chlorine dioxide for elemental chlorine, oxygen- and peroxide-enhanced extraction, and elimination of hypochlorite. ECF bleaching also includes high shear mixing to ensure adequate mixing of pulp and bleaching chemicals. This technology basis reflects the results of laboratory trials showing the ability to produce the full range of products manufactured by specialty grade mills, with acceptable final product characteristics. (This discussion also applies to PSES for this segment.)

EPA is also promulgating voluntary alternative BAT limitations based on TCF bleaching processes in order to encourage mills to use this technology whenever it is consistent with their product mix. See 40 CFR 430.54(a)(3) and 430.56(a)(3). Alternative TCF limitations are also available for new sources in this segment.

In addition to finding that the ECF bleaching process described above is technically available for the specialty grade segment, EPA has also determined that it is economically achievable. In order to evaluate the economic achievability of ECF bleaching for this segment, EPA considered the costs that the one mill currently in this segment would incur to convert to ECF processes. As part of that analysis, EPA also included the costs of complying with today's BMP regulations. Because of the small size of this segment, EPA is not disclosing here the estimated capital costs, operation and maintenance costs, or post-tax annualized costs for this segment in order to protect confidential business information. However, EPA has determined that the sole existing mill in this segment is not projected to close, nor is its firm projected to fail, as a result of today's BAT limitations and PSES for this segment. This result obtains both when the impacts of today's BAT/PSES are considered together with the impacts of compliance with the MACT I costs, and when they are considered alone. Therefore, EPA has concluded that ECF bleaching is economically achievable for the specialty grade segment. See DCN 14376 and DCN 14388 (both CBI).

For the foregoing reasons, EPA has selected the model ECF bleaching process described above as the basis for BAT limitations and PSES for the specialty grade segment.

(3) Pollutant Parameters Regulated for Each Segment. (i) Calcium-, Magnesium-, or Sodium-Based Sulfite Mills. Because the Agency is promulgating BAT effluent limitations for this segment based on TCF bleaching technology, the maximum reduction in the discharge of chlorinated pollutants from bleaching operations will be achieved. This is because no chlorine or chlorine-containing bleaching chemicals are used and, hence, no chlorinated pollutants are generated during bleaching. For this reason, EPA is not setting effluent limitations for dioxin, furan, chloroform, or the 12 specified chlorinated phenolic pollutants for TCF bleaching. However, EPA is setting limitations on AOX (expressed as a level below the Minimum Level identified in today's analytical method for AOX) for mills in the calcium-, magnesium-, or sodium-based sulfite pulp segment of the Papergrade Sulfite subcategory in order to reflect the performance of TCF bleaching processes. See 40 CFR 430.54(a)(1). EPA is reserving promulgation of COD limitations for this segment until such time that sufficient performance data are available because the performance of the BAT technology basis on this parameter cannot be accurately predicted from laboratory-scale data.

(ii) Ammonium-Based Sulfite Mills. EPA is promulgating effluent limitations for dioxin, furan, and 12 chlorinated phenolic pollutants for the ammonium-based segment. See 40 CFR 430.54(a)(2). EPA is reserving promulgation of chloroform limitations, AOX limitations, and COD limitations for this segment until such time that sufficient performance data are available because the performance of the BAT technology basis on these parameters cannot be accurately predicted from laboratory-scale data. One mill is currently installing, on a full scale, the promulgated BAT technology basis. EPA expects to have data to develop chloroform, AOX, and COD limitations for this segment once this installation is complete, the mill is operating the new equipment in a routine manner, and appropriate samples are collected and analyzed.

(iii) Specialty Grade Sulfite Mills. EPA is promulgating effluent limitations for dioxin, furan, and 12 chlorinated phenolic pollutants for the specialty grade segment, based on laboratory scale data. See 40 CFR 430.54(a)(3). EPA is reserving promulgation of chloroform, AOX, and COD limitations for this segment until such time that sufficient full scale performance data are available because the performance of the BAT technology basis on these parameters cannot be accurately predicted from laboratory scale data.

(4) Costs. As discussed in the July 1996 Notice, EPA revised its cost estimates for mills in the Papergrade Sulfite subcategory by using the revised bleaching sequences outlined in paragraph (2) above. EPA also updated equipment cost curves and unit operating costs. See 61 FR at 36845. The detailed basis of these revised cost estimates are provided in the record.

The following cost estimates reflect the total costs that mills in the Papergrade Sulfite subcategory are likely to incur as a result of today's BAT limitations, PSES, and BMP regulations, and are the bases for EPA's economic impact analyses discussed in paragraph (2) above. For this subcategory, EPA's estimated capital costs are $73.8 million, operation and maintenance costs are $7 million, and post-tax annualized costs are $9.8 million. (The general and administrative costs discussed in Section VIII.B.1.c are already included here.) See Section VIII for additional discussion of costs and economic impacts.

(5) Effluent Reductions. EPA has updated the calculation of effluent reductions for each papergrade sulfite mill, adjusting the baseline to mid-1995. EPA used methodology similar to that used for the Bleached Papergrade Kraft and Soda subcategory. As a result of the BAT limitations and PSES promulgated today, EPA estimates that for the Papergrade Sulfite subcategory, discharges of dioxin and furan will be reduced by seven grams to less than one gram per year. (EPA expects no discharges of dioxin and furan from TCF bleaching.) Total discharges of chlorinated phenolic pollutants will be

appropriate technology basis for BAT limitations for the calcium-, magnesium-, or sodium-based segment of the Papergrade Sulfite subcategory. (The following discussion also applies to PSES.) For this segment, TCF technology consists of oxygen- and peroxide-enhanced extraction, followed by peroxide bleaching, and with all chlorine-containing compounds eliminated (e.g., elemental chlorine, hypochlorite, chlorine monoxide, etc.). Although still TCF, the bleaching sequence is a change from proposal, when TCF bleaching was based on an oxygen stage with peroxide addition, followed by a peroxide bleaching stage. This change to the TCF bleaching sequence reflects the more common approach to TCF bleaching within this segment of the Papergrade Sulfite subcategory and also reflects the technology basis of the mill from which TCF performance data have been collected. EPA also included pulp cleaning to ensure that existing product quality specifications would continue to be achieved. EPA has selected this technology because it is technically available and economically achievable for mills in this segment.

In evaluating the technical availability of TCF processes for this segment, EPA developed a database of mills in the United States and Europe that produce pulp using TCF bleaching technology. There is at least one mill in the United States and 13 in Europe using acid cooking liquors of calcium, magnesium, or sodium sulfite that are using TCF bleaching processes. Among them, these mills produce a full range of paper products at up to 91 ISO brightness using TCF bleaching. These mills are able to produce the same products using TCF technology that they produced prior to converting to TCF, with no negative impact on product quality. EPA has incorporated pulp cleaners as an element of TCF technology to ensure that pulp quality requirements are maintained. See the Supplemental Technical Development Document, DCN 14487. For these reasons, EPA concluded that TCF bleaching is technically available for the calcium-, magnesium-, or sodium-based segment. See the record at section 21.2.1. (As noted above, EPA has established a separate segment for specialty grade sulfite mills using these cooking liquors.)

In order to evaluate the economic achievability of TCF bleaching for this segment, EPA considered the costs that existing mills would incur to convert to TCF processes. However, costs for secondary biological treatment systems have not been included because these systems already are in place at direct discharging mills. (This is true for the other papergrade sulfite segments as well.) As part of that analysis, EPA also included the costs of complying with today's BMP regulations. Because of the small size of this segment, EPA is not disclosing here the estimated capital costs, operation and maintenance costs, or post-tax annualized costs for this segment in order to protect confidential business information. However, EPA has determined that no mills are projected to close and no firms are projected to fail as a result of today's BAT limitations and PSES for this segment. This result obtains both when the impacts of today's BAT/PSES are considered together with the impacts of compliance with the MACT I costs, and when they are considered alone. Therefore, EPA has concluded that TCF bleaching is economically achievable for the calcium-, magnesium-, or sodium-based sulfite pulp segment. See DCN 14376 and DCN 14388 (both CBI).

For these reasons, EPA has selected the model TCF bleaching processes described above as the basis for BAT limitations and PSES for the calcium-, magnesium-, or sodium-based sulfite pulp segment.

(ii) Ammonium-Based Sulfite Mills. EPA had proposed BAT based on TCF bleaching technology for all mills in the Papergrade Sulfite subcategory, including those mills using ammonium-based acidic cooking liquor. EPA received comments and data challenging the applicability of TCF bleaching to ammonium-based sulfite mills. After reviewing these comments and data, EPA concluded that TCF bleaching is not demonstrated and may not be feasible for the full range of products produced by ammonium-based sulfite mills in the United States. See DCN 14497, Vol. I. (The following discussion also applies to PSES for this segment.)

This conclusion is based primarily on the greater difficulty in bleaching ammonium-based sulfite pulps (especially those pulps derived from softwood) without the use of chlorine-containing compounds compared to other sulfite pulps, and the inability to maintain product specifications for certain products within this segment using TCF bleaching. TCF bleaching has not been demonstrated for products with a high percentage of ammonium-based sulfite pulp that also require low dirt count and high strength. Laboratory scale data submitted by a firm producing such products indicate that such products can be produced with elemental chlorine-free (ECF) technologies. See DCN 14497, Vol. I, DCN 14494, and DCN 14118 in the record at Section 21.11.3.

Therefore, for papergrade sulfite mills using an acidic cooking liquor of ammonium sulfite, EPA is promulgating BAT limitations and PSES based on an ECF bleaching technology. The technology basis for BAT limitations for this segment is use of dioxin- and furan-precursor-free defoamers, complete (100 percent) substitution of chlorine dioxide for elemental chlorine, peroxide-enhanced extraction, and elimination of hypochlorite. ECF bleaching also includes high shear mixing to ensure adequate mixing of pulp and bleaching chemicals. This technology basis reflects the results of laboratory trials showing the ability to produce the full range of products manufactured by mills in the ammonium segment, with acceptable final product characteristics. See the record at section 30.11, DCN 14497, Vol. I, and DCN 14494. (The only exception is specialty grade sulfite mills using ammonium cooking liquors.)

EPA is also promulgating voluntary alternative BAT limitations and PSES based on TCF bleaching processes in order to encourage mills to use this technology whenever it is consistent with their product mix. See 40 CFR 430.54(a)(2) and 430.56(a)(2). Alternative TCF limitations are also available for new sources in this segment.

In addition to finding that the ECF bleaching process described above is technically available for the ammonium-based segment, EPA has also determined that it is economically achievable. In order to evaluate the economic achievability of ECF bleaching for this segment, EPA considered the costs that existing mills would incur to convert to the ECF process under consideration. As part of that analysis, EPA also included the costs of complying with today's BMP regulations. Because of the small size of this segment, EPA is not disclosing here the estimated capital costs, operation and maintenance costs, or post-tax annualized costs for this segment in order to protect confidential business information. However, EPA has determined that no mills are projected to close and no firms are projected to fail as a result of today's BAT limitations and PSES for this segment. This result obtains both when the impacts of today's BAT/PSES are considered together with the impacts of compliance with the MACT I costs, and when they are considered alone. Therefore, EPA has concluded that ECF bleaching is economically achievable for the ammonium-based segment. See DCN 14376 and DCN 14388 (both CBI).

the indirect discharger is achieving removal of the pollutants as required by the pretreatment standards. Moreover, EPA is concerned that dioxin and furan, even when present in nondetectable amounts at the point of discharge to the POTW, could pass through the POTW and accumulate in the biosolids, thus possibly interfering with the beneficial reuse of that biosolids material. The extent to which sludge can be beneficially reused is the subject of a separate ongoing rulemaking under CWA Section 405. Finally, under EPA's regulations, indirect dischargers are prohibited from substituting dilution for treatment, except where dilution is expressly authorized by the applicable pretreatment standard. See 40 CFR 403.6(d). (That is not the case here.) This prohibition theoretically could be enforced on a pollutant-by-pollutant, case-by-case basis. However, EPA is concerned that such a solution to the effluent's detection and dilution problems may impose an unnecessary financial and technical burden on POTWs.

At the time of proposal, EPA proposed that compliance with PSES/PSNS AOX limitations would be demonstrated at the point of discharge to the POTW. Since biological treatment is no longer part of the model technology for PSES/PSNS, AOX limitations based upon the performance of the PSES/PSNS technology are more appropriately set, and compliance demonstrated, at the bleach plant, prior to mixing with other wastestreams. This will reduce the burden on the pretreatment authority in implementing the PSES/PSNS limitations, as no additional allowance will need to be factored into the AOX limitations that would apply due to sources of AOX beyond the bleach plant. In this respect, the decision to establish in-plant points of compliance monitoring for all PSES/PSNS regulated parameters also furthers the goals of the Unfunded Mandates Reform Act. For all of these reasons, EPA is establishing in-plant points of compliance monitoring for PSES/PSNS on a nationwide level.

6. Papergrade Sulfite Subcategory

a. Segmentation of the Papergrade Sulfite Subcategory. In this final rule, EPA is dividing the Papergrade Sulfite subcategory into three segments to better reflect product considerations, the variation in manufacturing processes, and the demonstration of pollution prevention process changes within the category for the purpose of establishing BAT, NSPS, PSES, and PSNS. EPA's reasons for doing so are discussed in the July 1996 Notice, 61 FR at 36844–45, and in paragraphs b(1)–(2) below. EPA is promulgating final effluent limitations guidelines and standards for each segment. The three segments are:

(1) Production of pulp and paper at papergrade sulfite mills that use an acidic cooking liquor of calcium, magnesium, or sodium sulfite, unless those mills are specialty grade sulfite mills. See 40 CFR 430.51(c)(1). Mills in this segment are "calcium-, magnesium-, or sodium-based sulfite mills;"

(2) Production of pulp and paper at papergrade sulfite mills that use an acidic cooking liquor of ammonium sulfite, unless those mills are specialty grade sulfite mills. See 40 CFR 430.51(c)(2). Mills in this segment are "ammonium-based sulfite mills;" and

(3) Production of pulp and paper at specialty grade sulfite mills, or "specialty grade sulfite mills." Specialty grade sulfite mills are those mills where a significant portion of production is characterized by pulp with a high percentage of alpha cellulose and high brightness sufficient to produce end products such as plastic molding compounds, saturating and laminating products, and photographic papers. EPA considers a significant portion of production to be 25 percent or more. The specialty grade segment also includes those mills where a major portion of production is 91 ISO brightness and above. EPA considers a major portion of production to be 50 percent or more.

See 40 CFR 430.51(c)(3). In order to determine whether a sulfite mill belongs in the specialty grade segment, permitting authorities should consider the expected production mix over the full permit term. For mills that are converting to production in the specialty grade segment, EPA expects these mills will be subject to these limits prior to the time that these mills achieve the production mixes described above.

b. BAT. (1) Options Considered. EPA had proposed BAT effluent limitations for AOX and COD for the entire Papergrade Sulfite subcategory based on totally chlorine-free bleaching processes. Totally chlorine-free (TCF) bleaching processes are bleaching operations that are performed without the use of chlorine, sodium or calcium hypochlorite, chlorine dioxide, chlorine monoxide, or any other chlorine-containing compound. After concluding that the proposed technology was not demonstrated for the full range of products produced by mills using ammonium sulfite cooking liquor or for specialty grade products, EPA segmented the subcategory and considered other BAT options as set forth below. EPA also included for all segments the performance of existing secondary biological wastewater treatment as part of the basis for nonconventional and conventional pollutant effluent limitations and NSPS. For a more detailed discussion of these options, see the Supplemental Technical Development Document, DCN 14487.

(i) Calcium-, Magnesium-, or Sodium-Based Sulfite Mills. The technology option considered for papergrade sulfite products made by this segment was TCF bleaching, as proposed. See 58 FR at 66114–15. Existing TCF mills in this segment produce the same products they had been able to produce using elemental chlorine-free (ECF) bleaching processes, at up to 91 ISO brightness. Therefore, EPA did not consider ECF bleaching as a technology option for this segment, because, while technically available and economically achievable, it was not the best such technology for this segment.

(ii) Ammonium-Based Sulfite Mills. The technology options considered for this segment were TCF bleaching and ECF bleaching. ECF bleaching is any process for bleaching pulps that does not employ elemental chlorine or hypochlorite. There are numerous variations of ECF bleaching processes. The ECF process considered for the ammonium-based segment includes peroxide-enhanced extraction.

(iii) Specialty Grade Sulfite Mills. The technology bases considered for this segment were TCF bleaching and ECF bleaching. The ECF process considered for the specialty grade segment includes oxygen- and peroxide-enhanced extraction.

(2) Selection of BAT Technologies. In evaluating and selecting BAT technologies for the segments in this subcategory, EPA considered the age, size, processes, other engineering factors, and non-water quality environmental impacts pertinent to Subpart E mills. None of these factors provided a basis for selecting different BAT technologies. For each segment, EPA selected the best technology available to produce the products in each segment. Each of the selected BAT technologies is economically achievable and has no unacceptable adverse non-water quality environmental impacts. See the Supplemental Technical Development Document, DCN 14487. The reasons discussed below also support EPA's decision to select the BAT model technology for each segment as the basis for PSES for that segment.

(i) Calcium-, Magnesium-, or Sodium-Based Sulfite Mills. As proposed, EPA has concluded that TCF bleaching is the

TABLE VI–8.—BASELINE DISCHARGES AND ESTIMATED REDUCTIONS OF POLLUTANTS FOR BLEACHED PAPERGRADE KRAFT AND SODA MILLS FOR TECHNOLOGY OPTIONS CONSIDERED[a]—Continued

Pollutant parameter	Units	Baseline discharge	Estimated reductions: Option A	Estimated reductions: Option B	Estimated Reductions: TCF
2,3,7,8–TCDF	g/yr	9.47	8.94	9.04	9.47
Chloroform	kkg/yr	4.89	4.28	4.28	4.89
12 Chlorinated phenolic pollutants	kkg/yr	3.58	2.81	2.97	3.58
AOX	kkg/yr	3,010	2,100	2,600	3,010

[a] The TCF calculations assumed that chlorinated pollutants will not be present. For all other calculations, EPA assumed that pollutants reported as "not detected" were present in a concentration equivalent to one-half the minimum level of the analytical method.

(5) PSES/PSNS Option Selection. EPA is promulgating PSES and PSNS for dioxin, furan, chloroform, 12 chlorinated phenolic pollutants, and AOX based on the process technologies that form the bases for BAT and NSPS, respectively.

The Agency considered the age, size, processes, other engineering factors, and non-water quality environmental impacts pertinent to Subpart B mills in developing PSES/PSNS. None of these factors provided any basis for establishing different PSES/PSNS. EPA has no data to suggest that the combination of technologies upon which today's PSES/PSNS are based results in unacceptable non-water quality environmental impacts.

Because the costs of the selected BAT and PSES model technologies are attributable solely to process changes, the costs for an existing indirect-discharging bleached papergrade kraft and soda mill to comply with PSES are comparable to a similar direct-discharging bleached papergrade kraft and soda mill. See Section VI.B.5.a(2). As discussed in Section VI.B.5.a(5), EPA found PSES based on BAT Option A to be economically achievable. Similarly, EPA considered the cost of the PSNS technology for new mills (based on BAT Option B) and determined that such costs do not present a barrier to entry, as reflected in the barrier to entry discussion for NSPS in Section VI.B.5.b(3).

The rationale for choosing BAT Option A as the basis for PSES is set forth in Section VI.B.5.a(5). The rationale for selecting NSPS Option B as PSNS is the same as that provided in Section VI.B.5.b for selecting that model technology as the basis for NSPS for this subcategory. Although for the reasons set forth in those sections EPA is not selecting TCF bleaching processes as the model technology for PSES or PSNS, EPA nevertheless is promulgating voluntary alternative pretreatment standards based on TCF bleaching processes in order to encourage mills to use those processes when possible. See 40 CFR 430.26(a)(2) and 430.27(a)(2).

The pretreatment standards for the Bleached Papergrade Kraft and Soda subcategory also include best management practices. See 40 CFR 430.03. These regulations are described in Section VI.B.7. For a discussion of the pass through of pollutants controlled by BMPs, see Section VI.B.7. In addition, the previously promulgated PSES and PSNS for former subparts G, H, I and P for the biocides pentachlorophenol and trichlorophenol continue to apply unless the discharger certifies that it does not use those compounds as biocides. See 40 CFR 430.26(b) and 430.27(b).

(6) Limitations. With the exception of AOX, the limitations promulgated as PSES for Subpart B are identical to those promulgated as BAT limitations for this subpart. See 40 CFR 430.26(a)(1). For a discussion of the development of those pretreatment standards see Section VI.B.5.a(4).

EPA found that while end-of-pipe biological treatment systems at industrial POTWs and at direct dischargers achieve comparable removals of AOX, the total AOX removals achieved by direct discharging mills are greater because of the process changes that are part of the model BAT/PSES technologies. Therefore, EPA has established AOX pretreatment standards based on the performance of process changes alone (biological treatment is not a component of PSES/PSNS). EPA has developed AOX limits for PSES based on bleach plant data for eight mills that employ the process technologies incorporated in Option A. These pretreatment standards are presented in Table VI–9.

TABLE VI–9.—BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY PSES AOX LIMITATIONS

Pollutant parameter	Daily maximum limitation (kg/kkg)	Monthly average limitation (kg/kkg)
AOX	2.64	1.41

Similarly, with the exception of AOX, the PSNS promulgated for Subpart B for toxic and nonconventional pollutants are identical to the NSPS promulgated for this subpart. See 40 CFR 430.27(a)(1). For a discussion of the development of those pretreatment standards, see Section VI.B.5.a(4). EPA has developed AOX limits for PSNS based on bleach plant data for six mills that employ the process technologies incorporated in Option B. These pretreatment standards are presented in Table VI–10.

TABLE VI–10.—BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY PSNS AOX LIMITATIONS

Pollutant parameter	Daily maximum limitation (kg/kkg)	Monthly average limitation (kg/kkg)
AOX	1.16	0.814

(7) Point of Compliance Monitoring. For many of the same reasons set forth in Section VI.B.5.a(6) above in connection with EPA's decision to specify an in-plant point of compliance monitoring for many of the BAT parameters, EPA is requiring indirect discharging mills subject to Subpart B to demonstrate compliance with pretreatment standards for dioxin, furan, chloroform, the chlorinated phenolic pollutants, and AOX at the bleach plant. See 40 CFR 430.26(c) and 430.27(c). As is the case for direct dischargers, data for indirect discharging mills show that standards imposed at the point of discharge to the POTW would make it impractical for the permitting authority to assure that

sludge could possibly interfere with air sludge disposal options.

For chloroform, EPA also evaluated the removal efficiencies achieved by POTWs by comparing the removals achieved by direct discharging mills using BAT process technologies to the removals achieved by POTWs receiving effluent from subpart B mills. The record shows that, without the BAT process changes, a very high percentage of chloroform volatilizes from collection, conveyance, and aeration systems. EPA has consistently refused in these circumstances to regard such transfers of pollutants from wastewater to air as treatment. See, e.g., 59 FR 50638, 50665 (Sept. 28, 1993) (pesticides chemicals guidelines); 58 FR 36872, 36886–88 (July 9, 1993)(organic chemicals, plastics, and synthetic fibers guidelines). Therefore, because of this volatilization of chloroform in the absence of bleach plant process changes, the quantity of chloroform actually available to be removed by the POTWs' secondary treatment works is less than the quantity of that pollutant removed by the direct discharger employing BAT. Accordingly, EPA concludes that there is pass-through of chloroform in the absence of pretreatment standards for this pollutant, as well as unacceptable non-water quality environmental impacts from air emissions. For a detailed discussion of chloroform volatilization, see Section 8.8 of the Supplemental Technical Development Document, DCN 14487, and the Air Docket, No. A–92–40, Item IV–A–8.

EPA's determination that the chlorinated phenolic pollutants pass through the POTW is based on data in the record showing that the selected BAT process technology option (Option A) reduces all 12 of the chlorinated phenolic pollutants to concentrations less than minimum levels for these polhutants in bleach plant wastewaters, prior to end-of-pipe biological wastewater treatment systems. While biological wastewater treatment systems comparable to POTW treatment systems have been found to remove a portion of these chlorinated phenolic pollutants, the removals achieved are less than the removals achieved by the BAT process changes alone. Therefore, because overall chlorinated phenolic pollutant removals with implementation of the model BAT technologies are substantially greater than removals achieved by POTWs, chlorinated phenolic pollutants pass through POTWs.

EPA has also determined that AOX passes through. EPA bases this conclusion on its review of all available data regarding removals of AOX achieved by industrial POTWs that receive a majority of their flow or a majority of their BOD_5 or TSS loadings from indirect dischargers covered by subpart B. Although the data show that the performance of these POTWs in removing AOX is comparable to the performance of end-of-pipe biological treatment systems operated by direct dischargers in this subcategory, the data also show that direct dischargers meeting limitations based on the model BAT technology consistently achieve far greater AOX removals than biological treatment alone can achieve (e.g., at a POTW). (See the Supplemental Technical Development Document, DCN 14487.) Therefore, in the absence of pretreatment standards analogous to BAT, the affected POTWs receiving pulp and paper wastewaters cannot achieve the same overall removals of AOX as achieved by direct dischargers complying with the BAT limitations for AOX. The same is also true when considering removals achieved by new sources complying with NSPS. Therefore, contrary to the preliminary finding in the July 1996 Notice, EPA concludes that AOX passes through POTWs and is setting pretreatment standards for AOX for new and existing indirect discharging mills. See 40 CFR 430.26(a) and 430.27(a).

The pretreatment standards promulgated today for AOX are equivalent to the AOX loadings present in the bleach plant wastewaters of mills employing the BAT/NSPS technologies prior to biological treatment systems at direct discharging mills. EPA expects that removals achieved by indirect dischargers employing the PSES or PSNS model technology, in combination with removals achieved by biological treatment systems at POTWs, will be comparable to the removals achieved by direct dischargers complying with BAT limitations or NSPS.

In reviewing the information available in the record for the pollutants BOD_5 and TSS, EPA concluded that pollutant reductions attained by direct dischargers' biological wastewater treatment systems and by POTWs accepting similar wastewaters are comparable and that pass-through of these pollutants does not occur. As a result, EPA is not promulgating national PSES or PSNS for BOD_5 and TSS for the Bleached Papergrade Kraft and Soda subcategory. Other regulatory authorities may determine, based on a site-specific review of treatment system performance, that locally imposed limits are necessary to prevent the POTW from violating its NPDES permit. See 40 CFR 403.5.

(3) Options Considered. In this final rule, EPA considered the same process technology options and best management practices for PSES and PSNS as it did for BAT and NSPS. In a change from the proposal, EPA did not consider for PSES/PSNS the biological treatment technology that forms part of the candidate BAT and NSPS technologies. Since proposal, EPA has made new findings with respect to the pass-through of BOD_5 and TSS. EPA has also received comments indicating that the lack of sufficient land for the installation of biological treatment at some indirect dischargers makes such systems infeasible and unavailable. This finding, combined with EPA's finding that biological wastewater treatment systems at POTWs treating pulp and paper wastewaters are comparable to the biological wastewater treatment systems operated by direct discharging mills in subpart B, has lead EPA to conclude that biological wastewater treatment should not be included as part of the PSES or PSNS candidate technologies.

(4) Effluent Reductions. As discussed in Section VI.B.5.a.(3) above, after proposal EPA recalculated the effluent reductions attributable to its PSES technology options using a new baseline of mid-1995. See the Supplemental Technical Development Document, DCN 14487.

Table VI–8 shows the estimated baseline and the reduction from baseline expected if the presented options were implemented by all the existing indirect discharging mills in the subcategory (i.e., those mills to which PSES will apply).

TABLE VI–8.—BASELINE DISCHARGES AND ESTIMATED REDUCTIONS OF POLLUTANTS FOR BLEACHED PAPERGRADE KRAFT AND SODA MILLS FOR TECHNOLOGY OPTIONS CONSIDERED[a]

Pollutant parameter	Units	Baseline discharge	Estimated reductions: Option A	Estimated reductions: Option B	Estimated Reductions: TCF
2,3,7,8–TCDD	g/yr	1.25	0.92	1.00	1.25

continue to apply to all new sources. See 40 CFR 430.25(d).

(4) Limitations and Point of Compliance Monitoring. EPA is promulgating NSPS for dioxin, furan, chloroform, the 12 chlorinated phenolic pollutants, and AOX for Subpart B at the levels set forth in Tables VI–5 and VI–6 for BAT Option B. See 40 CFR 430.25(b)(1). For a discussion of EPA's development of those standards (presented in the context of possible BAT limitations derived from Option B technologies), see Section VI.B.5.a(4). The numerical values of today's NSPS for BOD5 and TSS for the Bleached Papergrade Kraft and Soda subcategory have been revised from those provided in the July notice. For a discussion of these changes, see the Statistical Support Document, DCN 14496. The final NSPS for BOD_5, TSS and pH are presented in Table VI–7 below.

TABLE VI–7.—NEW SOURCE PERFORMANCE STANDARDS FOR CONVENTIONAL POLLUTANTS FOR THE BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY

NSPS			
Pollutant or pollutant property	Continuous dischargers		Non-continuous dischargers
	Maximum for any 1 day (kg/kkg)	Monthly average (kg/kkg)	Annual average (kg/kkg)
BOD5	4.52	2.41	1.73
TSS	8.47	3.86	2.72
pH	(1)	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

EPA is requiring mills to demonstrate compliance with the NSPS for dioxin, furan, chloroform and the 12 chlorinated phenolic pollutants inside the discharger's facility at the point where the wastewater containing those pollutants leaves the bleach plant. See 40 CFR 430.25(e). EPA bases this decision on the reasons discussed in Section VI.B.5.a(6) for BAT limitations. EPA is not specifying a point of compliance monitoring for AOX, BOD_5, TSS, pH, or the biocides.

c. Pretreatment Standards for Existing Sources (PSES) and Pretreatment Standards for New Sources (PSNS). (1) Background. EPA proposed the same technology option for PSES as it did for BAT. This proposed option would have set PSES for the same pollutants controlled by BAT. For new indirect discharging facilities, EPA proposed that PSNS be set equal to NSPS for the toxic and nonconventional pollutants. At proposal, EPA also discussed three options for implementing the pretreatment standards. See 58 FR at 66123–25. EPA also solicited comment on whether pretreatment standards for BOD_5 and TSS were warranted to ensure that pass-through of these and other pollutants (e.g., AOX) did not occur.

(2) Pass-through Analysis for PSES and PSNS. EPA promulgates pretreatment standards for pollutants that pass through or interfere with POTWs. EPA performed a pass-through analysis as part of this rulemaking, which is summarized below. See also the Supplemental Technical Development Document, DCN 14487. EPA has determined for subpart B mills that dioxin, furan, chloroform, the 12 chlorinated phenolic pollutants, and AOX pass through POTWs. Therefore, the Agency is promulgating PSES and PSNS for these pollutants. See 40 CFR 430.26(a)(1) and 430.27(a)(1).

EPA's record shows that both direct discharging mills and POTWs accepting wastewaters from pulp and paper mills in the Bleached Papergrade Kraft and Soda subcategory operate secondary biological treatment systems. The indirect discharging mills in this subcategory contribute the majority of the pollutant loading and up to 90 percent of the flow to these POTWs. (EPA refers to these POTWs as "industrial POTWs.") EPA has reviewed data available in the record for BOD_5 and TSS, among other pollutants, and has determined that the biological treatment systems at these POTWs are comparable to the biological treatment systems operated by direct discharging mills in subpart B. See the Supplemental Technical Development Document, DCN 14487.

EPA reviewed all available data in the record to conduct a pass-through analysis. EPA compared the percent of removals achieved by subpart B mills implementing the BAT technologies to the percent of the same pollutants removed by the industrial POTWs receiving effluent from subpart B mills. EPA's record shows that dioxin and furan are not removed by biological treatment systems and so are not removed by the POTW. Therefore, these pollutants pass through untreated and are discharged to receiving streams, where dioxin and furan bioaccumulate in aquatic organisms. EPA bases this conclusion on data reported in the "104-Mill Study," which EPA undertook in cooperation with industry in 1988/89. That study shows that direct discharging bleached papergrade kraft and soda mills operating secondary biological treatment systems (without the addition of bleach plant process controls) discharge dioxin and furan in detectable quantities. When mills in that subcategory later implemented bleach plant process changes and controls comparable to the model BAT technologies considered in promulgating today's BAT effluent limitations guidelines, the data show that dioxin and furan discharges dropped below the minimum level at which those pollutants can be reliably measured. This was the case even where there was no concurrent change to the secondary biological treatment systems. (Indeed, EPA's candidate BAT technologies assume secondary biological treatment systems operating at the 1989 level). Because, as discussed above, the industrial POTWs receiving effluent from bleached papergrade kraft and soda mills operate biological treatment systems that are comparable to those operated by direct discharging mills in the "104-Mill Study," EPA concluded that subpart B mills implementing the selected in-plant BAT model technology achieve substantially greater reductions of dioxin and furan than industrial POTWs can achieve from effluent not subject to BAT-level process controls. EPA finds that in the absence of PSES equivalent to BAT levels of control, dioxin and furan would pass through POTWs. EPA also believes that the presence of these pollutants in the POTWs' secondary

secondary wastewater treatment system as characterized by the average of the best 50 percent of the existing mills in the subcategory.

(3) Option Selected, Pollutants Regulated, and Costs. EPA is promulgating NSPS for the Bleached Papergrade Kraft and Soda subcategory for toxic and nonconventional pollutants based on the NSPS option equivalent to BAT Option B. EPA has determined that Option B technology represents the best demonstrated control technology, process, operating method, or other alternative available at this time. The toxic and nonconventional pollutants regulated by NSPS are the same as those regulated by BAT. For further discussion of the NSPS model technology, the Supplemental Technical Development Document, DCN 14487.

EPA rejected as possible NSPS technologies the technologies that have not been demonstrated to achieve full market pulp specifications. EPA knows of two ECF bleach lines using ozone-based bleaching in the U.S. One line uses an OZE_oDD bleach sequence to bleach hardwood to 83 GE brightness (less than 82 ISO). The other line uses an OZE_oD bleach sequence to bleach softwood to 84 ISO, somewhat less than full market brightness. EPA collected data from this line that confirm that OZE_oD bleaching results in much lower water use and pollutant loadings than either Option A or Option B. Because of this level of performance, EPA strongly encourages further development of ozone-based bleaching sequences—as part of either ECF or TCF sequences. It is possible that lines using ozone-based bleaching sequences will achieve the AOX limits promulgated as part of the Voluntary Advanced Technology Incentives Program, which is described in Section IX of this Notice.

With respect to TCF bleaching processes, several non-U.S. mills have reported the production of TCF softwood kraft pulp at full market brightness. However, EPA's data are not sufficient to confirm that TCF bleaching processes are technically demonstrated for the full range of market products currently served by the kraft process. EPA is also unable to define a segment of the Bleached Papergrade Kraft and Soda subcategory for which TCF bleaching processes are known to be technically feasible and thus could be the basis for NSPS. EPA believes that progress being made in developing TCF bleaching processes is substantial, however, and that additional data may demonstrate that TCF processes are indeed available for the full range of market products. To this end, elsewhere in today's **Federal Register** Notice, EPA is inviting additional data and comment on the full range of market specifications currently being achieved for TCF kraft pulp (e.g., brightness, strength, and cleanliness). EPA will evaluate whether the performance of this technology will result in greater removals than the performance of the NSPS technology option being selected today. Depending on these findings, EPA will determine whether to propose revisions to NSPS based upon TCF and, if appropriate, flow reduction technologies.

In addition to NSPS relating to the Voluntary Advanced Technology Incentives Program, which is discussed below in this section, EPA is also promulgating alternative NSPS for Bleached Papergrade Kraft and Soda mills voluntarily choosing to use TCF technologies. See 40 CFR 430.25(b)(2).

For the conventional pollutants BOD_5 and TSS, EPA is basing NSPS upon the best available demonstrated performance of a secondary wastewater treatment system as characterized by the average of the best 50 percent of the existing mills in the subcategory. EPA has determined that the performance of the single best mill does not account for all sources of process-related variability in conventional pollutant generation and treatability expected in the entire subcategory, including raw materials (i.e., furnish), process operations, and final products. In selecting the final NSPS technology basis for conventional pollutants, EPA found it necessary to consider the secondary wastewater treatment performance of the best 50 percent of the existing mills in this subcategory in order to ensure that the resulting standards reflect the full range of processes and raw materials to produce the full range of products covered by this subcategory. For further discussion, see the Supplemental Technical Development Document, DCN 14487, and DCN 14497, Vol. I and II.

EPA is not revising NSPS for pH for subpart B; however, for the convenience of the permit writer, EPA has recodified the 1982 NSPS for pH as part of the table of newly promulgated NSPS for toxic, non-conventional, and other conventional pollutants. See 40 CFR 430.25(b).

In selecting its model NSPS technologies, EPA considered all of the factors specified in CWA section 306, including the cost of achieving effluent reductions. The incremental capital cost of complying with the selected NSPS for all pollutants, as compared to the costs of complying with standards based on the next best technology, BAT Option A, is only 0.5 to 2.0 percent of the total capital cost of constructing either a new source fiber line at an existing mill or a new greenfield mill. Moreover, the process technologies that form the basis for NSPS result in lower pollutant loadings requiring biological treatment. Loadings of BOD_5 from a bleach line employing NSPS will be approximately 30 percent lower than loadings from a conventional bleach line. Compared to the cost of treating wastewater from a conventional bleach line to meet current BPT/BCT effluent limitations guidelines, the cost of treating wastewater from a NSPS bleach line to meet NSPS for conventional pollutants will be the same or lower. Finally, as of mid-1995 there are 14 existing mills representing approximately 16 percent of the bleached papergrade kraft production that employ the Option B technology. For these reasons, EPA concludes that the costs of complying with NSPS for toxic, non-conventional or conventional pollutants do not present a barrier to entry. See the Supplemental Technical Development Document, DCN 14487. See also Section VIII and Chapter 6 of the Economic Analysis, DCN 14649.

The Agency also considered energy requirements and other non-water quality environmental impacts for the selected NSPS option. EPA concluded that increased chemical recovery and reduced energy consumption and operating costs would occur for this option. EPA also concluded that non-water quality environmental impacts were only marginally different than for the selected BAT technology option and are acceptable. Thus, EPA concluded that none of the statutory factors justified selecting a different NSPS model technology than the one chosen. See Section VII. See also the Supplemental Technical Development Document, DCN 14487.

EPA is also promulgating NSPS as part of the Voluntary Advanced Technology Incentives Program with standards set at the Tier II and Tier III levels. See 40 CFR 430.25(c). For a discussion of this program, see Section IX. A new source may choose to enroll in the Voluntary Advanced Technology Incentives Program at the Tier II or Tier III NSPS level and therefore to commit to achieve those standards at the time it commences operation. Alternatively, a new source may choose to commence operation at the compulsory NSPS level and then later enroll in the Incentives Program at the Tier II or Tier III level as an existing source, or enroll in the Incentives Program once Tier II or Tier III limitations are achieved.

Finally, EPA notes that the previously promulgated NSPS for the biocides pentachlorophenol and trichlorophenol

same process technologies necessary to address dioxin and furan also reduce the levels of chlorinated phenolic pollutants to concentrations below minimum levels at the bleach plant. Commenters have supplied no data showing that the chlorinated phenolic pollutants should or indeed, as a practical matter, could be segregated from the dioxin- or furan-bearing wastestreams in order to utilize a mill's secondary treatment system fully. Nor is there any assurance that BAT limitations for these pollutants, if monitored at the end of the pipe, would be achieved by treatment rather than simply by the effects of dilution. See 40 CFR 122.45(h). Thus, EPA believes that it is appropriate to require compliance monitoring for the BAT limitations on the 12 chlorinated phenolic pollutants at the point they most easily can be achieved and measured—at the bleach plant.

In the case of chloroform, in-plant limits are authorized by 40 CFR 122.45(h) because they offset the effects of dilution, in this case, the occurrence of uncontrolled volatilization. In other regulatory contexts, EPA recognizes that dilution includes not only mixing a pollutant of concern with other wastestreams, but also mixing it with excess air in the form of uncontrolled volatilization. See 52 FR 25760, 25778–79 (July 8, 1987). Volatilization, like dilution, does nothing to remove, destroy, or immobilize pollutants, and for this reason is not in itself a form of treatment. id. at 25779. The policy reasons supporting that principle in the hazardous waste context similarly apply here.

Finally, EPA is setting effluent limitations at the bleach plant in order to avert the non-water quality environmental impacts caused by the volatilization of chloroform to the air and in order to be consistent with its Clean Air Act determination that the MACT floor for chloroform consists of bleach plant process modifications, i.e., complete chlorine dioxide substitution and elimination of hypochlorite as bleaching agents. Specifically, EPA is requiring under the Clean Air Act that chloroform emissions be controlled by complying with the BAT requirements for all regulated pollutants. See 40 CFR 63.445(d). Therefore, EPA has determined under its Clean Air Act authority that bleach plant technologies—and bleach plant limitations on dioxin, furan, chloroform and the 12 chlorinated phenolics—are necessary to regulate air emissions of chloroform. The situation presented here is very different from the situation EPA faced when promulgating effluent limitations guidelines and standards for the organic chemicals, plastics and synthetic fibers industrial category in 1987. See 52 FR 42522, 42658–62 (Nov. 5, 1987). In that rulemaking, the issue before EPA was whether to use in-plant limitations and standards to regulate air emissions of certain volatile and semi-volatile pollutants; EPA chose not to set in-plant requirements for that purpose because it determined that the regulation of such emissions was best accomplished in a Clean Air Act proceeding, which EPA was commencing at that time. See 52 FR at 42560–62. In contrast, EPA in this rulemaking integrated its decision-making under the Clean Water Act and the Clean Air Act expressly to address these cross-media issues. Taking into account both the air and water objectives of these Cluster Rules, EPA therefore concludes that it is highly appropriate for EPA to set effluent limitations under the Clean Water Act to correspond to and support its concurrent regulation of air emissions under the Clean Air Act.

b. New Source Performance Standards. (1) Background. The Agency proposed to revise NSPS for the Bleached Papergrade Kraft and Soda subcategory. New mills have the opportunity to incorporate the best available demonstrated technologies, including process changes, in-plant controls, and end-of-pipe treatment technologies.

(a) Definition of "New Source". EPA had proposed supplemental definitions of the term "new source," as provided in National Pollutant Discharge Elimination System (NPDES) permit program regulations found at 40 CFR 122.2 and 122.29, for the pulp and paper industry only. See 58 FR at 66116–17. EPA is codifying a definition of "new source" in Part 430 for subparts B and E. See 40 CFR 430.01(j). The new definition provides that new source performance standards are triggered by new "greenfield" mills, complete replacements of entire fiber lines (e.g., pulping and bleaching), or the construction of a new source whose processes are substantially independent of an existing source, such as a new fiber line built to supplement an existing fiber line. Specifically excluded from the definition of new source are existing mills that modify existing fiber lines for purposes of complying with either BAT limitations or PSES, and existing mills that replace entire fiber lines in order to comply with Advanced Technology BAT limitations. For more details, see Section VI.B.8.a(2).

(b) Proposed NSPS. EPA proposed NSPS for toxic and nonconventional pollutants for the Bleached Papergrade Kraft and Soda subcategory based on the combination of both oxygen delignification and extended cooking followed by 100 percent substitution of chlorine dioxide for elemental chlorine and elimination of hypochlorite (identified at proposal as Option 5). The proposed technology bases for NSPS also included the other elements described as part of BAT in VI.B.5.a(1). EPA also proposed NSPS for BOD_5 and TSS based on the single best demonstrated end-of-pipe secondary wastewater treatment system. See 58 FR at 66116–18, 66197. To encourage continuing innovation in the development of processes to reduce or eliminate the discharge of pollutants from the Bleached Papergrade Kraft and Soda subcategory, EPA also proposed alternative NSPS limits for mills adopting TCF processes. See 58 FR at 66111.

(2) Options Considered. In addition to the option proposed for NSPS, EPA considered three other options for the technology basis of NSPS for toxic and nonconventional pollutants. These options are summarized below. For further discussion of these options, see the Supplemental Technical Development Document, DCN 14487. The first alternative option is identical to BAT Option B, described above. This revised NSPS option includes extended delignification (i.e., oxygen delignification and/or extended cooking) to produce softwood pulps with a kappa number of approximately equal to or less than 20 (approximately 13 for hardwoods), followed by complete (100 percent) substitution of chlorine dioxide for elemental chlorine and elimination of hypochlorite for bleaching. EPA concluded that there are no performance differences between the proposed NSPS option and this revised option. See the Supplemental Technical Development Document, DCN 14487.

EPA also considered an ECF technology used at two U.S. mills consisting of oxygen delignification followed by ozone bleaching, enhanced extraction, and final chlorine dioxide brightening. This technology is used to produce pulps of somewhat lower brightness than market pulps. Finally, the Agency considered a TCF process technology that one U.S. mill is currently using to produce pulps with brightness up to 83 ISO.

For conventional pollutants, EPA considered the proposed NSPS option based on the single best available demonstrated end-of-pipe secondary wastewater treatment and a second option based on the best available demonstrated performance of a

predicted closures attributable to Option B, when considered without regard for the impact of the MACT I rule on subpart B mills, is the same as the number of predicted closures under Option A when MACT I impacts are considered. (This is also true for job losses and effects on shipments.) However, EPA does not believe that these impacts alone are a compelling decision basis for this rulemaking. Not only would such an analysis fail to account for the real-world economic impacts of the concurrent MACT I rulemaking, but the closures and related impacts by themselves fail to express the total economic impacts EPA predicts for Option B. For the reasons described above, EPA concludes that it is appropriate to take into account the potential firm failures attributable to Option B in this rulemaking. Further, EPA concludes that it is appropriate in this rulemaking to base the economic achievability determination on the total economic impacts (the closures and the projected firm failures, coupled with predicted regional and market impacts) of its BAT/PSES options on the industry. Those total economic impacts constitute the principal and deciding difference between the selected BAT/PSES technology basis and Option B. Based on that conclusion, EPA has determined that only Option A is economically achievable for subpart B as a whole, both when the impacts of compliance with the MACT I rule are considered and when they are not.

EPA is also rejecting Option B because its capital costs are simply too high when compared to Option A. Implementation of Option B would result in capital costs that are more than $1 billion greater than those associated with Option A. EPA believes that this consideration is particularly relevant in this rulemaking for several reasons. First, these Cluster Rules represent the fourth set of effluent limitations guidelines and standards promulgated for subpart B mills. Since 1977, the industry has incurred substantial capital costs to achieve its current level of pollutant control and has achieved significant pollutant loading reductions. This is also the first pulp and paper regulation to employ process changes, rather than treatment technologies, as the core of its model BAT/PSES technology. EPA is authorized, in the exercise of its discretion, to consider these factors as the Administrator deems appropriate in selecting BAT. See CWA section 304(b)(2)(B). For all of these additional reasons, EPA has concluded that Option B is not the best available technology economically achievable for subpart B at this time.

EPA also evaluated the economic achievability of TCF process technologies for subpart B mills. EPA concluded that the annualized cost of retrofitting existing sources for TCF is substantially greater than the annualized cost of Option B (regardless which bleaching chemicals are used), with additional impacts ranging from seven estimated closures and 7,100 job losses to the potential that a greater number of firms would be placed in jeopardy of bankruptcy. See Section VIII.F. (When this option is considered in light of MACT I compliance costs, the economic impacts would be even greater. See id.) EPA, therefore, concluded that TCF bleaching processes are not economically achievable for the subcategory as a whole at this time. Nevertheless, EPA is promulgating voluntary alternative BAT limitations and PSES based on TCF bleaching processes in order to encourage mills to use this technology whenever possible. See 40 CFR 430.24(a)(2). 430.26(a)(2).

EPA determined that Option A is the best technology because no other option that was both available and economically achievable resulted in greater reductions in effluent loadings for dioxin, furan and other significant pollutants of concern. (See 58 FR at 66110 for other options considered at proposal.) For a discussion of the effluent reduction benefits associated with Option A, see Section VIII.G.

(6) Point of Compliance Monitoring. EPA is requiring mills in subpart B to demonstrate compliance with BAT limitations for dioxin, furan, chloroform, and 12 chlorinated phenolic pollutants inside the discharger's facility at the point where the wastewater containing those pollutants leaves the bleach plant. EPA is authorized by the Clean Water Act and EPA's regulations at 40 CFR 122.44(i), 122.45(h), and 125.3(e) to specify an in-plant point of compliance monitoring for technology-based limitations. Hereafter, EPA refers to the BAT limitations for which compliance must be demonstrated in-plant as "in-plant limitations." As set forth in more detail below, EPA is establishing in-plant limitations on bleach plant effluent because limitations imposed on those pollutants at the point of discharge are impractical and infeasible as measures of the performance of process technologies representing the technology-based levels of control. Moreover, in-plant effluent limitations are consistent with the MACT standards for chloroform, which independently require achievement of BAT limitations on dioxin, furan, chloroform and the 12 chlorinated phenolic compounds at the bleach plant (in addition to compliance with AOX limitations) in order to ensure that the removals represented by the MACT technology floor—complete substitution of chlorine dioxide for elemental chlorine and elimination of hypochlorite—are attained.

Mills using the model BAT technology, described in section VI.B.5.a(1), are able to achieve at the bleach plant concentrations of dioxin and the 12 chlorinated phenolic pollutants at levels below the minimum levels of currently available analytical methods. Furan concentrations, in turn, are very near the analytical minimum levels. (At the end of the pipe, furan in many mills' effluent cannot be detected by available analytical methods.)

Because only 10 to 40 percent of the wastewater discharged by mills in subpart B originates in the bleach plant, (see the Supplemental Technical Development Document, DCN 14487) the concentrations of pollutants in the final effluent would be one-tenth to two-fifths of their concentrations at the bleach plant. In the biological wastewater treatment system, the pollutants may be present but in concentrations below the applicable analytical minimum levels. When they are discharged to receiving streams, however, dioxin and furan bioaccumulate in aquatic organisms. Were EPA to allow compliance monitoring of the final effluent, there would be no way to determine whether the bleach plant effluent has been adequately controlled or whether the effluent has simply been diluted below the analytical minimum level by the other flows. Diluting pollutants in this manner rather than preventing their discharge is inconsistent with achieving the removals represented by the technology-based levels of control, and hence with the purpose of the BAT limitations. It is also inconsistent with the goals of the Clean Water Act in general. See sections 101(a) and 301(b)(2)(A). While no mill is required to install EPA's model BAT technology, establishing limitations at the bleach plant is the only way EPA can ensure that none of these pollutants will be discharged at concentrations greater than the levels achievable through implementation of the best available technology. See *E.I. du Pont de Nemours & Co.* v. *Train*, 430 U.S. 112; 129 (1977).

With respect to the 12 chlorinated phenolic pollutants, EPA acknowledges that these pollutants could be degraded by biological treatment of the facility's combined wastewater. However, the

is economically achievable for the Bleached Papergrade Kraft and Soda subcategory as a whole for several reasons. When EPA considered the effect of BAT/PSES compliance in light of the MACT I rule on subpart B mills, EPA estimated that the selected BAT/PSES Option would cause two mill closures, with related direct loss of 900 jobs and a $275 million decrease in shipments, and no firm failures that are likely to result in additional job loss. (See Section VIII.F and Table VIII–4 for other economic impacts associated with the selected BAT/PSES option, with and without MACT I compliance costs.) The number of closures (two) is less than 3 percent of the affected mills (86) in the subcategory. The loss of jobs associated with these closures is about one percent of subcategory employment. EPA believes that, even with these projected impacts, the selected BAT/PSES is economically achievable for this subcategory as a whole. When the cost of the MACT I rule on subpart B mills is not considered, the selected BAT/PSES would cause one mill closure and no firm failures they are likely to result in additional job loss. See Section VIII.E. For confidentiality reasons, related losses of jobs and shipments cannot be disclosed in this **Federal Register** notice, but are described in the CBI portion of the record.

EPA concluded that Option B is not economically achievable for the Bleached Papergrade Kraft and Soda subcategory as a whole. When EPA considered the effect of BAT/PSES compliance in light of the MACT I rule on subpart B mills, EPA estimated that Option B would cause four mill closures, with a related direct loss of up to 4,800 jobs, and a $1.3 billion decrease in shipments, and one or more firm failures that are likely to result in additional job loss. (See Section VIII.F and Table VIII–4 for other economic impacts associated with Option B with and without MACT I compliance costs.) EPA estimates that when the cost of the MACT I rule is not considered, Option B would cause two mill closures, with a related direct loss of 900 jobs and a $275 million decrease in shipments, and one or more firm failures. See Section VIII.F.1.

While the increased number of closures and related job losses associated with Option B are strong indicators of economic unachievability, the potential firm failures (i.e., bankruptcies) associated with this Option are particularly problematic. For each option, EPA's bankruptcy analysis focuses on whether each affected company can afford to make the collective investment required to install the technology upon which the option is based for all of its facilities. The substantially higher capital cost associated with Option B results in the potential failure of one or more firms that Option A does not cause. In most cases, requirements to raise capital to upgrade each mill to meet Option B limitations and standards may seriously jeopardize some companies' ability to cover interest on the new investments as well as other costs. In other words, some companies with insufficient cash or equity resources to cover the costs of these upgrades may be in jeopardy of bankruptcy. It takes an event of considerable magnitude to induce bankruptcy in a firm. The fact that Option B, even when considered without regard for the impact of the MACT I rule on this subpart, is projected to drive one or more firms into bankruptcy indicates to EPA the significant magnitude of Option B's capital requirements. In EPA's view, the overall effect of Option B on those firms would be substantial. See Section VIII.F. For a more detailed discussion of EPA's firm failure analysis, see the Economic Analysis, Chapter 6 (DCN 14649).

The magnitude of the effects that may arise from large firm bankruptcies is a substantial indicator of the economic unachievability of Option B. The negative effects are indefinite and unquantifiable, but EPA has reason to believe, based on the recent history of the domestic pulp and paper industry, that they are likely to be significant. The effects include, as examples, stock price turmoil, reduced workforces, and foreign ownership of formerly American-owned assets. Which impacts occur would depend on the responses of the potentially affected firm(s) to the increased costs. Companies that enter bankruptcy or near-bankruptcy are more likely to see their stock prices fall, causing substantial loss of investor value and possibly becoming the target of a hostile takeover by a domestic or foreign company. Recent history of hostile or friendly takeovers shows that the acquiring companies subsequently divested themselves of unproductive assets, closed a number of mills and eliminated over 15,000 jobs, affecting both smaller and larger communities, with the most devastating consequences on the smaller communities. Some companies may downsize some operations without closing any mills, thus potentially causing job losses in communities that depend on the mills directly or indirectly for their economic well-being. The potential job losses associated with the likely firm failure(s) represent an unacceptably large portion of the employment losses associated with this option for the Bleached Papergrade Kraft and Soda subcategory. See DCN 14379, 14382, and 14388 (contained in CBI record). In addition, weaker companies might be forced to sell off blocks of assets, or their corporate existence might be endangered. Companies may choose to close marginal plants to avoid the cost of upgrade or to sell off mills both to avoid the costs of upgrade and to raise capital to upgrade the remaining mills. Closed mills' equipment could be sold to overseas companies, who could initiate low cost pulp or paper production and gain market share from U.S. firms as a result. Foreign companies acquiring U.S. mills might close or alter those mills to gain market share (although such behavior is not necessarily economically efficient). Substituting foreign for domestic production means an additional loss of jobs and income for Americans. See Economic Analysis, Chapter 6 (DCN 14649).

EPA also considered the effects of delaying the implementation of Option B for five years. EPA acknowledges that the uncertainties of the pulp and paper market and the financial circumstances of individual firms make questionable the validity of any assumptions regarding the relative effects of a five-year delay. EPA's evaluation of delaying the implementation of Option B for five years involves consideration of discounting Option B costs for five years, the expected industry price and revenue cycle, and resulting aggregate costs, closures, and firm failures. EPA has determined, due to expected effects of the industry cycle, that deferring the costs of this technology for five years would not appreciably reduce the economic impacts for this subcategory as a whole compared to immediate compliance. See Economic Analysis, Chapter 6 (DCN 14649). For example, EPA found that under the most likely scenario (in which the costs of complying with MACT I are taken into account), the same number of mills (four) would be predicted to close even if implementation of Option B were delayed for five years. Firm failure predictions could not be made for five years hence because the analysis is based on several financial components, each of which may change dramatically and unpredictably in the interim.

Based on the above discussion, EPA concludes that only the selected BAT/PSES technology option—Option A—is economically achievable today for the Bleached Papergrade Kraft and Soda subcategory as a whole. EPA acknowledges that the number of

monthly average limitation would be based on the assumption that a mill would be required to monitor more frequently than once a month. For the reasons set forth in Section VI.B.8.c(4)(b), EPA believes that one monthly monitoring event is sufficient; however, if permitting or pretreatment authorities choose to require more frequent monitoring for furan, they may set monthly average limitations and standards based on their best professional judgment. See, e.g., 40 CFR 430.24(a)(1), footnote b. Today's rule requires mills to monitor for chloroform four times per month (i.e., weekly); therefore, both daily maximum and monthly average limitations are presented.

EPA has also calculated both daily maximum and monthly average limitations for AOX based on Option A, Option B, and TCF bleaching processes. These limitations are presented in Table VI–6. Today's rules require AOX to be monitored every day during the month. See 40 CFR 430.02(a). Annual average limitations for AOX apply only to non-continuous discharges. The alternative TCF effluent limitations apply only to AOX and are expressed as "<ML."

TABLE VI–6.—BLEACHED PAPERGRADE KRAFT AND SODA AOX LIMITATIONS

[Comparison of Options A and B, and Alternative TCF Limitations]

	Option A (kg/kkg)	Option B (kg/kkg)	Alternative TCF limitations (kg/kkg)
Annual Average	0.512	0.208	N/A
Monthly Average Limitation	0.623	0.272	N/A
Daily Maximum Limitation	0.951	0.476	<ML

In order for a fiber line to qualify for the voluntary alternative TCF limitations, the discharger must certify to the permitting authority, as part of its NPDES permit application, that the fiber line bleaches pulp exclusively with TCF bleaching processes. See 40 CFR 430.24(a)(2). (A fiber line that swings between ECF and TCF bleaching processes, for example, would not be eligible for these alternative effluent limitations because dioxin and other chlorinated organic pollutants will be generated at least some of the time and therefore need to be controlled.) EPA decided not to promulgate an additional requirement, as it had proposed, that would have required dischargers to provide monitoring results for three composite bleach plant wastewater samples for dioxin, furan, and the 12 chlorinated phenolic pollutants and three grab samples for chloroform in order to qualify for those limitations. See 58 FR at 66195. EPA believes that the additional proposed requirement is unnecessary because EPA has no reason to believe that a discharger would falsify its TCF certification and because a discharger certifying to TCF processes at a particular fiber line is required in any case to notify the permitting authority if it converts the fiber line in whole or in part to bleaching processes employing chlorine or chlorine-containing compounds. As a result of this notification, the discharger's TCF-based permit limits would need to be modified to reflect the new processes. See, e.g., 40 CFR 122.21(g)(3), 122.21(g)(7), and 122.41(l).

(5) Selection of BAT/PSES Technology Basis. After considering all of the technology options described in the December 1993 proposal and the July 1996 Notice in light of the factors specified in section 304(b)(2)(B) of the Clean Water Act, EPA has selected Option A as its technology basis for the BAT limitations promulgated today for Subpart B. For the reasons set forth below, EPA has also selected Option A as its technology basis for the PSES promulgated today for Subpart B. (For a discussion of PSES options, parameters, and EPA's pass-through analysis, see Section VI.B.5.c.) The record establishes that Option A is technically available. See the Supplemental Technical Development Document, DCN 14487. As discussed in more detail below, EPA has also concluded that it is economically achievable. Further, EPA has determined, for the reasons set forth in Section VII, that Option A has no unacceptable adverse non-water quality environmental impacts. Finally, EPA determined that Option A achieves greater environmental benefits than any other economically achievable technology considered by EPA and, for that reason, also represents the best technology among those considered.

EPA considered the age, size, processes, other engineering factors, and non-water quality environmental impacts pertinent to mills in this subcategory for the purpose of evaluating the BAT and PSES technology options. None of these factors provides a basis for selecting different technologies than EPA has chosen as the basis for today's BAT limitations and PSES.

In order to evaluate economic achievability, EPA concluded that it was appropriate to examine BAT/PSES in view of the MACT requirements also being promulgated today for mills subject to subpart B. As a general matter, when evaluating the economic impact of the candidate BAT/PSES technologies, EPA generally looks at the industry as it exists at the time the decision is made. In this industry, subpart B mills will be subject to significant additional costs as a result of today's MACT I rule. See Section VIII. Therefore, although EPA has not ascribed MACT I costs to the BAT/PSES costs of today's rule, EPA is taking those costs into account when considering the total impact of the various BAT/PSES options on subpart B mills. This is particularly appropriate here because EPA undertook this Cluster rulemaking in order to consider at one time a range of air and water controls and their total economic consequences, among other things. Thus, EPA believes that its BAT/PSES analysis more accurately reflects the actual costs and economic impacts that mills in the Bleached Papergrade Kraft and Soda subcategory will experience. EPA also performed its economic achievability analysis based on the impact of BAT/PSES costs without considering the impact of the MACT I rule on subpart B mills. This analysis did not change EPA's final conclusions. Additionally, in response to comments, and because more information is now available regarding estimated costs, EPA also considered the economic impacts of the MACT II requirements being proposed at this time. The additional consideration of projected MACT II costs also does not alter EPA's determination of economic achievability in this instance.

EPA has determined that the selected BAT/PSES model technology (Option A)

relative to those analytes. See 40 CFR 430.01(i). In the proposal and the July 1996 Notice, EPA referred to the ML limitations as "ND limitations." EPA has changed the terminology, but not the concept, in response to comments that the terminology was potentially misleading. This section provides a discussion of ML limitations. Compliance with the ML limitations is discussed in Section VI.B.8.c(2).

EPA expects that future analytical methods will be more sensitive than today's methods, and their minimum levels will have values that are less than those for the analytical methods identified today in § 430.01(i). However, the analytical methods (and their minimum levels) specified in § 430.01(i) were used to chemically analyze the wastewaters from mills with the BAT, NSPS, PSES, and PSNS model technologies selected today for Subparts B and E. EPA used the data from these chemical analyses to determine that today's ML limitations were technically and economically achievable. EPA is unable to determine, based on the data from these chemical analyses, whether more stringent limitations (that is, limitations with values or associated with minimum levels less than the minimum levels published today in § 430.01) would be technically and economically achievable. To determine whether the technologies are capable of achieving more stringent limitations, EPA would need to evaluate data from chemical analyses using these future more sensitive methods. Those data obviously are not available today. Until any further revision of today's limitations and standards for subparts B and E, the limitations for these analytes will continue to be associated with the minimum levels specified today in Section 430.01(i).

Table VI–4 identifies the analytical methods used to generate the data for today's rule. The minimum levels in this Table are established by the analytical methods and have been validated by use.

TABLE VI–4.—ANALYTICAL METHODS AND MINIMUM LEVELS FOR REGULATED POLLUTANTS

Pollutant	Method	Minimum level
2,3,7,8-TCDD	1613	10 pg/L
2,3,7,8-TCDF	1613	10 pg/L
Trichlorosyringol	1653	2.5 µg/L
3,4,5-trichlorocatechol	1653	5.0 µg/L
3,4,6-trichlorocatechol	1653	5.0 µg/L
3,4,5-trichloroguaiacol	1653	2.5 µg/L
3,4,6-trichloroguaiacol	1653	2.5 µg/L
4,5,6-trichloroguaiacol	1653	2.5 µg/L
2,4,5-trichlorophenol	1653	2.5 µg/L
2,4,6-trichlorophenol	1653	2.5 µg/L
Tetrachlorocatechol	1653	5.0 µg/L
Tetrachloroguaiacol	1653	5.0 µg/L
2,3,4,6-tetrachlorophenol	1653	2.5 µg/L
Pentachlorophenol	1653	5.0 µg/L
AOX	1650	20 µg/L

(d) Limitations. Table VI–5 presents the final effluent limitations for Options A and B for the Bleached Papergrade Kraft and Soda subcategory that are based on in-plant process changes. These limitations are based on data obtained from bleach plant effluent prior to mixing with other mill wastestreams.

TABLE VI–5.—BLEACHED PAPERGRADE KRAFT AND SODA LIMITATIONS COMPARISON OF OPTIONS A AND B

	Daily maximum limitation		Monthly average limitation	
	Option A	Option B	Option A	Option B
TCDD (pg/L)	<ML	<ML	N/A	N/A
TCDF (pg/L)	31.9	31.9	N/A	N/A
Chlorinated Phenolic Pollutants* (µg/L)	<ML	<ML	N/A	N/A
Chloroform (g/kkg)	6.92	6.92	4.14	4.14

*Trichlorosyringol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 3,4,5-trichlorocatechol, 3,4,5-trichloroguaiacol, 3,4,6-trichlorocatechol, 3,4,6-trichloroguaiacol, 4,5,6-trichloroguaiacol, tetrachlorocatechol, tetrachloroguaiacol, 2,3,4,6-tetrachlorophenol, and pentachlorophenol.

ML or Minimum level—the level at which the analytical system gives recognizable signals and an acceptable calibration point. See 40 CFR 430.01(i).

N/A Not applicable.

EPA did not establish monthly average limitations and standards for dioxin and the 12 chlorinated phenolic pollutants because the daily maximum limitations and standards for these pollutants are expressed as less than the Minimum Level (<ML). (The same is true for AOX limitations for TCF processes.) The purpose of a monthly average limitation is to require continuous dischargers to provide better control, on a monthly basis, than required by the daily maximum limitation. However, for these pollutants, today's analytical methods cannot measure below the minimum levels associated with the daily maximum limitations. Thus, even if a permitting or pretreatment authority requires more frequent monitoring for these pollutants than the monthly monitoring frequencies specified in today's rule, see 40 CFR 430.02, monthly average limitations would still be expressed as <ML.

EPA did not establish a monthly average limitation for furan because a

primarily softwood and most of them subsequently bleach the pulp to high brightness (i.e., greater than 88 ISO). Tables presented in DCN 14494 show several statistics for each mill (reflecting the mill characteristics during the sampling period), including furnish, kappa number, kappa factor, brightness, type of wastewater treatment system, and approximate AOX removal in the treatment system. For a discussion of EPA's development of pretreatment standards for AOX, see section VI.B.5.c(6).

Another factor that has contributed to revisions in today's AOX limitations and standards is the adjustment for autocorrelation in the data. See DCN 14496. EPA intended that this adjustment be made to the preliminary AOX limitations presented in the July 1996 Notice; however, comments on that notice stated correctly that this adjustment had been excluded from the calculations. This oversight has been corrected in the calculations of today's final AOX limitations and NSPS.

Since proposal, EPA has gathered additional data in order to establish a final limitation for AOX for TCF bleaching processes. See 40 CFR 430.24(a)(2). EPA sampled at two mills with TCF bleaching processes, one U.S. mill and one European mill. Analytical data from sampling these two mills during periods representative of TCF processes indicate that AOX concentrations were consistently below minimum levels in bleach plant wastewaters. See DCN 14494 and DCN 14488. Therefore, EPA has concluded that TCF bleaching processes are capable of achieving concentrations less than the minimum level for AOX in process wastewaters, whether measured at the bleach plant or after secondary biological treatment, and is setting AOX limitations and standards accordingly for TCF bleaching processes. See 40 CFR 430.24(a)(2).

(iii) Chloroform. EPA proposed a monthly average chloroform limitation of 2.01 g/kkg based on sampling results from one mill that used extended delignification and complete substitution of chlorine dioxide for elemental chlorine, and that did not use hypochlorite during bleaching. Data collected by EPA after proposal indicated that bleach plant loads of chloroform did not differ between mills that used conventional pulping (Option A) and extended delignification (Option B), as long as bleaching was carried out without elemental chlorine or hypochlorite. However, these data indicate that the type of pulp washers used in a mill's bleach plant influence the partitioning of chloroform between the air and effluent. Use of low air flow washers results in less emission of chloroform to the air and greater loads of chloroform in bleach plant effluent than use of high air flow washers. See DCN 14494. In general, modern low air flow washers (such as pressure diffusion) also use less water to accomplish equivalent washing, i.e., they are more efficient than conventional vacuum drum washers (high air flow washers). See DCN 14494, and DCN 14497, Vol. I. Because of their efficient use of water and their potential to reduce non-water quality environmental impacts, EPA encourages industry to use modern low air flow washers. For this reason, EPA developed revised chloroform limitations and standards using only data from mills that use low air flow washers. In the July 1996 Notice, EPA presented a revised bleach plant monthly average chloroform limitation of 2.80 g/kkg. This limitation was developed using data from four mills that did not use elemental chlorine or hypochlorite during bleaching, and that used low air flow bleach plant washers.

EPA received comments that the revised chloroform limitations and standards were not consistently achievable by mills with the process technologies serving as the basis for Options A and B. As a result of these comments, EPA re-evaluated the chloroform limitations and standards presented in the July 1996 Notice.

EPA has revised the long-term average and variability factors used to calculate the chloroform limitations and standards after considering data from five mills that did not use elemental chlorine or hypochlorite during bleaching and that used low air flow bleach plant washers (data from four of these mills were used in the July 1996 Notice). In developing the long-term average, EPA used data from two mills that bleach pulp to a high brightness (88 to 90 ISO). In developing the variability factors, EPA also considered data from the other three mills with low air flow washers to obtain a more realistic estimate of variability associated with operating low air flow washers. Two of these mills bleach pulp to a lower brightness (80 to 85 ISO). EPA believes that the resulting limitations and standards can be met by all well-operated and maintained ECF mills regardless of the type of bleach plant washers used. (EPA's revised bleach plant monthly average chloroform limitation is now 4.14 g/kkg.) The data in the record indicate that it is highly unlikely that a mill employing elemental chlorine or hypochlorite in its bleach plant could comply with the chloroform limitations promulgated in this rule. See DCN 14494.

(iv) COD. As discussed in VI.B.3.d., EPA is reserving limitations for COD at this time.

(b) Changes to Statistical Methodology. After the July 1996 Notice, EPA performed a detailed review of the results of the statistical analyses, the documentation of the statistical methodology, the computer programs, and the data for all of the limitations and standards. As a result of this review, EPA revised the assumptions regarding statistical analysis of data to ensure that long-term averages for TCDF and chloroform were greater than or equal to the minimum level of the analytical methods. EPA made other revisions to the statistical assumptions and the computer programs that resulted in minor changes to the values of the limitations and standards. All of these revisions are identified and described in the Statistical Support Document for the Pulp and Paper Industry: Subpart B, DCN 14496. In the record, EPA has also provided detailed responses to comments about the statistical methodology. See DCN 14497, Vol. VI.

(c) Definition of Limitations and Standards Expressed at Less Than the Minimum Level. In today's rulemaking, EPA is establishing limitations and standards for Subparts B and E for 12 chlorinated phenolic pollutants and dioxin that are expressed as less than the minimum level ("<ML"). (EPA is also expressing today's AOX limitations and standards for TCF processes as "<ML.") The limitations and standards hereafter are referred to as "ML limitations." The "ML" is an abbreviation for the minimum level identified in § 430.01(i) of today's rule for the analytical methods that EPA used to determine the level of pollution reduction achievable through the use of BAT, NSPS, PSES and PSNS model technologies for the 12 chlorinated phenolic pollutants, dioxin, and, for alternative TCF technologies, AOX. (For Subpart E, limitations and standards for furan and AOX are also expressed as "<ML".) EPA intends for mills subject to ML limitations to have pollutant discharges with concentrations less than the minimum levels of the analytical methods specified today in 40 CFR 430.01(i).

In general terms, the ML is the level at which the analytical system gives recognizable signals and an acceptable calibration point. Method 1613 (used for dioxin and furan), Method 1650 (used for AOX), and Method 1653 (used for the chlorinated phenolic pollutants) provide precise definitions of the ML

TABLE VI–3.—BASELINE DISCHARGES AND ESTIMATED REDUCTIONS OF POLLUTANTS FOR BLEACHED PAPERGRADE KRAFT AND SODA MILLS COMPLYING WITH BAT TECHNOLOGY OPTIONS CONSIDERED [a]—Continued

Pollutant parameter	Units	Mid-1995 baseline discharge	Estimated reductions: option A	Estimated reductions: option B	Estimated reductions: TCF
12 Chlorinated phenolic pollutants	kkg/yr	51.7	42.3	44.1	51.7
AOX	kkg/yr	33,300	22,100	27,900	33,300

[a] The TCF calculations assumed that chlorinated pollutants will not be present. For all other calculations, EPA assumed that pollutants reported as "not detected" were present in a concentration equivalent to one-half the minimum level specified in 40 CFR 430.01(i) or one-half of the reported detection limit.

The effluent reductions described and shown above are used in Section VII to estimate reduced human health and environmental risk attributable to today's rules. These estimates also form the basis for estimating monetized benefits in Section VIII.

(4) Development of Limitations. The proposed BAT regulations included limitations for dioxin, furan, 12 chlorinated phenolic pollutants, acetone, chloroform, methyl ethyl ketone (MEK), and methylene chloride (based on BAT process changes); and limitations for color, COD, and AOX (based on BAT process changes and biological wastewater treatment). In today's rule, EPA is promulgating limitations for dioxin, furan, 12 chlorinated phenolic pollutants, chloroform, and AOX. See 40 CFR 430.24(a)(1). As discussed in Section VI.B.3. above, EPA is not promulgating limitations for acetone, MEK, methylene chloride, or color. EPA intends to promulgate effluent limitations guidelines and standards for COD in a later rulemaking.

In addition to the new effluent limitations guidelines and standards for the Bleached Papergrade Kraft and Soda subcategory promulgated today and discussed immediately below, mills in this subcategory continue to be subject to existing limitations and standards for pentachlorophenol and trichlorophenol (now denominated as supplemental limitations and standards). These mills continue to have the opportunity to be exempt from these supplemental limitations and standards if they certify to the permitting or pretreatment authority that they are not using these chemicals as biocides. See 40 CFR 430.24(d).

Except where noted, the following discussion of BAT limitations also applies to EPA's procedures for setting NSPS, PSES, and PSNS for Subpart B.

(a) Performance Data. EPA revised the proposed limitations and standards based on data collected after proposal (see Pulp and Paper Mill Data Available for BAT Limitations Development, DCN 13951) and presented the revisions in the July 1996 Notice. See 61 FR at 36841–42. Today's TCDF, chloroform, and AOX limitations and standards have been further revised since the July 1996 Notice as a result of the selection of data sets used for the long-term averages, variability factors, and limitations. See DCN 14494, 14496, and Record Section 22.5. The rationale for changes in the data set selections is provided immediately below. See DCN 14487.

(i) Dioxin, Furan, and Chlorinated Phenolic Pollutants. For non-TCF mills, EPA had proposed mass-based limitations and standards for furan: in July 1996, EPA presented preliminary revised limitations and standards that were concentration-based. EPA has determined that a limitation on the concentration of furan is a more direct, and hence, a more reasonable measurement of the presence of furan than a mass-based limitation would be. When detected, furan typically is present in the effluent of Subpart B mills that use ECF bleaching at levels at or only slightly above the minimum level specified in the applicable analytical method. In this case, the value of mass-based limitations and standards are predominantly influenced by the variability in the bleach plant effluent flow rate and thus may not be a consistent and reliable measurement of the presence of furan. Since the July 1996 Notice, EPA has used one additional data set to calculate the furan limitation; this data set was from an Option B bleach line with a typical unbleached kappa number of 20. Because of this change and because of changes to assumptions used in the statistical analysis and changes to the computer programs, see Section VI.B.5.a(4)(b), the value of the furan limitations and standards has changed slightly from that presented in the July 1996 Notice.

EPA has made no changes to the limitations for dioxin and the 12 chlorinated phenolic pollutants presented in the July 1996 Notice. Upon further review after the July 1996 Notice, EPA discovered that some sample-specific minimum levels for some chlorinated phenolic pollutants were incorrectly entered into the databases. These values have been corrected. See DCN 14496, and Record Section 22.5.

EPA has determined that TCF bleaching processes do not result in the generation of dioxin, furan, chloroform or chlorinated phenolic pollutants. For this reason, EPA is not setting limitations for these pollutants as part of the voluntary alternative BAT limitations and standards promulgated today for mills that certify to the use of TCF bleaching processes. See 40 CFR 430.24(a)(2).

(ii) AOX. In the July 1996 Notice, EPA presented preliminary revised AOX BAT limitations and NSPS for non-TCF mills.

In the July 1996 Notice, EPA indicated that although it was presenting revised limitations and standards it would continue to analyze data from two mills representing the performance of BAT Option A. These data were submitted to EPA by the industry without sufficient time for the results to be reflected in the preliminary limitations and standards presented in the July 1996 Notice.

Commenters encouraged EPA to use the newly acquired data for the two Option A mills, but also questioned why certain other data in the record were not used to develop the preliminary revised AOX limitations and standards. EPA continued its analysis of the new data and obtained new information about mill operations associated with the other data addressed by comments. As a result, EPA added data from the two Option A mills to the data used to characterize the performance of Option A and added data from two other mills to the data used to characterize the performance of Option B. EPA ultimately used data from six mills to develop the AOX limitations for each option, including at least one mill for each option for which long-term monitoring data (for about one and a half years) were available. The mills used to represent each option pulp

TABLE VI–1.—TOTAL BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY CAPITAL AND ENGINEERING O&M COSTS FOR BAT, PSES AND BMPs—Continued

[1995 dollars]

	Final cost estimates	
	Option A	Option B
Engineering O&M (S million/yr)	113	2.02

For both Option A and Option B, EPA excluded costs for the use of dioxin- and furan-precursor-free defoamers, adequate wood chip size control, and efficient biological wastewater treatment in its estimates of the costs of the final BAT technology options. These processes represent current industry practice. See the Supplemental Technical Development Document, DCN 14487. However, EPA's estimate of the costs of BAT also includes a general allowance for increased technical supervision and process engineering that could be used, in part, to design and implement a chip quality control program or to improve operation of existing biological wastewater treatment. In addition, any mill not currently using dioxin- and furan-precursor-free defoamers can use them without incurring significant costs. See the Supplemental Technical Development Document, DCN 14487. EPA evaluated the costs of retrofitting U.S. bleached papergrade kraft and soda mills to TCF bleaching to provide perspective on the likelihood of TCF processes being found to be economically achievable once they are shown to be technically available. EPA investigated the costs of two TCF bleach sequences. These bleach sequences included all common elements that are part of Option A and Option B (adequate chip thickness control, closed brownstock pulp screen room operation, use of dioxin- and furan-precursor-free defoamers, effective brownstock washing, elimination of hypochlorite, oxygen- and peroxide-enhanced extraction, use of strategies to minimize kappa factor and dioxin- and furan-precursors in brown stock pulp, high-shear mixing during bleaching, and efficient biological wastewater treatment). The bleaching sequences also include medium-consistency oxygen delignification. One TCF bleach sequence was based on peroxide bleaching (OQPP) and the other was based on ozone and peroxide bleaching ($OZE_{op}QPZP$). EPA's final cost estimates for TCF bleach sequences for the total Bleached Papergrade Kraft and Soda subcategory (BAT, PSES, and BMPs) are as follows. See the Supplemental Technical Development Document, DCN 14487.

TABLE VI–2.—TOTAL BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY CAPITAL AND ENGINEERING O&M COSTS OF TCF OPTIONS FOR BAT, PSES, AND BMP

[1995 dollars]

	Estimated costs	
	Peroxide-TCF (OQPP)	Ozone-TCF ($OZE_{op}QPZP$)
Capital (S million) ...	3,090	5,630
Engineering O&M (Smillion/yr)	660	849

(3) Effluent Reductions Associated with Technology Options Considered. The Agency estimated the effluent reductions for the Bleached Papergrade Kraft and Soda subcategory that will result from the BAT options it analyzed. These estimated reductions are summarized in this section and are discussed in more detail in the Supplemental Technical Development Document, DCN 14487.

As discussed in the July 1996 Notice, EPA recalculated the effluent reduction benefits using a new baseline of mid-1995. See 61 FR at 36840. In addition, EPA revised and simplified the methodology used to estimate that baseline (using a model mill approach). Id. EPA also used a second approach to estimate the effluent loads of dioxin and furan using data for individual mills as compiled in the NCASI 1994 Dioxin Profile (see DCN 13764). The baseline calculation methodology revisions, along with details of the effluent reduction calculations, are described in record section 22.6.

As explained in DCN 14487, after July 1996, EPA again recalculated the effluent reductions. The baseline remains mid-1995. As before, EPA used one-half of the minimum level specified in 40 CFR 430.01(i) or one-half of the reported detection limits to estimate effluent discharge loadings when pollutant concentrations were below minimum levels. EPA considers this a reasonable approach for estimating mass loads because the actual concentration of the sample is too small to measure by current analytical methods, but is between zero and the detection limit. Furthermore, ECF processes use and generate chlorinated compounds, so EPA expects that chlorinated compounds were present (i.e., with a concentration value greater than zero) in the samples. Thus, EPA believes that it is appropriate to substitute a value at the midpoint between zero and the detection limit (i.e., the upper bound of the concentration in the sample) for ECF mills. The methodology was modified slightly for mills that use TCF bleaching sequences. Because chlorinated compounds are not used and are not generated by TCF processes, EPA assumed that TCF mills would discharge zero kilograms per year of AOX and the individual chlorinated pollutants rather than an amount equivalent to one-half the minimum level or detection limit multiplied by an appropriate production-normalized flow rate.

EPA's revised baselines, which were again found to be comparable to NCASI's industry-wide estimates for dioxin and furan, were used to calculate effluent reductions summarized in Table VI–3. The table shows the estimated baseline and the reduction from baseline expected if the option were implemented by all the existing direct discharging mills in the subcategory (i.e., those mills to which BAT will apply). The slightly greater removals of the bleach plant pollutants by Option B are a result of the reduced bleach plant flow found at mills employing Option B technology.

TABLE VI–3.—BASELINE DISCHARGES AND ESTIMATED REDUCTIONS OF POLLUTANTS FOR BLEACHED PAPERGRADE KRAFT AND SODA MILLS COMPLYING WITH BAT TECHNOLOGY OPTIONS CONSIDERED [a]

Pollutant parameter	Units	Mid-1995 baseline discharge	Estimated reductions: option A	Estimated reductions: option B	Estimated reductions: TCF
2,3,7,8–TCDD	g/yr	14.0	9.88	10.8	14.0
2,3,7,8–TCDF	g/yr	105	98.0	99.5	105
Chloroform	kkg/yr	43.6	35.5	35.5	43.6

roposal in many ways but retained two najor assumptions: (1) Mills would .ontinue to make the same quantities .nd grades of pulp; and (2) mills already ısing the technology bases for the BAT .echnology options generally would ncur only monitoring costs to comply vith regulations based on those options. See the Supplemental Technical Development Document, DCN 14487.

EPA received comments that it severely underestimated the costs of its proposed option (now identified as Option B). Commenters contended that this underestimate derived in large part from EPA's underestimate of the increase in load of black liquor solids that will be routed to the recovery system after installation of oxygen delignification, closing screen rooms, improving brownstock washing, and recovering additional pulping liquors through a best management practices (BMP) program. In addition to underestimating the increase in load, commenters claimed that EPA also underestimated the costs for recovery boilers to accommodate the increased load. Commenters asserted that most mills are recovery boiler-limited and, to employ the proposed BAT, would have to install new recovery boilers at a very high cost.

In response to these and other comments on the proposed rule, EPA and NCASI undertook several data gathering efforts aimed specifically at obtaining information to improve EPA's cost estimates. In late 1994, NCASI distributed a survey to collect information about recovery furnace capacity and a second survey about the implementation and cost of pulping liquor spill prevention and control programs (i.e., BMPs).

Based on this and other information, EPA concluded that there is no foreseeable set of circumstances where implementation of either Option A or B would force a mill to replace or even rebuild an existing recovery boiler. Therefore, EPA strongly disagrees with comments that it severely underestimated the costs of what is now known as Option B. Based on data reported in the NCASI survey, almost 60 percent of the recovery boilers operated by the industry have sufficient capacity to accommodate the increased loads that would result from implementing either Option A or B, in combination with the BMP program promulgated today. At most of the remaining 40 percent of the recovery boilers, any increased thermal load can be accommodated through improved boiler operation requiring no capital expenditures, by increasing pulp yield by using anthraquinone, or by reducing the caloric value of the black liquor burned in the boiler by using oxygen-black liquor oxidation. EPA estimates that only one boiler operated by a bleached papergrade kraft and soda mill would need to be upgraded regardless which option is selected as the technology basis for today's rule. The cost of the upgrade is small in comparison to the cost of building or replacing a boiler. See the Supplemental Technical Development Document, DCN 14487, and Analysis of Impacts of BAT Options on the Kraft Recovery Cycle, DCN 14490.

For the purposes of estimating the costs of Option B, EPA estimated costs for implementation of oxygen delignification (OD) based on the record as a whole that shows that OD does not have an impact on yield of bleached pulp. Although some stakeholders asserted that EPA's yield estimates were in error, the entire record on yield supports EPA's basis for estimating the cost of BAT Option B. Some commenters asserted that EPA overestimated the costs for Option B presented in the July 1996 Notice by failing to account for the increase in yield that would result from implementation of OD. Industry commenters asserted that OD would result in reduced bleached pulp yields. In response to these comments, EPA reviewed all available literature reports and contacted companies operating mills with OD systems. Although some laboratory and modeling analyses indicate that OD following a modified kraft cooking could increase yields by one to two percent, EPA found no documentation that full-scale OD systems are being operated in this manner. One of the two U.S. companies that operate more mills with OD systems than any other has found no statistical difference in yield measured at the end of the bleach plant with the installation of OD. The other company offered no specific data on yield, but has seen no substantial impact on recovery boilers, indicating that no appreciable change in yield has been experienced. See DCN 14491.

EPA also collected additional information about the costs of process equipment and updated its information about the costs of chemicals, wood, energy, and labor (record sections 21.1.2 to 21.1.6). EPA used this information to revise the cost model spreadsheet. See the Memorandum: Costing Revisions Made Since Publication of July 15, 1996 Notice of Data Availability, DCN 14493, and BAT Cost Model Support Document, DCN 13953. These changes are discussed immediately below.

(ii) Major Changes Since Proposal. Among other changes since proposal, EPA's cost estimates for Option B now include the costs for new or incremental increases in OD systems for mills unable to achieve the kappa numbers used to characterize the Option B technology. In its July 1996 Notice, EPA described this change and additional changes to the cost model. See 61 FR at 36840–41 and BAT Cost Model Support Document, DCN 13953.

In response to comments on the July 1996 Notice, EPA corrected mill-specific information and made additional changes to the cost model. See the Memorandum: Costing Revisions Made Since Publication of July 15, 1996 Notice of Availability, DCN 14493. Among those changes was a correction of errors in the costs of caustic and hydrogen peroxide that resulted from a unit conversion error (this error carried through the proposal and the Notice cost estimates). As a result of the changes, including the correction made to the cost of caustic and hydrogen peroxide, the net engineering operating and maintenance (O&M) costs for Option B for all mills in the Bleached Papergrade Kraft and Soda subcategory increased from the savings of $7 million/year presented in the July 1996 Notice, to the $2 million/year increased costs estimated today. See the Supplemental Technical Development Document, DCN 14487.

For the purpose of estimating the cost of the regulations, EPA excluded the costs of process changes that were either completed or under construction as of mid-1995. EPA incorrectly stated in the July 1996 Notice that costs for process changes committed to but not yet under construction as of mid-1995 were also excluded from the cost of this regulation. These latter costs have been included. See the Supplemental Technical Development Document, DCN 14487.

(iii) Final Cost Estimates of the Options Considered. EPA's final cost estimates for Option A and B for the Bleached Papergrade Kraft and Soda subcategory (BAT, PSES, and BMPs) follow in Table VI–1.

TABLE VI–1.—TOTAL BLEACHED PAPERGRADE KRAFT AND SODA SUBCATEGORY CAPITAL AND ENGINEERING O&M COSTS FOR BAT, PSES AND BMPS

[1995 dollars]

	Final cost estimates	
	Option A	Option B
Capital ($ million)	966	2,130

furnish averaged 0.17 and all were less than 0.2. At the mills whose data were used to characterize Option B performance, kappa factors for softwood furnish averaged 0.23, with all but one at less than 0.21. Well-operated and maintained mills using comparable kappa factors will be capable of achieving limitations corresponding to Option A or B, respectively. Based on certain site-specific factors, such as furnish, some mills will be capable of achieving today's limitations with higher kappa factors. There are numerous strategies a mill can employ to minimize its kappa factor. See the Supplemental Technical Development Document, DCN 14487.

In addition, there are numerous strategies a mill can employ to minimize precursors of dioxin and furan contained in brownstock pulp. These strategies include, but are not limited to, improved brownstock washing, improved screening to produce cleaner pulp, eliminating compression wood (knots) from brownstock pulp, and using only precursor-free condensates in brownstock washers. The strategy or strategies appropriate for the production of a given pulp depend on the raw material (wood species and the form it takes, i.e., chips, waste wood, or sawdust), process equipment, and the specifications of the final pulp product (brightness, cleanliness, strength, absorbency, and others). For a discussion of these strategies, see the Supplemental Technical Development Document, DCN 14487.

(c) Totally Chlorine-Free (TCF) Bleaching Option Evaluated. The Agency received many comments that it should continue to investigate TCF bleaching because dioxin and furan are not generated at any level with TCF bleaching, thus assuring that these pollutants are not released to the environment. The Agency conducted two sampling programs at the one U.S. mill that produces TCF bleached kraft softwood pulp. EPA collected samples of bleach plant filtrates but could not collect samples of treated effluent because the mill does not employ secondary treatment. The Agency also conducted a sampling program at a Nordic mill that produces hardwood and softwood kraft pulp on two bleach lines that alternate between ECF and TCF bleaching. Samples collected at this mill could not be used to characterize treated TCF bleaching effluents because they are combined with ECF bleaching effluents for treatment.

Both of the sampled TCF softwood fiber lines employed oxygen delignification followed by multiple stages of peroxide bleaching. The Nordic mill also uses extended cooking, and was able to reduce the lignin content of unbleached pulp to a very low kappa number of four. At the time of sampling, this mill bleached pulp to a brightness of 83 ISO. The U.S. mill's unbleached pulp kappa number was between seven and ten. Bleached pulp brightness was approximately 79 during the first sampling episode at the U.S. mill, but by the time of the second sampling episode, the mill had improved its process to achieve a pulp brightness of 83 ISO.

At both mills, chloroform or chlorinated phenolic pollutants were not detected in samples collected by EPA. At the U.S. mill, dioxin, furan, and AOX were not detected above the analytical minimum level during sampling fully representative of TCF operations. The average bleach plant AOX loading measured by EPA at the Nordic mill was 0.002 kg/ADMT (compared to a long-term average of 0.51 kg/ADMT for Option A). EPA's dioxin sampling results for the Nordic mill were surprising. Dioxin was detected at a concentration just above the minimum level in one sample of combined bleach plant filtrate, when the mill was bleaching without the use of chlorine or any chlorinated compounds. Furan was not detected. EPA believes the dioxin results were unique to the operation of this mill and does not conclude that TCF bleaching generates dioxin.

Neither of the two sampled mills produced softwood pulp at full market brightness. In the last three years, however, several non-U.S. mills have reported the production of TCF softwood kraft pulp at full market brightness. EPA's data are insufficient to confirm that TCF processes are technically available for the full range of market products currently served by ECF processes. See DCN 14497, Vol. I. Further, EPA's data are insufficient to define a segment of the Bleached Papergrade Kraft and Soda subcategory where TCF processing is known to be technically feasible and thus could be the basis of compulsory BAT limitations. Despite these impediments, EPA believes that the progress being made in TCF process development is substantial, and that additional data may demonstrate that TCF processes are indeed available for the full range of market products. For this reason, EPA also evaluated the performance of TCF mills in order to establish alternative limitations for mills that voluntarily choose to employ TCF processes. See Section VI.B.5.a(4).

(2) Costs of Technology Options Considered. The Agency estimated the cost for the Bleached Papergrade Kraft and Soda subcategory to achieve each of the technology options considered today. These estimated costs are summarized in this section and are discussed in more detail in several technical support documents. (See the BAT Cost Model Support Document, DCN 13953; Memorandum: Costing Revisions Made Since Publication of July 15, 1996 Notice of Data Availability, DCN 14493; Supplemental Technical Development Document, DCN 14487; Analysis of Impacts of BAT Options on the Kraft Recovery Cycle, DCN 14490; Effect of Oxygen Delignification on Yield of the Bleached Papergrade Kraft Pulp Manufacturing Process, DCN 14491; and the Technical Support Document for Best Management Practices for Spent Pulping Liquors Management, Spill Prevention, and Control, DCN 14489.) (For a discussion of the costs associated with the Voluntary Advanced Technology Incentives Program BAT technologies, see the Technical Support Document, DCN 14488.) All cost estimates in this section are expressed in 1995 dollars. The cost components reported in this section are engineering estimates of the cost of purchasing and installing equipment and the annual operating and maintenance costs associated with that equipment. See Section VIII of this preamble for a discussion of the costs used in the economic impact analysis.

Because EPA considers efficient biological wastewater treatment to be current industry practice, EPA has not included its costs in the estimates of costs of BAT. See the Supplemental Technical Development Document, DCN 14487. As discussed in Section VI.B.5.c. below, for PSES for the Bleached Papergrade Kraft and Soda subcategory, EPA evaluated the same process change technology options that it evaluated for BAT, with the exception of biological wastewater treatment. As a result, EPA used the same cost model to estimate the costs of PSES and BAT. Set forth below are the total costs for all mills in the subcategory (direct and indirect dischargers) to complete the process changes that are the technology bases for the options considered for BAT and PSES. The costs of complying with today's BMP requirements are also included.

(i) Additional Data Gathering and Analysis Since Proposal. EPA updated its database of mill process information by reviewing comments on the proposed rule and the July 15, 1996 Notice, by examining information from publicly available sources as well as information gathered by AF&PA and NCASI, and by contacting mills directly. The Agency revised the cost estimates it made at

with elimination of hypochlorite and complete (100 percent) substitution of chlorine dioxide for elemental chlorine as the key process technologies. Complete substitution of chlorine dioxide for elemental chlorine and elimination of hypochlorite is known as elemental chlorine-free (ECF) bleaching. EPA's definition of ECF bleaching includes high shear mixing to ensure adequate mixing of pulp and bleaching chemicals, as well as other technology elements.

EPA proposed this option because it believed, based on the record at the time, that this combination of technologies was both available and economically achievable and that no other available and economically achievable option resulted in greater effluent reductions. See 58 FR at 66110. In the July 1996 Notice, EPA identified this technology option as Option B. See 61 FR at 36838.

EPA also considered at proposal another option based on conventional pulping—complete substitution of chlorine dioxide for elemental chlorine, but without the use of oxygen delignification or extended cooking (i.e., conventional pulping). See 58 FR at 66111. At the time of proposal, EPA was unable to fully analyze this alternative because very limited performance data were available from mills using this technology. Therefore, EPA solicited further data and comments on this option, Id. In the July 1996 Notice, EPA published preliminary findings regarding this option, which it identified as Option A. See 61 FR at 36838–42.

The Agency also considered a totally chlorine-free (TCF) option for the Bleached Papergrade Kraft and Soda subcategory at proposal. See 58 FR at 66109. TCF bleaching processes are pulp bleaching operations that are performed without the use of chlorine, sodium hypochlorite, calcium hypochlorite, chlorine dioxide, chlorine monoxide, or any other chlorine-containing compound. EPA concluded that TCF was not an available pollution prevention technology at the time of proposal because of limited worldwide experience with this process and a lack of data for TCF bleaching of softwood to full market brightness. To encourage continuing innovation in the development of processes to reduce or eliminate the discharge of pollutants from the Bleached Papergrade Kraft and Soda subcategory, however, EPA proposed alternative BAT limits for mills adopting TCF processes.

In the July 1996 Notice, EPA also described an incentives program that it was considering for Subpart B mills in order to promote more widespread use of advanced pollution prevention technologies. See 61 FR at 36849–58. As part of this voluntary program, EPA proposed to establish up to three sets of alternative BAT limitations that would complement the compulsory baseline BAT requirements. EPA identified the proposed alternative BAT limitations as Tier I, Tier II, and Tier III BAT limitations. See 61 FR at 36850. EPA considered basing Tier I limits on BAT Option B technology (if Option A were chosen as the basis for the baseline BAT limitations). The Tier II and Tier III limitations, in turn, would be based on technologies and processes that EPA expected to achieve substantial reductions in pulping area condensate, evaporator condensate, and bleach plant wastewater flow.

(b) Final ECF Options Evaluated. For this final rule, EPA considered two ECF technology options—Option A and Option B—as the basis for BAT effluent limitations. Option A consists of conventional pulping followed by complete substitution of chlorine dioxide for elemental chlorine, as well as the following nine elements:

(i) Adequate chip thickness control;

(ii) Closed brownstock pulp screen room operation, such that screening filtrates are returned to the recovery cycle;

(iii) Use of dioxin- and furan-precursor-free defoamers (i.e., water-based defoamers or defoamers made with precursor-free oils);

(iv) Effective brownstock washing, i.e., washing that achieves a soda loss of less than or equal to 10 kg Na_2SO_4 per ADMT of pulp (equivalent to approximately 99 percent recovery of pulping chemicals from the pulp);

(v) Elimination of hypochlorite, i.e., replacement of hypochlorite with equivalent bleaching power in the form of additions of peroxide and/or oxygen to the first extraction stage and/or additional chlorine dioxide in final brightening stages;

(vi) Oxygen- and peroxide-enhanced extraction, which allows elimination of hypochlorite and/or use of a lower kappa factor in the first bleaching stage;

(vii) Use of strategies to minimize kappa factor and dioxin- and furan-precursors in brownstock pulp;

(viii) High shear mixing during bleaching to ensure adequate mixing of pulp and bleaching chemicals; and

(ix) Efficient biological wastewater treatment, achieving removal of approximately 90 percent or more of influent BOD_5. These elements are discussed in detail in the Supplemental Technical Development Document, DCN 14487. Option B is identical to Option A, with the addition of extended delignification (oxygen delignification and/or extended cooking). EPA also considered a TCF option, see subsection (c) immediately below, and, in the context of the Voluntary Advanced Technology Incentives Program, three sets of voluntary alternative BAT limitations. See Section IX.A.

In a slight change from the definition of the proposed BAT option, EPA has defined Option B not only in terms of the presence of extended delignification technology (i.e., oxygen delignification or extended cooking) but also by the pre-bleaching kappa number achieved by extended delignification. Kappa number is the measure of lignin content in unbleached pulp and is commonly used by the industry. Many researchers have shown (and EPA has confirmed) strong correlations between the kappa number of the pulp entering the first stage of bleaching and the bleach plant effluent loads of AOX and COD. See DCN 14497, Vol. I. EPA concluded that merely employing extended delignification technologies, without reducing the unbleached pulp kappa number, is not sufficient to achieve the low effluent loadings of AOX and COD characteristic of Option B. Therefore, EPA has redefined Option B as ECF with extended delignification resulting in a kappa number at or below 20 for softwoods and below 13 for hardwoods (see the Supplemental Technical Development Document, DCN 14487). EPA found that these kappa numbers are achievable by virtually all mills that currently have installed and are effectively operating extended delignification technology.

As part of the nine elements common to both Option A and Option B, EPA has included strategies for minimizing kappa factor and dioxin- and furan-precursors in brownstock pulp. These strategies are part of Options A and B because EPA has determined that they minimize the generation of dioxin, furan, and AOX and, hence, are part of the model process sequence to achieve those limitations. See 61 FR at 36848 and the Supplemental Technical Development Document, DCN 14487.

Kappa factor, also known as active chlorine multiple, is the ratio of chlorine bleaching power to the pulp kappa number. (The kappa factor is different from the kappa number discussed above.) The kappa factor used on a particular bleach line depends on the fiber furnish, final product specifications, pre-bleaching processes employed, and optimization of bleaching costs. At the mills whose data were used to characterize Option A performance, kappa factors for softwood

the method that the laboratory must take to break the emulsion. However, EPA does not wish to impose such a requirement on laboratories in the event that a future sample is encountered that produces an emulsion that cannot be broken. If all efforts to break the emulsion fail, Method 1653 allows the use of a dilute aliquot. For more discussion, see Comment Response Document, Vol. VII, DCN 14497.

d. Other Methods. In addition to the methods promulgated today, the effluent limitations guidelines and standards also call for the use of Method 1613 (for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and 2,3,7,8-tetrachlorodibenzofuran (TCDF)) and any of the approved methods for chloroform to monitor compliance. These methods are discussed below.

(1) Method 1613: CDDs and CDFs by HRGC/HRMS

Method 1613 uses isotope dilution and high-resolution gas chromatography combined with high-resolution mass spectrometry (HRGC/HRMS) for separation and detection of 17 tetra- through octa-substituted dibenzo-p-dioxin and dibenzofuran isomers and congeners that are chlorinated at the 2, 3, 7, and 8 positions. Separate procedures are available for the determination of these analytes in water and solid matrices. In the procedure, a 1–L sample is passed through a 0.45-μ glass fiber filter. The filter is extracted with toluene in a Soxhlet/Dean-Stark (SDS) extractor. The aqueous filtrate is extracted with methylene chloride in a separatory funnel. Extracts from the SDS and separatory funnel extractions are combined and concentrated. To remove interferences, the combined, concentrated extract is cleaned up using various combinations of acid and base washes, acidic and basic silica gel, gel permeation chromatography (GPC), high-performance liquid chromatography (HPLC), and activated carbon. The cleaned up extract is concentrated to 20 μL and a 1–2 μL aliquot is injected into the HRGC/HRMS.

The MDL determined for TCDD is 4.4 part-per-quadrillion (ppq). Minimum levels for Method 1613 are 10 ppq for TCDD and TCDF. These MLs have been validated through an interlaboratory study and by use in the analysis of mill effluents.

EPA recently promulgated Method 1613 for the determination of CDDs and CDFs at 40 CFR 136, Appendix A in a final rule published on September 15, 1997 (62 FR 48394). Of the 17 congeners that may be measured with this method, only TCDD and TCDF are regulated under this final rule. Method 1613 was first proposed for general use in compliance monitoring and for other purposes at 40 CFR part 136 on February 7, 1991 (56 FR 5090) and was proposed for use in pulp and paper industry wastewaters at 40 CFR part 430 on December 17, 1993 (58 FR 66078). EPA received extensive comments and suggestions on both proposals of Method 1613; in several cases, the same set of comments was submitted. EPA updated the final Method 1613 based on suggestions and comments received on the original proposal (56 FR 5090) and on the proposal of Method 1613 for use at 40 CFR part 430 (58 FR 66078). In the docket supporting promulgation of Method 1613, EPA provided a listing of detailed comments received on both proposals of Method 1613, along with detailed responses to all of those comments. Because Method 1613 was promulgated in a final rule prior to promulgation of today's final rule, and because EPA received comments and provided responses in support of that final rule, EPA is not promulgating Method 1613 as part of today's final rule. See the final rule promulgating Method 1613 (62 FR 48394) for all information concerning that method.

(2) Method 1624: Volatiles by Purge-and-Trap and Isotope Dilution GC/MS

Method 1624 is used for the determination of volatile pollutants in water and wastewater. It employs a gas chromatograph coupled to a mass spectrometer (GC/MS) to separate and quantify volatile pollutants. Detected pollutants are quantified by isotope dilution. Samples of water or solids suspended in water are purged of volatile organic pollutants by a stream of inert gas into the gaseous phase where they are concentrated onto a trap. Subsequent heating of the trap introduces the concentrated volatile organics into a GC/MS for separation and quantification.

With no interferences present, minimum levels of 10–50 μg/L can be achieved, depending on the specific pollutant. For chloroform, the minimum level is 10 μg/L. This minimum level has been validated by use.

When EPA initially proposed today's rule, it proposed to regulate four volatile organic pollutants. Method 1624, Revision C was proposed for monitoring the presence of these pollutants in effluent discharges. Revision C contained updates and improvements to Method 1624, Revision B, which was promulgated October 26, 1984 (49 FR 43234).

In today's final rule, EPA is regulating only one of the originally proposed volatile pollutants (chloroform); this pollutant can be measured by already-approved EPA Methods 601, 624, and 1624B and Standard Methods 6210B and 6230B. Therefore, EPA has not included Method 1624C in today's final rule and has not formally addressed comments concerning Method 1624C. EPA will consider comments on Method 1624C when this version of the method is promulgated for general use at 40 CFR 136 or when the method is further revised.

(3) Other Issues Concerning Analytical Methods Promulgated in Today's Final Rule

The overall comments received from the regulated industry and others provide suggestions for method improvement but, in some cases, question EPA's approach to technical issues in the methods and the handling of data. For example, commenters suggested that quality control tests be performed at the minimum level (ML), that a 3-point calibration should be used for labeled compounds in isotope dilution methods, and that additional QC tests should be required. Commenters also stated that all methods must be subjected to interlaboratory validation, and that the compliance monitoring detection limit (CMDL) and compliance monitoring quantitation limit (CMQL) should be used in place of EPA's method detection limit (MDL) and ML, respectively. EPA responded to these suggestions by providing specific reasons why they are inconsistent with the provisions in other methods, are more extensive than required to assure reliable results, or that they would not substantively alter the conclusions of studies and data gathering used to support this final rule. The detailed responses to these issues are in the record for this rule.

5. Bleached Papergrade Kraft and Soda Subcategory

a. BAT. (1) Technology Options Considered.

(a) Options Proposed. The Agency considered many combinations of pollution prevention technologies as regulatory options to reduce the discharge of toxic and nonconventional pollutants from bleached papergrade kraft and soda mills. These options are discussed in the proposal and the Notice of Availability published on July 15, 1996. See 58 FR at 66109–11 and 61 FR at 36838–39, 36848. Five different options were presented in the proposal.

The Agency proposed BAT effluent limitations guidelines based on an option that included the use of oxygen delignification or extended cooking

Since proposal, EPA has made changes to Method 1650 to improve the ease of use and the reliability of this method. These changes are reflected in the version of Method 1650 being promulgated today and they largely reflect comments and suggestions made following proposal of the method. In response to comments, EPA made several changes to Method 1650, including: adjustment of the breakthrough specification to 25 percent based on recent data; allowance of a 100- or 25-mL adsorption volume, provided the sensitivity requirements in the method are met; provision of greater flexibility in allowable glassware sizes; use of 100-mL volumes of standards for calibration and other purposes to conserve reagents; use of only 2-mm columns to make the column procedure more reproducible; adjustment of the QC acceptance criteria based on an industry interlaboratory method validation study; and the addition of a minimum integration time of 10 minutes to assure that all AOX is measured. In addition, the format of the method has been modified to reflect the standardized format recommended by EPA's Environmental Monitoring Management Council (EMMC). For a more detailed discussion of the changes made to Method 1650 since proposal, see DCN 14497, Vol. VII.

EPA disagreed with several comments on EPA's proposed Method 1650 and therefore did not make the changes suggested by commenters. In particular, EPA disagrees that the method detection limit (MDL) should be increased to 20 µg/L to allow for blank contamination. In EPA's view, blank contamination can be controlled to levels well below 20 µg/L. EPA also disagrees that it should eliminate Section 8.1.2 of the proposed method. (Section 8.1.2 contained provisions for flexibility.) EPA has received a large number of requests that analytical methods be "performance-based," and has attempted to implement the means for allowing changes in Section 8.1.2 (Section 9.1.2 in the version of Method 1650 being promulgated today). Under Section 8.1.2, the laboratory can make minor modifications to Method 1650 provided that the laboratory performs all quality control (QC) tests and meets all QC acceptance criteria. In addition, contrary to a suggestion from a commenter, EPA has not included examples of cell maintenance in Method 1650 because EPA believes that analysts who maintain the coulometric cell must be familiar with the cell maintenance procedures provided by the instrument manufacturer. For more information on these issues, see DCN 14497, Vol. VII.

(2) Method 1653: Chlorophenolics by In-Situ Derivatization and Isotope Dilution GC/MS

Method 1653 can be used to measure chlorinated phenolic compounds in water and wastewater amenable to *in situ* acetylation, extraction, and determination by HRGC combined with low-resolution mass spectrometry (LRMS). In this method, chlorophenolics are derivatized *in situ* to form acetic acid phenolates that are extracted with hexane, concentrated, and injected into the HRGC/LRMS where separation and detection occurs.

EPA studies have demonstrated MDLs of 0.09–1.39 µg/L for chlorophenolics in water. Based on these MDLs and on calibration of the GCMS instrument, minimum levels have been determined for the 12 chlorinated phenolics in today's rule. These minimum levels of 2.5 or 5.0 µg/L depend on the specific compound and have been validated in single laboratory validation studies and by use in data gathering for today's final rule. All laboratories that used Method 1653 in the data gathering effort calibrated their instruments at the ML.

Since proposal, EPA has made changes to Method 1653 to improve the reliability of the method and to lower costs of measurements. These changes are incorporated into the version of the method being promulgated today; they largely reflect comments and suggestions made following proposal of the method.

In response to comments, EPA made several specific changes to Method 1653, the most significant of which are as follows: lowering the spike level of the labeled compounds to reduce interferences with trace levels of the analytes of interest and to lower the cost of labeled compounds; specifying more appropriate solvents for the analytical standards containing labeled and native analytes; requiring laboratories to add the labeled compounds to the sample prior to pH adjustment; restating the quality control acceptance criteria for recovery in terms of percent instead of concentration; and reducing method flexibility in certain critical areas. In addition, as with Method 1650, the method has been revised into the standardized EMMC format.

EPA disagreed with several comments on EPA's proposed Method 1653 and therefore did not make changes suggested by commenters. EPA received comments that Method 1653 has not been validated adequately. EPA disagrees. Method 1653 has been validated in multiple single-laboratory method validation studies and extensively validated in field studies for this final rule. EPA believes that these extensive studies are more than adequate to validate Method 1653 for use in data gathering to support this final rule and for use in monitoring under this final rule. EPA also disagrees with comments that Method 1653 is inadequate for chlorocatechols. EPA believes that Method 1653 provides more reliable data for catechols and the other chlorophenolics than any other method available, and the commenter provided no suggestions for how Method 1653 could be improved for determination of chlorocatechols. EPA has, therefore, kept chlorocatechols in Method 1653. EPA also disagrees with comments that initial precision and recovery (IPR) and ongoing precision and recovery (OPR) tests should be replaced with initial calibration (ICAL) and calibration verification (VER) tests. (The ICAL and IPR are different in both form and function. The calibration test is for calibrating the analytical system while the IPR test is conducted to check performance. The OPR and VER tests are the same; only the terminology is different. EPA has retained use of the OPR terminology to be consistent with other methods.) EPA also disagrees with comments that use of labeled compounds is not worth the benefit and that all phenols and guaiacols should be quantitated against 3,4,5-trichlorophenol. EPA believes that data gathered to support today's final rule and in other studies demonstrate that isotope dilution provides the most precise and accurate measurement of chlorophenolics and other compounds determined by gas chromatography/mass spectrometry. EPA also received comments urging EPA not to allow modifications to the method. However, EPA also received a large number of requests that analytical methods be "performance-based," and has attempted to implement the means for allowing changes to improve detection and quantitation or to lower costs of measurements. Limited changes may be made, except where specifically prohibited in Method 1653, provided that the performance tests are repeated and the results produced by the change are equivalent or superior to results produced with the unmodified method. EPA has also decided to retain the mention of field duplicates in the method in the event that a laboratory or discharger desires to measure sampling precision. Finally, EPA has not added the requirement that laboratories should be forced to overcome emulsions. EPA believes that nearly all emulsions can be overcome and provides specific steps in

also used as biocides. See, e.g., 40 CFR 430.24(a)(1). (Those compounds are included within the list of the 12 chlorinated phenolic pollutants discussed in Section VI.B.3.a.) EPA is requiring dischargers to demonstrate compliance with these limitations and standards by monitoring for those pollutants at the point where the wastewater containing those pollutants leaves the bleach plant. See, e.g., 40 CFR 430.24(e).

EPA believes it is appropriate to codify separate limitations and standards for those pollutants, even though in very rare cases a mill may be required to comply with both sets. First, although for the same pollutants the two sets of limitations arise from different chemical applications in different parts of the mill. As biocides, pentachlorophenol or trichlorophenol could be used virtually anywhere in a mill's industrial process, but were typically used as slimicides in whitewater recirculation systems. In the limitations and standards promulgated today, however, pentachlorophenol, 2,4,5-trichlorophenol and 2,4,6-trichlorophenol are being regulated because they are found in bleach plant wastewater when chlorine-containing compounds are used for bleaching. Second, EPA expects these pollutants to be reduced to quantities below the minimum level of the applicable analytical method as a result of bleach plant process changes, which is not the case when they are used as biocides. Thus the different limitations and standards found in subparts B and E for these pollutants respond to different situations and reflect different model process technologies. Finally, EPA believes that mills in the Bleached Papergrade Kraft and Soda subcategory or the Papergrade Sulfite subcategory generally do not use pentachlorophenol or trichlorophenol as biocides today. See the Supplemental Technical Development Document, DCN 14487. Therefore, EPA expects that each mill will be able to certify that it is not using the compounds as biocides and therefore will not be subject to the biocides-related limitations.

4. Analytical Methods

In this rule, EPA is promulgating Method 1650 for the analysis of AOX and Method 1653 for the analysis of certain chlorinated phenolic compounds.

a. Authority. The analytical methods in this final rule are promulgated under the authority of CWA sections 301, 304(h), 307, 308, and 501(a). Section 301 of the Act prohibits the discharge of any pollutant into navigable waters unless the discharge complies with an NPDES permit issued under section 402 of the Act. Section 301 also specifies levels of pollutant reductions to be achieved by certain dates. Section 304(h) of the Act requires the EPA Administrator to "promulgate guidelines establishing test procedures for the analysis of pollutants that shall include the factors which must be provided in any certification pursuant to section 401 of this Act or permit applications pursuant to section 402 of this Act." These test procedures for the analysis of pollutants also assist in the implementation of Section 301. Section 501(a) of the Act authorizes the Administrator to prescribe such regulations as are necessary to carry out her function under this Act.

The Administrator has also made these test procedures (methods) applicable to monitoring and reporting of NPDES permits (40 CFR part 122, §§ 122.21, 122.41, 122.44, and 123.25), and implementation of the pretreatment standards issued under section 307 of CWA (40 CFR part 403, §§ 403.10 and 403.12). Section 308 provides authority for information gathering.

b. Background and History. In the December 17, 1993 proposal, EPA referenced a compendium entitled "Analytical Methods for the Determination of Pollutants in Pulp and Paper Industry Wastewater." This compendium contained methods that had not been promulgated at 40 CFR part 136, but would be applicable for monitoring compliance with the limitations and standards proposed for part 430 at that time. The compendium included methods for the analysis of CDDs and CDFs (i.e., dioxin and furans), AOX, chlorinated phenolics, and color. These methods were proposed for promulgation at 40 CFR part 430 to support the proposed regulation and were included in the docket for the proposed pulp and paper rule.

EPA received more than 200 individual comments and suggestions concerning the proposed analytical methods. Some of these were comments on the methods not being promulgated today. Many of the comments and suggestions were technically detailed, ranging from suggestions on changing the integration time in Method 1650 (for AOX) to reducing the spike levels for labeled compounds used in Method 1653 (for chlorinated phenolics). Other comments raised questions about EPA's approach to technical issues and policies regarding the handling of analytical data. EPA has included a summary of the detailed comments and specific responses to those comments in the record for today's rule.

On July 15, 1996, EPA published a notice of availability that, among other things, summarized the changes the Agency intended to make to the proposed or promulgated analytical methods and stated that detailed revisions to the methods would be added to the record at a later date. See 61 FR at 36848–49. In promulgating today's rule, EPA has implemented the changes identified in the July 1996 Notice. These changes are summarized below and detailed in the response to comments provided in the record.

c. Analytical Methods Promulgated Today. EPA has revised the analytical methods compendium entitled "Analytical Methods for the Determination of Pollutants in Pulp and Paper Industry Wastewater" to incorporate revisions to the methods made since proposal. This compendium (EPA–821–B–97–001, August 1997) contains the analytical methods to be used for monitoring compliance with the limitations and standards promulgated today for subparts B and E. The compendium includes Method 1650 for the determination of AOX and Method 1653 for the determination of chlorinated phenolics. These two analytical methods are being promulgated today as appendices to 40 CFR part 430. They have not yet been promulgated at 40 CFR part 136.

(1) Method 1650: AOX by Adsorption and Coulometric Titration

Method 1650 can be used to measure AOX in water and wastewater. AOX is a measure of halogenated organic compounds that adsorb onto granular activated carbon (GAC). The method involves adsorption of the organic halides (chlorine, bromine, iodine) in water onto GAC, removal of inorganic halides by washing, combustion of the organic halides (along with the GAC) to form hydrogen halides, and titration of the hydrogen halides with silver ions in a microcoulometer. The results are reported as organic chlorine even though other halides may be present because chlorine is the halide of concern in pulp and paper wastewaters. EPA studies have demonstrated a Method Detection Limit (MDL) of 6.6 µg/L. Based on this MDL and on calibration of the microcoulometer, the minimum level (ML) in Method 1650 has been determined to be 20 µg/L. The minimum level and other performance attributes for this method have been validated in single laboratory method validation studies and by use in data gathering for today's final rule. All laboratories that used Method 1650 in the data gathering effort calibrated their instruments at the ML.

COD limitations, EPA describes below various processes that mills can use to control COD. The major sources of COD (which includes slowly biodegradable and non-biodegradable organic material) at a pulp mill are the pulp mill and bleach plant areas. Pulping sources of COD include digester condensates and spent pulping liquor. Open screening processes can be a major source of COD discharges. Spent pulping liquor can also be lost from the process through process spills and equipment leaks. Bleach plant filtrates, the recovery area, leaks from turpentine processing areas at softwood mills, and pulp dryers are examples of other sources of COD at pulp mills.

The process changes that form the basis of the effluent limitations guidelines and standards promulgated today include processes that can reduce discharges of primarily non-chlorinated organic compounds. These as yet unidentified refractory organic compounds have been correlated with chronic sublethal aquatic toxicity from pulp mill effluents. By recovering much of the non-chlorinated organic compounds prior to bleaching, discharges of chlorinated organic compounds also are reduced. For example, improved brownstock washing, which is part of the model technology basis for today's regulations, can be operated (for the purposes of achieving COD limitations) to minimize black liquor carryover to the bleach plant and thus reduce the formation of AOX and toxic chlorinated compounds. Another process technology effective at reducing organic discharges associated with pulping liquors is for a mill to return all water from pulp screening to the process, termed a closed screen room.

EPA intends for the best management practices promulgated today for Subparts B and E to lead mills to retain spent pulping liquors in the process, to the maximum extent practicable, through preventing leaks and spills and through capturing those leaks and spills that do occur and returning the organic material to the recovery system. The BMPs are also intended to lead mills to collect intentional diversions of spent pulping liquors and return those materials to the process. However, the BMP regulations do not require that the contained leaked and spilled material be recovered in the process, nor are intentional diversions required to be returned to the process. In the absence of COD limitations, significant quantities of this organic material could be metered to the wastewater treatment system. As a result, while the BMP program will effectively prevent releases of pulping liquors (and soap and turpentine) that would upset or otherwise interfere with the operation of the wastewater treatment system, refractory organic material believed to cause chronic toxic effects could still be discharged at levels greater than the levels achievable through optimized process technologies and effective end-of-pipe treatment. For this additional reason, EPA believes that COD limitations established on a best professional judgment basis would be appropriate.

The COD data considered by EPA are presented in the support document, Analysis of Data for COD Limitations, DCN 13958, for this rule. This support document also presents EPA's estimates (based on data available today) of the ranges of COD effluent load believed to be contributed by other mill operations, which EPA is supplying as limited guidance to permitting and pretreatment authorities. EPA urges permitting authorities to include—and exercise—reopener clauses in NPDES permits for mills subject to Subpart B or E in order to impose or revise COD effluent limitations once effluent limitations guidelines for COD are promulgated.

e. Color and Other Pollutants. EPA proposed BAT limitations and PSES for color for the Bleached Papergrade Kraft and Soda subcategory only. Commenters asserted that EPA should not establish effluent limitations guidelines and standards for color because it is a concern more appropriately addressed in individual permits based on applicable water quality standards. EPA agrees with this comment. The potential for significant aesthetic or aquatic impacts from color discharges is driven by highly site-specific conditions and is best dealt with on a case-by-case basis through individual NPDES permits or, when appropriate, through local limits. Therefore, the Agency is not promulgating technology-based limitations or standards for color. See DCN 14497, Vol. I.

EPA did not propose effluent limitations for four pollutants, including biphenyl, carbon disulfide, dimethyl sulfone, and mercury, and indicated in the Technical Development Document (at Section 7.3.5) that these four pollutants were remaining under consideration for regulation. Based on limited data available to date, EPA has decided not to establish effluent limitations and standards for these pollutants. EPA has reached this decision because these pollutants are not found consistently in effluents and thus they are not directly related to pulping and bleaching processes serving as the basis for BAT and NSPS. EPA notes that where mercury was found to be present, the concentrations at which it was found suggests that a possible source of this pollutant may be contaminants of purchased chemicals. However, the Agency did not obtain any information or data which would either clearly identify the source or sources of mercury or the other pollutants, or provide a basis for identifying applicable control technologies or establishing effluent limitations. Therefore, EPA is not developing effluent limitations and standards. Individual mills may still receive water quality based effluent limitations (Section 301(b)(1)(C)) for any of these pollutants where necessary to protect local water quality.

f. Biocides. EPA is retaining the current effluent limitations guidelines and standards for the biocides pentachlorophenol and trichlorophenol for former subparts G, H, I, and P (now Bleached Papergrade Kraft and Soda subcategory, subpart B) and former subparts J and U (now Papergrade Sulfite subcategory, subpart E). These limitations and standards are recodified at subparts B and E. See 40 CFR 430.24(d), 430.25(d), 430.26(b), 430.27(b), 430.54(b), 430.55(c), 430.56(b), 430.57(b). For subpart B, the limitations and standards are presented in the form of segments corresponding to the old subcategorization scheme. (EPA did not need to track the old subcategorization scheme for subpart E because the limitations and standards for former subparts J and U were the same.) EPA is not codifying any minimum monitoring frequency for these pollutants. See 40 CFR 430.02. In addition, unless the permitting or pretreatment authority decides otherwise, EPA expects that mills would demonstrate compliance with these limitations at the end of the pipe.

As before, the regulations continue to provide that a discharger is not required to meet the biocides limitations or standards if it certifies to the permitting or pretreatment authority that it is not using these compounds as biocides. See, e.g., 40 CFR 430.24(d). (These certification provisions have been approved by the Office of Management and Budget under control number 2040–0033. See 40 CFR 9.1.) EPA notes, however, that mills using chlorine-containing compounds in their bleaching processes are required to meet separate limitations or standards for pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol in connection with the new effluent limitations and standards promulgated today for subparts B and E regardless whether these compounds are

eatment, will ensure that treatment ystems are operated at levels necessary o obviate the need for separate imitations for acetone and MEK. Therefore, EPA is deferring its decision on whether to regulate acetone and MEK until that time.

c. Adsorbable Organic Halides (AOX). EPA is establishing BAT limitations, NSPS, and pretreatment standards for the control of adsorbable organic halide (AOX) discharges from mills in the Bleached Papergrade Kraft and Soda subcategory. EPA is also establishing BAT limitations, NSPS, and pretreatment standards to control AOX discharges from mills in the calcium-, magnesium-, or sodium-based segment of the Papergrade Sulfite subcategory. For a discussion of EPA's pass through analysis for AOX discharges from these mills, see Sections VI.B.5.c(2), VI.B.6.d, and the Supplemental Technical Development Document, Section 8, DCN 14487. As discussed in more detail in those sections, EPA is not setting effluent limitations guidelines and standards for AOX for other mills in subpart E at this time.

AOX is a measure of the total chlorinated organic matter in wastewaters. At pulp and paper mills, almost all of the AOX results from bleaching processes. Even though dioxin and furan are no longer measurable using today's analytical methods at the end of the pipe at many mills, the potential for formation of these pollutants continues to exist at pulp and paper mills as long as any chlorine-containing compounds (including chlorine dioxide) are used in the bleaching process. The record demonstrates a correlation between the presence of AOX and the amount of chlorinated bleaching chemical used in relation to the residual lignin in the pulp (expressed as the kappa factor). The record further shows that there is a correlation between the kappa factor and the formation of dioxin and furan. Therefore, EPA concluded that reducing AOX loadings will have the effect of reducing the mass of dioxin, furan, and other chlorinated organic pollutants discharged by this industry. For further discussion of EPA's rationale for regulating AOX, see the Supplemental Technical Development Document (DCN 14487) and response to comments on justification for establishing limitations for AOX (DCN 14497, Vol. I).

EPA's decision to regulate AOX is also based on the fact that AOX, unlike most of the chlorinated organic compounds regulated today, is comparatively inexpensive to monitor for and is easily quantified by applicable analytical methods. Thus, while EPA could have decided to control the formation of dioxin, furan, chloroform, and the 12 regulated chlorinated phenolic pollutants by requiring mills to monitor for those pollutants on a daily basis, EPA also recognizes that testing for those pollutants is expensive and time consuming. In contrast, daily monitoring for AOX as required in today's rule is considerably less expensive. See Section VI.B.8.b(4) and DCN 14487. Additionally, under the Voluntary Advanced Technology Incentives Program, enrolled mills are eligible for reduced AOX monitoring. See Section IX.B.2 and DCN 14488. Moreover, the presence of AOX can be readily measured in mill effluent, in contrast to the presence of many of the chlorinated organic compounds regulated in today's rule, which for the most part are likely to be present at levels that cannot be reliably measured by today's analytical methods. See Section VI.B.5.a(4). Thus, although EPA is not required under the Clean Water Act to consider the environmental or human health effects of its technology-based regulations, EPA has also determined that regulating AOX as part of BAT, NSPS, PSES and PSNS provides further assurance that human health and the environment will be protected against the potential harm associated with dioxin, furan, and the other chlorinated organic pollutants.

d. Chemical Oxygen Demand (COD). The proposed rule included end-of-pipe BAT limitations and PSES for COD. EPA continues to believe that COD limitations can be used to ensure the operation of processes that minimize the discharge of all organic compounds, including toxic organic compounds that are not readily biodegraded. However, the limited data available at this time do not adequately characterize other sources of COD that may be present at some complex mills, although it appears that the COD contributed by these sources may be as great as the COD contribution from the pulp mill and bleach plant areas of the mill. These other sources of COD could include paper machines, mechanical pulping, other on-site chemical pulping, and secondary fiber processing (including deinking). See DCN 13958 and DCN 14495. Even if sufficient data were now available to establish COD limitations and standards for pulp mill operations in subparts B and E, EPA does not have sufficient information at present to evaluate the other sources of COD and the performance of control technologies to limit COD at those sources in order to set national effluent limitations guidelines and standards.

For this reason, EPA is not establishing final effluent limitations guidelines and standards for COD at this time. EPA does, however, intend to promulgate COD limitations and NSPS for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories in a later rulemaking. For this purpose, EPA will gather additional data to characterize other sources of COD that may be present at complex mills subject to subparts B or E. This effort will be undertaken concurrently with data gathering to assess the need for establishing COD limits for mills operating in other subcategories (Phase II rulemaking). EPA believes that this data-gathering effort will facilitate setting limits in permits for complex mills with other onsite process operations. EPA will also decide as part of the Phase II rulemaking whether COD passes through or interferes with the operation of POTWs and, therefore, whether pretreatment standards for COD would be appropriate for subparts B and E.

While EPA does not have sufficient data to issue national technology-based regulations for COD at this time, EPA strongly urges permitting authorities to consider including COD limitations in NPDES permits for Subpart B and E mills on the basis of best professional judgment. See 40 CFR 125.3(c)(3). Pretreatment authorities should establish COD local limits if COD passes through or interferes with the POTWs within the meaning of the general pretreatment regulations. See 40 CFR 403.5(c). EPA believes that permitting or pretreatment authorities should address COD for the following reasons. Chronic sublethal toxic effects have been found to result from the discharge of treated effluent from bleached and unbleached kraft, mechanical, and groundwood/sulfite pulp mills (see DCNs 3984, 13985, 13975, 13976, 13979, and 00012). These chronic toxic effects were measured as increased liver mixed-function oxydase activity and symptoms of altered reproductive capacity in fish (DCN 60002). This toxicity is associated at least in part with families of non-chlorinated organic materials that are measured by the existing COD analytical method. Some of these materials, including several wood extractive constituents found in pulping liquors, are refractory (i.e., resistant to rapid biological degradation) and thus are not measurable by the five-day biochemical oxygen demand (BOD_5) analytical method.

In order to assist permitting or pretreatment authorities in developing

proposal, EPA presented two alternative methodologies for developing BCT limitations. The first assumed that BPT limits would be revised in the final rulemaking; the alternative analysis was based on the assumption that BPT limits would not be revised. See 58 FR at 66106–07. The principal difference between the two methodologies involved the BPT baseline that EPA would use to compare the incremental removals and costs associated with the candidate BCT technologies. Because the Agency is not revising BPT, EPA used the second alternative to determine whether to revise the current BCT limits for subparts B and E.

d. BCT Technology Options Considered. For the Bleached Papergrade Kraft and Soda subcategory, EPA identified two candidate BCT technologies for the final rule. These were: (i) The technology required to perform at the level achieved by the best 90 percent of mills in the subcategory; and (ii) the technology required to perform at the level achieved by the best 50 percent of mills in the subcategory.

The Papergrade Sulfite subcategory was not divided into segments for the purpose of conducting a BCT analysis because EPA found that treatability of BOD_5 and TSS in the wastewater generated by the three segments does not differ. EPA identified one candidate BCT technology for the Papergrade Sulfite subcategory. This was the technology required to perform at the average level achieved by three mills in the subcategory with at least 85 percent of their production in the segment. Development of candidate BCT technology options based on the best 90 and 50 percent of mills, which EPA used for the Bleached Papergrade Kraft and Soda subcategory, is not appropriate for this subcategory because there are only 11 mills in this subcategory and only four of these have at least 85 percent of their production in the subcategory. The wastewater treatment performance of three of these mills was determined to reflect BCT level performance for the Papergrade Sulfite subcategory. EPA did not consider the wastewater treatment performance of the fourth mill to be representative of the subcategory as a whole because it treats wastewater from liquor by-products manufactured on site, and thus is unique among papergrade sulfite mills.

e. Results of BCT Analysis. EPA evaluated the candidate BCT technologies for both the Bleached Papergrade Kraft and Soda subcategory and the Papergrade Sulfite subcategory and concluded that none of the candidate options passed the BCT cost test. For more details, see the Supplemental Technical Development Document, Section 12, DCN 14487. Therefore, at this time, the Agency is not promulgating more stringent BCT effluent limitations guidelines for the newly constituted subparts B and E. Rather, the BCT limitations promulgated for former subparts G, H, I, and P (now Bleached Papergrade Kraft and Soda subcategory, subpart B) and former subparts J and U (now Papergrade Sulfite subcategory, subpart E) remain in effect. These limitations are recodified at subparts B and E in the form of segments corresponding to the old subcategorization scheme. See 40 CFR 430.23 and 430.53.

3. Pollutant Parameters for BAT/NSPS/PSES/PSNS

a. Dioxin, Furan, and Chlorinated Phenolic Pollutants. EPA is promulgating effluent limitations guidelines and standards for 2,3,7,8-TCDD ("dioxin"), 2,3,7,8-TCDF ("furan"), and 12 specific chlorinated phenolic pollutants for subparts B and E (except for those mills regulated by TCF limitations). For a discussion of EPA's rationale for regulating these parameters, see the proposal, 58 FR at 66102–03 and the proposal Technical Development Document (EPA 821–R–93–019). For a discussion of EPA's pass-through analysis regarding these pollutants, see Section VI.B.5.c(2) and VI.B.6.d.

b. Volatile Compounds. EPA is promulgating effluent limitations guidelines and standards for chloroform for subpart B. For a discussion of EPA's rationale for regulating chloroform, see the proposal, 58 FR at 66102 and the proposal Technical Development Document (EPA 821–R93–019). EPA is not promulgating effluent limitations guidelines and standards for chloroform for subpart E at this time. For a discussion of EPA's pass-through analysis regarding chloroform, see Section VI.B.5.c(2). For the reasons set forth below and in the Supplemental Technical Development Document, DCN 14487, EPA is not promulgating effluent limitations guidelines and standards for the discharge of acetone, methylene chloride, and methyl ethyl ketone (MEK). EPA received no adverse comments in response to its preliminary determination, presented in the July 1996 Notice of Availability, 61 FR at 36839, not to regulate these pollutants.

EPA has reviewed data from both hardwood and softwood mills employing a variety of bleaching processes in an effort to identify factors that contribute to the formation of acetone, methylene chloride, and MEK in the bleach plant. The bleaching processes evaluated included bleaching using elemental chlorine, BAT Option A (elemental chlorine-free (ECF) bleaching using 100 percent chlorine dioxide), BAT Option B (oxygen delignification plus ECF bleaching using 100 percent chlorine dioxide), ECF bleaching using ozone, and totally chlorine-free bleaching. The ranges of loadings for each pollutant were similar across the different bleaching technologies and for both hardwood and softwood mills. The average loadings for these pollutants do not exhibit a performance trend with regard to the bleaching technologies.

In the EPA/Industry long-term study, methylene chloride was found to be a sample- and laboratory-contaminant in certain cases. Among the more recent data reviewed by EPA, methylene chloride was detected in the bleach plant effluent at ten percent of the sampled mills. Where detected, methylene chloride was present at low concentrations. Therefore, because methylene chloride is infrequently detected, because its formation processes are not fully understood, and because the cases in which it is detected are often attributed to sample and laboratory contamination, EPA has decided not to promulgate effluent limitations guidelines and standards for methylene chloride in this rulemaking.

EPA had proposed limitations for acetone and MEK based on limited data indicating that these parameters may be affected by the technology options being considered. EPA has decided not to promulgate effluent limitations guidelines or standards for these parameters because additional data have shown that this is not the case. Moreover, EPA believes that the limitations and new source performance standards being promulgated today for adsorbable organic halides for subpart B mills will ensure that mills will continue to operate their biological wastewater systems at levels necessary to achieve very high removals of these pollutants, thus obviating the need for separate limitations.

In view of the efficacy of biological wastewater treatment in removing acetone and MEK and the fact that process changes have no effect on the levels at which they are generated, EPA is not convinced that these pollutants pass through POTWs. Therefore, EPA is also not setting pretreatment standards for acetone or MEK for subpart B at this time.

With respect to papergrade sulfite mills, EPA expects that, once promulgated, the limitations and standards for AOX based on, among other things, efficient biological

oxygen demand (BOD_5) and total suspended solids (TSS) based on the best practicable control technology currently available (BPT) for all of the proposed subcategories, including Bleached Papergrade Kraft and Soda and Papergrade Sulfite. As presented in the proposal, 58 *FR* at 66105, EPA highlighted several controversial issues concerning the BPT limitations, their calculation, and their interpretation. EPA also presented a rationale and methodology and identified related controversies for establishing limitations based on the best conventional pollutant control technology (BCT).

b. BPT. In December 1993, the Agency proposed to revise BPT for conventional pollutants for subparts B and E and specifically solicited comment on that proposed decision. See 58 FR at 66105–06. In response, EPA received comments claiming that EPA lacks the legal authority to revise BPT once BPT effluent limitations guidelines have been promulgated. EPA also received other comments asserting that the Clean Water Act compels EPA to revise BPT. Although the Agency believes that it has the statutory authority to revise BPT, the Agency also believes that it has the discretion to determine whether to revise BPT effluent limitations guidelines in particular circumstances. The question of EPA's legal authority is not relevant here, however, because EPA has decided, in the exercise of its discretion, that it is not appropriate to revise BPT effluent limitations guidelines for conventional pollutants for subparts B and E at this time. Instead the current BPT effluent limitations guidelines for conventional pollutants will continue to apply to these subcategories.

EPA bases this decision on its determination that the total cost of applying the proposed BPT model technology is disproportionate in this instance to the effluent reduction benefits to be achieved. See CWA section 304(b)(1)(B). When setting BPT limitations, EPA is required under section 304(b) to perform a limited cost-benefit balancing to make sure that costs are not wholly out of proportion to the benefits achieved. See, e.g., *Weyerhaeuser Co.* v. *Costle*, 590 F.2d 1011 (D.C. Cir. 1978). It therefore follows that EPA is authorized to perform such balancing when determining whether to revise existing BPT limitations.

Mills in subparts B and E have significantly reduced their loadings of BOD_5 and TSS since promulgation of the current BPT effluent limitations guidelines in 1977. Although additional removals could be achieved if BPT were revised, EPA has determined for subpart B and, separately, for subpart E that the costs of achieving that incremental improvement beyond either the current BOD_5 and TSS limitations or the current long term average for BOD_5 and TSS are disproportionate to the benefits. A single mill might have to spend as much as $17.4 million in order to upgrade to advanced secondary treatment. See the Supplemental Technical Development Document, DCN 14487. These expenditures are particularly significant when one considers the cumulative costs of this rulemaking. Therefore, EPA has decided not to revise BPT limitations for conventional pollutants for mills in the Bleached Papergrade Kraft and Soda subcategory and the Papergrade Sulfite subcategory at this time.

EPA's decision not to revise BPT limitations for subpart B at this time is also informed by the Agency's long-term goal for this industry: that the industry will continuously improve its environmental performance primarily through sound capital planning and expenditures. EPA has determined that this interplay between potentially more stringent revised BPT limitations and the industry's long-term environmental improvement is an appropriate factor to be considered in this rulemaking with respect to BPT. See CWA section 304(b)(1)(B). It is also consistent with the Clean Water Act's overarching objective, which calls upon EPA to implement the statute's provisions with the goal of eliminating the discharge of pollutants into the Nation's waters. See CWA Section 101(a). In this rulemaking, EPA has determined that the baseline regulatory requirements—effluent limitations guidelines and standards and air emissions standards—are only one component of the framework to achieve long-term environmental goals. EPA believes that the mills of the future will approach closed loop operations, thus achieving minimal impact on the aquatic environment. To promote this, EPA is promulgating an incentives program to encourage subpart B mills to implement pollution prevention leading to the mill of the future. See Section IX.

EPA believes that near-term investments to achieve more stringent BPT effluent limitations for conventional pollutants would divert limited resources away from environmentally more preferable investments in advanced pollution prevention technologies. Thus, EPA is concerned that revising BPT effluent limitations guidelines at this time could discourage mills from achieving even greater environmental results through the Voluntary Advanced Technology Incentives Program. Moreover, EPA estimates that, even without revising BPT limitations for subpart B, loadings of BOD_5, for example, will decline by approximately 20 percent when mills meet the baseline BAT limitations and best management practices requirements promulgated today. Incidental removals are even greater for subpart B mills implementing more advanced technologies (e.g., loadings of BOD_5 are estimated to decline by approximately 30 percent at the Tier I level, and EPA expects substantially greater reductions from Tiers II and III). See Table IX–1. EPA also expects comparable TSS loading reductions to occur. See the Voluntary Advanced Technology Incentives Program Technical Support Document, DCN 14488. In short, because sufficient additional removals of conventional pollutants from subpart B mills can be obtained without revising BPT at this time, EPA has determined that, on balance, the incremental benefits attributable to revised BPT limits do not justify the comparatively high costs associated with achieving those limits. For these additional reasons, EPA has decided not to revise BPT for conventional pollutants for mills in the Bleached Papergrade Kraft and Soda subcategory at this time.

Finally, if additional removals of BOD_5 and TSS are needed to protect particular receiving waters, CWA section 301(b)(1)(C) requires mills on a case-by-case basis to meet more stringent limitations as necessary to achieve applicable water quality standards.

For the foregoing reasons, therefore, EPA has decided, in the exercise of its discretion, that it is not appropriate to revise BPT limitations for conventional pollutants for subparts B and E at this time. Rather, the BPT effluent limitations guidelines promulgated for former subparts G, H, I, and P (now Bleached Papergrade Kraft and Soda subcategory, subpart B) and former subparts J and U (now Papergrade Sulfite subcategory, subpart E) remain in effect. These limitations are recodified at subparts B and E in the form of segments corresponding to the old subcategorization scheme. See 40 CFR 430.22 and 430.52.

c. BCT Methodology. In considering whether to promulgate revised BCT limits for subparts B and E, EPA considered whether there are technologies that achieve greater removals of conventional pollutants than the current BPT effluent limitations guidelines, and whether those technologies are cost-reasonable according to the BCT cost test. At

formed subcategories. The only substantive changes to the current effluent limitations guidelines and standards are the BAT limitations, NSPS, PSES, PSNS, and best management practices being promulgated today for the Bleached Papergrade Kraft and Soda subcategory (subpart B) and the Papergrade Sulfite subcategory (subpart E). In addition, EPA is promulgating the Voluntary Advanced Technology Incentives Program applicable to subpart B. EPA is making no changes to the BPT and BCT limitations previously promulgated for what are now subparts B and E. Similarly, EPA is retaining the NSPS promulgated in 1982 in new Subparts B and E for new sources that commenced discharge that met the 1982 NSPS after June 15, 1988 but before June 15, 1998 provided that the new source was constructed to meet those standards. EPA is also retaining, without substantive revision, the new source pretreatment standards previously promulgated for subparts B and E for facilities constructed between June 15, 1988 and June 15, 1998.

These limitations and standards are recodified at subparts B and E in the form of segments corresponding to the old subcategorization scheme. (In re-codifying these limitations and standards, EPA has simplified the text introducing the limitations tables, but has not changed the former regulations' substance.) Direct discharging mills currently subject to the 1982 NSPS remain subject to those standards until the date ten years after the completion of construction of the new source or during the period of depreciation or amortization of such facility, whichever comes first. See CWA section 306(d). After such time, the BAT limitations promulgated today apply for toxic and nonconventional pollutants. Limitations on conventional pollutants will be based on the formerly promulgated BPT/BCT limitations corresponding to the BPT/BCT segment applicable to the discharger or on the 1982 NSPS for conventional pollutants, whichever is more stringent.

EPA is making no substantive changes to the limitations and standards applicable to any other subcategory. EPA will promulgate new or revised effluent limitations guidelines and standards, as appropriate, for the remaining subcategories at a later date. See Table II–2. Until then, the previously promulgated effluent limitations guidelines and standards remain in effect.

EPA is making one non-substantive revision in each subpart. Where the existing regulation includes a narrative statement describing the procedure to calculate the effluent limitations guidelines and standards for non-continuous dischargers, e.g., 40 CFR 430.13, 430.15, 430.62(a)–(d), 430.65 (1996 ed.), EPA has performed the calculations and presented the results in tables. The resulting effluent limitations and standards are the same; this procedure was done simply to streamline the regulation and to make it easier to apply for the permit writer.

In order to ensure that any facilities that would not have been subject to the previous subparts will not inadvertently be subject to limitations and standards set forth in the newly redesignated subparts, EPA is using the applicability language of each previously promulgated subpart to define the applicability of the newly redesignated subparts that consolidate them. For example, rather than promulgate the applicability statement proposed for subpart C, see 58 FR at 66199, EPA has instead codified as a single applicability statement, the applicability statements of former subparts A, D and V, which new subpart C now comprises. See 40 CFR 430.30.

The Agency received comments that the groupings comprising the new subcategories are unreasonable because they purportedly ignore distinctions among facilities that affect their ability to implement the technologies that form the basis of the effluent limitations guidelines and standards promulgated for subparts B and E. Thus, some commenters asserted, these facilities would be unable to meet the same limits as other mills in the same new subcategory. EPA considered these comments in detail where they involved mills subject to new effluent limitations guidelines and standards promulgated today in order to determine whether the groupings of the mills into subparts B and E were appropriate. In response to these comments, EPA segmented subpart E. See section VI.B.6.a. When EPA develops the final regulations for the remaining subcategories, EPA similarly will consider if it is appropriate to fine-tune these initial groupings to better respond to material differences between facilities.

EPA also acknowledges that the subcategorization scheme promulgated today was developed based on data received in the "1990 National Census of Pulp, Paper, and Paperboard Manufacturing Facilities," and that there have been changes in the industry since that data gathering effort. Because the resubcategorization has no substantive effect on any mill other than those with production in subparts B and E (for whom revised effluent limitations guidelines and standards are promulgated today), EPA believes that changes in the industry affecting the remaining subparts are best addressed when EPA makes the decision whether to revise the regulations for those subcategories.

a. Bleached Papergrade Kraft and Soda subcategory. The Bleached Papergrade Kraft and Soda subcategory, for which regulations are promulgated in this rulemaking at 40 CFR part 430 subpart B, encompasses the former subparts G (market bleached kraft), H (BCT bleached kraft), I (fine bleached kraft), and P (soda). EPA has retained the applicability statements associated with those former subparts. See 40 CFR 430.20. EPA intends for this merged subcategory to apply to mills that chemically pulp wood fiber using a kraft method with an alkaline sodium hydroxide and sodium sulfide cooking liquor to produce bleached papergrade pulp and/or bleached paper/paperboard. It also applies to mills that chemically pulp wood fiber using a soda method with an alkaline sodium hydroxide cooking liquor. Principal products of bleached kraft wood pulp include papergrade kraft market pulp, paperboard, coarse papers, tissue papers, uncoated free sheet, and fine papers, which include business, writing, and printing papers. Principal products of bleached soda wood pulp are fine papers, which include printing, writing, and business papers, and market pulp.

b. Papergrade Sulfite subcategory. The Papergrade Sulfite subcategory, for which regulations are promulgated in this rulemaking, is defined as 40 CFR part 430 subpart E and encompasses former subpart J (papergrade sulfite-blow pit wash) and subpart U (papergrade sulfite-drum wash). EPA has retained the applicability statements associated with those former subparts. See 40 CFR 430.50. EPA intends for this merged subcategory to apply to mills that chemically pulp wood fiber using a sulfite method, with or without brightening or bleaching, using an acidic cooking liquor of calcium, magnesium, ammonium, or sodium sulfites to produce bleached papergrade pulp and/or bleached paper/paperboard. The provisions of this merged subpart apply regardless of whether blow pit pulp washing techniques or vacuum or pressure drum pulp washing techniques are used.

2. BPT/BCT for the Bleached Papergrade Kraft and Soda Subcategory and the Papergrade Sulfite Subcategory

a. Background. EPA proposed to revise effluent limitations for the conventional pollutants biochemical

dividual mills to comply with the oluntary Advanced Technology ıcentives Program. Because the control chnologies that could be installed to nplement the Voluntary Advanced echnology Incentives Program may ary significantly from one mill to nother, mills that want controls mplemented within the context of the /oluntary Advanced Technology ffluent program to be considered PCP vill likely need to make a site-specific lemonstration that such controls result n an overall environmental benefit. When a mill would need to make such a demonstration would depend upon hat particular mill's compliance timeline—dictated by the AT Incentives Tier to which they commit and the time necessary to get applicable permits approved. While it is not possible at this time to identify the criteria the Agency would use for approving a PCP exclusion, the Agency would not consider projects which result in any increases in emissions of highly toxic compounds to be an acceptable candidate PCP. For example, the Agency believes it would not be environmentally acceptable to give the PCP exclusion to an activity which results in a chlorinated material being sent to a boiler that would result in the release of a chlorinated toxic air pollutant. The Agency also believes that the public should be provided an opportunity to review and comment on mill-specific cases where a PCP exclusion is being considered for these advanced water technologies, particularly if there would be a potentially significant emissions increase of criteria air pollutants such as SO_2 or NO_X.

Since mills must declare within one year of promulgation of the cluster rules whether they will participate in the Voluntary AT Incentives Program, the Agency is aware that mills would like to know whether a mechanism exists whereby they may apply for a PCP exclusion among the many factors that may influence their participation in this incentives program. In order for the Agency to proceed further on this issue, the Agency again is requesting that interested stakeholders submit information on the types of control technologies that could be installed under the Voluntary AT Incentives Program along with information on the type and potential magnitude of collateral air pollutant increases that may occur at mills. The Agency requests information from stakeholders that could be useful for developing a process by which mills would apply for the PCP exclusion and for setting forth criteria for determining whether an activity performed under the Voluntary AT Incentives Program qualifies for the PCP exclusion. Given the potentially varying control strategies that could be adopted by participating mills, the Agency also requests information that may be useful in assessing whether generic guidance on when a PCP exclusion may be appropriate should be set forth within the context of the NSR Reform effort or whether NSR determinations should more appropriately be made in the context of mill-specific applications. The EPA needs this information within 60 days of the publishing of this notice to evaluate the information and proceed with this issue in a useful time period for mills to make their decisions on participation in the Voluntary AT Incentives Program. Stakeholders should submit information on this topic directly to Ms. Penny Lassiter, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

b. Resource Conservation and Recovery Act (RCRA)/Boilers and Industrial Furnaces (BIF). One of the options for controlling emissions from pulping process condensates is to steam strip HAPs, primarily methanol, from kraft pulping process condensate streams. After the HAPs are removed, the vent gas from the steam stripper is required to be sent to a combustion device for destruction. Several commenters pointed out that some mills may choose to concentrate the methanol in the steam stripper vent gas, using a rectification column, and burn the condensate as a fuel.

However, the concentrated methanol condensate that would be derived from the steam stripper overheads may be identified as hazardous waste under the Resource Conservation and Recovery Act (RCRA) because it exhibits the ignitability characteristic. See 40 CFR 261.21. Boilers burning such a hazardous waste fuel would ordinarily be required to comply with emission standards set out in 40 CFR Part 266 Subpart H (the so-called BIF regulation, i.e., standards for boilers and industrial furnaces burning hazardous waste). Several commenters recommended incorporating a "clean fuels" exclusion into the pulp and paper NESHAP so that the condensate can be burned for energy recovery without the combustion unit also being subject to the RCRA rules. The "clean fuels" exclusion is a recommendation from EPA's Solid Waste Task Force to allow recovery of energy from waste-derived fuels that are considered hazardous only because they exhibit the ignitability characteristics and do not contain significant concentrations of HAP. For background information see 61 FR at 17459–69 (April 19, 1996), where EPA proposed such an exclusion based on similarity of waste-derived fuels to certain fossil fuels.

The Agency proposed to exclude this practice from RCRA regulation in the March 8, 1996 notice and solicited comments on this determination (61 FR at 9396). All of the comments supported granting this exemption. As stated in the notice, EPA does not believe that RCRA regulation of the rectification and combustion of the condensate is appropriate or necessary. The rectification practice would not increase environmental risk, would reduce secondary environmental impacts, and would provide a cost savings. Moreover, the burning of condensate will not increase the potential environmental risk over the burning of the steam stripper vent gases prior to condensation. (See generally 61 FR at 9397.) Finally, consideration of risk would more appropriately be handled as part of the section 112(f) residual risk determination required for all sources after implementation of MACT standards. For these reasons, EPA will exclude specific sources at kraft mills that burn condensates derived from steam stripper overhead vent gases from RCRA, including condensates from the steam stripper methanol rectification process. The scope of this exclusion is limited to that requested by commenters, combustion at the facility generating the stream. (Limitation of the scope of the exclusion to on-site burning also eliminates questions about whether RCRA regulation is needed to assure proper tracking and transport of the material.)

B. Effluent Limitations Guidelines and Standards

1. Subcategorization

The subcategorization scheme being promulgated today for effluent limitations guidelines and standards for the pulp, paper, and paperboard industry replaces the subcategorization of this industry that dates back to 1974. EPA's reasons for combining and reorganizing the 26 old subcategories (formerly found in Parts 430 and 431) into 12 new subcategories are set forth below, in the proposal, see 58 *FR* at 66098–100, and in "Selected Issues Concerning Subcategorization" (DCN 14497, Volume 1).

In reorganizing Part 430 to comport with the new subcategorization scheme, EPA has reprinted in their entirety the current effluent limitations guidelines and standards applicable to the newly

(PCP) exemption allowed under the current PSD policy provides inadequate relief from these potential impacts and recommended including specific language in the pulp and paper rule exempting MACT compliance projects from NSR/PSD.

In a July 1, 1994 guidance memorandum issued by EPA (available on the Technology Transfer Network; see "Pollution Control Projects and New Source Review (NSR) Applicability" from John S. Seitz, Director, OAQPS to EPA Regional Air Division Directors), EPA provided guidance for permitting authorities on the approvability of PCP exclusions for source categories other than electric utilities. In the guidance, EPA indicated that add-on controls and fuel switches to less polluting fuels qualify for an exclusion from major NSR. To be eligible to be excluded from otherwise applicable major NSR requirements, a PCP must on balance be "environmentally beneficial," and the permitting authority must ensure that the project will not cause or contribute to a violation of a national ambient air quality standard (NAAQS) or PSD increment, or adversely affect visibility or other air quality related values (AQRV) in a Class I area, and that off-setting reductions are secured in the case of a project which would result in a significant increase of a non-attainment pollutant. The permitting authority can make these determinations outside of the major NSR process. The 1994 guidance did not void or create an exclusion from any applicable minor source preconstruction review requirements in an approved State Implementation Plan (SIP). Any minor NSR permitting requirements in a SIP would continue to apply, regardless of any exclusion from major NSR that might be approved for a source under the PCP exclusion policy.

In the July 1, 1994 guidance memorandum, EPA specifically identified the combustion of organic toxic pollutants as an example of an add-on control that could be considered a PCP and an appropriate candidate for a case-by-case exclusion from major NSR. For the purposes of the pulp and paper MACT rule, EPA considers that combustion for the control of HAP emissions from pulping systems and condensate control systems to be a PCP, because the combustion controls are being installed to comply with MACT and will reduce emissions of hazardous organic air pollutants. EPA also considers the reduction of these pollutants to represent an environmental benefit. However, EPA recognizes that the incidental formation of SO_2 and NO_X due to the destruction of HAPs will occur. Consistent with the 1994 guidance, the permitting authority should confirm that, in each case, the resultant emissions increase would not cause or contribute to a violation of a NAAQS, PSD increment, or adversely affect an AQRV.

The EPA believes that the current guidance on pollution control projects adequately provides for the exclusion from major NSR of air pollution control projects in the pulp and paper industry resulting from today's rule. Such projects would be covered under minor source regulations in the applicable state implementation plan (SIP), and permitting authorities would be expected to provide adequate safeguards against NAAQS and increment violations and adverse impacts on air quality related values in Federal Class I areas. Only in those cases where potential adverse impacts cannot be resolved through the minor NSR programs or other mechanisms would major NSR apply.

The EPA recognizes that, where there is a potential for an adverse impact, some small percentage of mills located near Class I PSD areas might be subject to major NSR, i.e., the permitting authority determines that the impact or potential impact cannot be adequately addressed by its minor NSR program or other SIP measures. If this occurs, there is a question whether MACT and NSR compliance can both be done within the respective rule deadlines. EPA believes, however, that the eight year compliance deadline provided in the final MACT rule for HVLC kraft pulping sources substantially mitigates the potential scheduling problem. The equipment with the eight year compliance deadline are the primary sources of the additional SO_2 and NO_X emissions. The additional time should be sufficient to resolve any preconstruction permitting issues.

While the Agency believes that eight years is sufficient for kraft mills with HVLC systems to meet permitting requirements, industry has raised concerns that there could be a potential problem for a few mills in Class I attainment areas that are required to comply with the final rule in three years. The PCP exemption and extended compliance schedule may not resolve all NSR conflicts for every mill. Although too speculative to warrant disposition in this rule, EPA is alert to this potential problem and will attempt to create implementation flexibility on a case-by-case basis should a problem actually occur.

Commenters requested that the PCP exclusion also be expanded to actions undertaken at mills that enroll in the Voluntary Advanced Technology (AT) Incentives Program in the effluent limitations guidelines and standards portion of today's rule. In the July 23, 1996 notice on changes to the NSR Program (61 FR 38250), EPA solicited comments on the appropriate scope of the PCP exclusion. EPA also solicited comments in the July 15, 1996 supplemental pulp and paper effluent guidelines notice (61 FR 36857) on whether advanced water pollution control technologies implemented by the pulp and paper industry should be eligible for an exclusion from major NSR and if so, whether the exclusion should be implemented under the provisions of the PCP exclusion under the NSR proposed regulations. In the context of these notices, EPA received several comments in favor of extending the PCP exclusion to multi-media activities, such as those that would be undertaken for the Voluntary Advanced Technology Incentives Program but received little information on appropriate criteria for determining the relative benefits of reduced water pollution to potential coincident increases in air pollution.

The Agency believes that, depending on the control technologies selected by a mill, the potential exists for an overall environmental benefit to result from control strategies implemented under the Voluntary Advanced Technology Incentives Program. However, unlike the MACT rule in today's action, where the controls that would be installed to reduce hazardous air pollutants are fairly well known and the potential pollutant tradeoffs within the same environmental media are fairly well understood, the Agency is less certain about the controls that might be installed to comply with this Voluntary Advanced Technology Incentives Program and the potential pollutant tradeoffs that may occur across environmental media. Therefore, while the Agency is continuing to consider extending this PCP status to activities undertaken to implement the Voluntary Advanced Technology Incentives Program, the Agency is not extending that status in today's action because the Agency currently lacks sufficient information to establish a process and set of criteria by which a determination could be made as to whether these advanced control technologies result in an overall environmental benefit at individual mills that participate in this program. The Agency intends to continue discussions with stakeholders on a process and set of criteria by which a determination could be made as to the appropriateness of extending the PCP exclusion to controls installed at

hat is demonstrated to achieve 98 ercent destruction of HAPs will omply with the rule. Any thermal xidizer which reduces HAP emissions o a concentration of 20 ppmv at ten ercent oxygen will also comply with he rule. The 98 percent destruction equirement represents the control level chieved by well-operated combustion devices. The 20 ppmv limit represents he performance achieved by well-perated combustion devices on low concentration vent streams.

Second, EPA has made this part of the rule as flexible as possible while still achieving a level of control reflecting MACT. In the December 17, 1993 proposal and in this final rule, EPA developed compliance alternatives in order to reduce the compliance testing burden. The compliance alternatives (i.e., operating thermal oxidizers at a temperature of 1,600 °F and a residence time of 0.75 seconds) were developed to ensure that the thermal oxidizers perform at a level that would meet the destruction efficiency requirements. The operating parameters are based on previous Agency studies that show that these conditions are necessary to achieve 98 percent destruction of HAPs. However, the NSPS operating parameters (1,200 °F and 0.5 seconds residence time) do not destroy HAPs to this extent.

The purpose of the kraft NSPS was to reduce emissions of TRS compounds. EPA has evaluated the temperature and residence time required by the NSPS to determine whether the NSPS temperature and residence time are sufficient to achieve 98 percent reduction of HAPs. EPA's analysis indicates that while the NSPS requirements are sufficient to achieve 98 percent destruction of TRS compounds, kinetic calculations for methanol (the majority of HAP in pulping vent gases) show that the NSPS criteria will not achieve 98 percent reduction of HAPs (Air Docket A–92–40, IV–B–18). Additionally, EPA evaluated incinerator performance data submitted by industry (Air Docket A–92–40, IV–J–33). The data indicated that the NSPS operating parameters were not sufficient for achieving 98 percent destruction of methanol. This conclusion was reached by EPA since the operating conditions (i.e., temperature and residence time) of the incinerators that achieved 98 percent methanol destruction were greater than the levels specified in the kraft NSPS. Therefore, the NSPS specifications will not meet the requirements of MACT for new and existing sources.

c. Condensate Collection System. In the December 17, 1993 proposal, EPA proposed to require pulping process condensate collection systems to be designed and operated without leaks. EPA proposed that all tanks, containers, and surface impoundments storing applicable condensate streams were required to be enclosed and all vent emissions must be routed to a control device by means of a closed-vent system. A submerged fill pipe would have been required on containers and tanks storing an applicable condensate stream or any stream containing HAP removed from a condensate stream. All drain systems that received or managed applicable condensate streams would have been required to be enclosed with no detectable leaks and any HAP emissions from vents were required to be routed to a control device. Several commenters on the proposed pulp and paper NESHAP contended that the proposed requirements were overly burdensome and, in some cases, unnecessary.

After the pulp and paper NESHAP was proposed, the Agency promulgated a separate rulemaking in 40 CFR Part 63, Subpart RR (National Emission Standards for Individual Drain Systems). This rule established emission control, inspection and monitoring, and recordkeeping and reporting requirements for individual drain systems. The individual drain system requirements specify that air emissions from collection systems must be controlled using covers or seals, hard-piping, or venting of individual drain systems through a closed-vent system to a control device or a combination of these control options. The emission control techniques specified in the individual drain system standard (i.e., covers/seals and vent combustion) are common techniques that are applicable to a variety of wastewater collection systems, regardless of the type of process that produced the wastewater streams.

EPA compared the collection system requirements contained in the proposed pulp and paper NESHAP with the individual drain system requirements in subpart RR. Since the subpart RR requirements are consistent with the intent of the proposed standards, EPA concluded that the requirements of subpart RR constitute MACT for the pulp and paper industry. The control costs presented in the "Pulp, Paper, and Paperboard Industry-Background Information for Promulgated Air Emission Standards. Manufacturing Processes at Kraft, Sulfite, Soda, Semi-Chemical, Mechanical, and Secondary and Non-wood Fiber Mills, Final EIS"(EPA–453/R–93–050b) were based on industry estimates for hard-piping systems. The Agency has concluded that these costs would be the same or greater than would be needed for complying with the requirements of subpart RR.

The final pulp and paper NESHAP references 40 CFR Subpart RR for the standards for individual drain systems for the pulping process condensate closed collection system. The Subpart RR standards provide uniform language that simplifies compliance and enforcement.

The final rule requires tanks to be controlled as at proposal, but containers and surface impoundments are not required to be controlled. Public comments indicated that containers are not used in the pulp and paper industry. The Agency's intention in the proposed rule was not to require surface impoundments to be controlled, except when used as part of the condensate collection system. After further review of this issue, the Agency has determined that mills do not use and are unlikely to use surface impoundments as part of their closed collection system for condensate streams and therefore that the language on control of surface impoundments does not need to appear in the rule.

11. Interaction With Other Rules

a. Prevention of Significant Deterioration/New Source Review (PSD/NSR). To comply with the MACT portion of the pulp and paper cluster rule, mills will route vent gases from specified pulping and condensate emission points to a combustion control device for destruction. The incineration of these gases at kraft mills has the potential to generate sulfur dioxide (SO_2) and, to a lesser degree, nitrogen oxides (NO_X). The emission increases of SO_2 and NO_X may be of such magnitude to trigger the need for preconstruction permits under the nonattainment NSR or PSD program (hereinafter referred to as major NSR).

Industry and some States have commented extensively that in developing the rule, EPA did not take into account the impacts that would be incurred in triggering major NSR. Commenters indicated that major NSR would: (1) Cost the pulp and paper industry significantly more for permitting and implementation of additional SO_2 or NO_X controls than predicted by EPA; (2) impose a large permitting review burden on State air quality offices; and (3) present difficulties for mills to meet the proposed NESHAP compliance schedule of 3 years due to the time required to obtain a preconstruction permit. Industry commenters have stated that the pollution control project

maintenance activities that are discussed in the Part 63 General Provisions. The allowances address normal operating variations in the LVHC and HVLC system control devices for which the equipment is designed. The variations would not be considered startup, shutdown, or malfunction under the Part 63 General Provisions (Air Docket A–92–40, IV–D1–103, IV–D1–110, IV–D1–115, IV–E–85, and IV–E–88).

The appropriate excess emissions allowance for steam stripper systems was determined to be 10 percent. The allowance accounts for stripper tray damage or plugging, efficiency losses in the stripper due to contamination of condensate with fiber or black liquor, steam supply downtime, and combustion control device downtime. This downtime allowance includes all periods when the stripper systems are inoperable including scheduled maintenance, malfunctions, startups, and shutdowns. The startup, shutdown, malfunction allowances are included in the stripper allowances because information was not available to differentiate these emissions from normal stripper operating emissions.

Regarding the commenters' discussion of whether the startup, shutdown, or malfunction provisions of the General Provisions would cover maintenance and troubleshooting downtime, EPA has taken public comment and is currently revising the requirements of the General Provisions. Among the changes to the language, EPA intends to incorporate safety-related venting requirements into the General Provisions. However, scheduled maintenance activities are not considered by EPA to qualify for excess emissions allowances. The start-up, shutdown, and malfunction plan specified in the General Provisions should address the periods of excess emissions that are caused by unforeseen or unexpected events.

10. Equipment Enclosures, Closed-Vent Systems, and Control Equipment, and Condensate Conveyance System

a. Requirements for Closed-Vent Systems. At proposal, the Agency required specific standards and monitoring requirements for closed-vent systems. The standards required: (1) Maintaining a negative pressure at each opening, (2) ensuring enclosure openings that were closed during the performance test be closed during normal operation, (3) designing and operating closed-vent systems to have no detectable leaks, (4) installing flow indicators for bypass lines, and (5) securing bypass line valves. Monitoring requirements included visual inspections of seal/closure mechanisms and closed-vent systems, and demonstrations of no detectable leaks in the closed-vent system.

Commenters to the proposed NESHAP contended that visual inspections were not necessary due to durability of the materials used by this industry to construct the collection system. In addition, commenters contended that leak detections were not necessary since systems are typically operated at negative pressure. The commenters also opposed requirements for seals and locks on bypass lines because the bypass lines are installed for purposes of personnel safety, equipment protection, and to prevent explosions.

The Agency evaluated the comments and has decided to make the following changes to the closed-vent system requirements. The Agency agreed with the commenters that most closed-vent systems will be under negative pressure. Any leaks, therefore, would pull air into the collection system rather than release HAPs to the atmosphere. Therefore, the Agency revised the requirement for demonstration of no detectable emissions to apply only to portions of the closed-vent system operated under positive pressure. The Agency also agreed that requiring a lock and key-type seal on bypass lines would be overburdensome and could potentially pose a safety hazard. The intention of the requirements was to prevent circumvention of the control device by venting directly to the atmosphere. The Agency believes that this assurance can be achieved using car seals or seals that could easily be broken, to indicate when a valve has been turned. Proper recordkeeping is also necessary to demonstrate proper operation. Therefore, the Agency revised the bypass line requirements to allow the use of car seals but require log entries recording valve position, flow rate, and other parameters. The Agency has modified the enclosure requirements to allow for short-term openings for pulp sampling and maintenance.

The final rule retains the visual monitoring requirements. The requirements are necessary to ensure proper operation of collection systems and can be conducted at a reasonable cost.

b. Concentration Limit for Combustion Devices and Design Incinerator Operating Parameters. At proposal, the NESHAP would have required vent streams to be controlled in a combustion device that achieves 98 percent reduction of HAPs or outlet HAP emission concentrations of 20 ppmv corrected to three percent oxygen. Alternatively, mills could comply with the control requirements by routing vent streams to a design incinerator operating at 1,600 °F and a residence time of 0.75 seconds, or to a boiler, lime kiln, or recovery furnace.

Commenters on the proposed rule objected to the 20 ppmv limit at a three percent oxygen correction factor. Some commenters claimed that incinerator exhaust streams in the pulp and paper industry have an oxygen content in excess of 10 percent. Therefore, if the outlet concentration was corrected to three percent oxygen, the concentration level would not be achievable. Some commenters recommended increasing the correction factor to 10 percent oxygen.

The 20 ppmv limit represents the performance that is achieved on low concentration streams by a well designed combustion device. This limit was based on previous EPA studies (Air Docket A–79–32, II–B–31). The three percent oxygen correction factor at proposal was based on stream characteristics of other industries, such as the synthetic organic chemical manufacturing industry. The three percent correction factor has been used on many previous standards for controlling organic pollutants. EPA re-evaluated the three percent correction factor to ensure that it is appropriate for the pulp and paper industry. Test data supplied by the industry confirmed their comments that the oxygen content of the incinerator flue gas is typically greater than ten percent at pulp and paper mills. Based on the industry data and the thermodynamic models, EPA changed the oxygen correction factor to ten percent (Air Docket A–92–40, IV–B–19). Therefore, the final rule allows combustion devices to be in compliance if they reduce HAP concentrations to 20 ppmv at ten percent oxygen. Information supplied by the pulp and paper industry indicates that many of the existing incinerators meet this limit.

Commenters on the proposed rule objected that the requirements for the design incinerator were too stringent and that equivalent control could be achieved at lower temperatures. Many commenters requested that the Agency allow incinerators meeting the operating conditions in the kraft NSPS of 1,200 °F and 0.5 seconds residence time to be used for the NESHAP.

EPA has decided not to change the proposed design incinerator operating parameters for the NESHAP because the parameters are necessary to meet the MACT floor. EPA would first like to clarify that the final rule does not limit owners or operators of incinerators to operate at the specified temperatures and residence times. Any control device

worker safety reasons and the emissions of chlorinated, non-chloroform HAPs. The Agency's concern (shared by the commenters who addressed this question) is that immediate control of the non-chloroform chlorinated HAPs could easily result in plants having to install and then replace a caustic scrubber system in a few years due to promulgation of effluent limitations guidelines and standards and MACT requirements for chloroform. This result would be an inappropriate utilization of scarce pollution control resources.

8. Test Methods

At proposal, the Agency proposed to require that Methods 308 and 26A be used to test for compliance with the provisions of the NESHAP. Method 308 is used to measure methanol in the vent stream. Method 308 had not been validated using Method 301 at the time the NESHAP was proposed. Method 26A is used to measure chlorine in vent streams.

At proposal, commenters objected to the rule referencing an unvalidated test method (Method 308). The commenters also contended that Method 26A should not be used for measuring chlorine in the bleaching system because chlorine dioxide, which is expected to be present in bleaching system vents, is listed as a possible interferant in Method 26A. The commenters suggested using a modified Method 26A developed by the pulp and paper industry.

Since proposal, Method 308 was revised to incorporate suggestions made and data provided by representatives of the pulp and paper industry.

Since proposal, Method 308 has also been validated using Method 301 validation criteria. The validation was conducted by the Atmospheric Research and Environmental Analysis Laboratory in EPA's Office of Research and Development. The results of the validation were reported in the January 1995 issue of the *Journal of the Air and Waste Management Association*. The Agency has also evaluated the commenters' claims regarding Method 26A. The Agency agrees that chlorine dioxide is a potential positive interferant to the method (i.e., concentration measurement could potentially be higher than actual emissions). The final rule includes modifications to Method 26A (based on an NCASI method) to eliminate potential problems with chlorine dioxide interference.

In March 1997, industry informed EPA that it had not used Method 305 to obtain the methanol steam stripper performance data (which was used as the basis for the proposed pulping process condensate standards). For the liquid sampling analysis, NCASI used a direct aqueous injection gas chromatography/flame ionization detection (GC/FID) method described in NCASI Technical Bulletin No. 684. Appendix I. Consequently, the industry contends that Method 305 should not be specified in the final rule for determining compliance with the pulping process condensate standards. However, the NCASI test method has not been validated using EPA Method 301 procedures and it is unlikely that the test method validation would be completed before promulgation of the MACT standard.

The Agency has considered industry's argument and has decided to proceed with specifying Method 305 in the final rule to demonstrate compliance with the pulping process condensate standards. However, if the Agency approves the Method 301 validation procedures for NCASI's GC/FID test method, this method will be referenced as either an alternative or a replacement for Method 305 (for determining methanol concentration only) with a supplemental **Federal Register** notice. EPA believes that this course of action will adequately address the industry's concerns. This decision was reached since the Method 301 validation procedures for NCASI's GC/FID method would likely be completed before kraft mills would have to demonstrate compliance with the pulping process condensate standards.

9. Backup Control Devices and Downtime

The proposal would have required emission limits for the NESHAP to be met at all times, except during periods of startup, shutdown, or malfunction. Allowance for control device or collection system downtime was not specified in the proposed rule, and the need for backup control devices was not addressed.

Commenters asserted that EPA should recognize that control technologies on which the proposed rule was based are not designed to operate 100 percent of the time. Therefore, commenters requested downtime allowances to account for safety related venting and periods when the control device is inoperable. Otherwise, the commenters asserted that costly backup control devices would be necessary to achieve compliance with the NESHAP at all times. They further contended that the environmental benefit for the additional cost associated with the backup controls would be minimal. Commenters recommended a one percent downtime for the LVHC system, four percent for the HVLC system, and ten percent for steam stripper systems. Commenters contended that while most of the LVHC systems had backup controls, very few of the HVLC systems had backup controls. Several commenters added that the Part 63 General Provisions do not address safety venting and downtime necessary for trouble-shooting. Another commenter contended that the Part 63 General Provisions already allow significant emissions and should not be further weakened.

Since proposal, EPA has re-evaluated the need to incorporate downtime or excess emission allowances for LVHC, HVLC, and steam stripper systems into the final rule. Based on data submitted by the pulp and paper industry, EPA has concluded that some allowance for excess emissions is part of the MACT floor level of control. For the final rule, EPA established appropriate excess emission allowances to approximate the level of backup control that exists at the best-performing mills and the associated period of time during which no control device is available. The excess emission allowances in the final rule include periods when the control device is inoperable and when the operating parameter values established during the initial performance test cannot be maintained at the appropriate level.

Based on an analysis of the public comments and the available data regarding excess emissions and the level of backup control in the industry, EPA has determined that an appropriate excess emissions allowance for LVHC systems would be one percent of the operating hours on a semi-annual basis for the control devices used to reduce HAP emissions. The best-performing mills achieve a one percent downtime in their LVHC system control devices. For control devices used to reduce emissions from HVLC systems, EPA has concluded that an appropriate excess emissions allowance would be four percent. The best-performing mills achieve a four percent downtime in the control devices used to reduce emissions from their HVLC system to account for flow balancing problems and unpredictable pressure changes inherent in HVLC systems. For control devices used to control emissions from both LVHC and HVLC systems, the Agency has determined that a four percent excess emissions allowance is appropriate. This decision was made because the control device would be used for the HVLC system, which has the higher emissions allowance. For LVHC and HVLC system control devices, the excess emissions allowances do not include scheduled

the non-chloroform chlorinated HAPs and, in some cases, a scrubber may not be needed at all to meet the MACT standards for chlorinated HAP concentration limit. Thus, a mill otherwise interested in participating in the Voluntary Advanced Technology Incentives Program will find itself diverting capital to environmental controls that it ultimately will not need, instead of employing that capital to make more advanced process modifications that will benefit both the water and the air.

Under these unusual circumstances where imposition of MACT requirements could likely result in foregoing substantial cross-media environmental benefits, EPA believes that a two-stage MACT compliance scheme is justified for existing sources at bleached papergrade kraft and soda mills that enroll in the water Voluntary Advanced Technology Incentives Program (see 61 FR 9394 for a similar argument relating to compliance with MACT for washers and oxygen delignification systems). The first stage is an interim MACT of no backsliding—which reflects the current level of air emissions control. The second stage requires compliance with revised MACT based on baseline BAT requirements for all parameters for bleached papergrade kraft and soda mills. (The second stage in effect revises MACT to reflect the control technologies which will be available at this later date. See CAA § 112 (d)(6).) The no-backsliding provisions apply to the period from June 15, 1998 until compliance with the second-stage MACT standards is required April 15, 2004. This two-step alternative is available only to bleached papergrade kraft and soda mills actually making the binding decision to comply with Tier I, II, or III water limitations.

EPA believes that providing these mills six years to comply with second-stage MACT (i.e., baseline BAT requirements for all parameters) is an appropriate and logical outgrowth of the discussions set forth in the March 8, 1996 supplemental MACT notice (61 FR 9393) and the July 15, 1996 supplemental effluent guidelines notice (61 FR 36835–58). In the March 8 notice, EPA solicited comments on its preliminary findings that MACT for chloroform air emissions should be compliance with baseline BAT. Commenters agreed with this preliminary determination. In the July 15 notice, EPA set forth its vision of more stringent BAT for mills that voluntarily enter the Advanced Technologies Incentives program. As part of that voluntary program under the water standards, EPA is promulgating a requirement that mills in Tiers II and III, at a minimum, meet all the limitations promulgated as baseline BAT no later than April 15, 2004. See Section IX.A. Thus, more stringent air emission controls than stage one MACT will likewise be available at this time since compliance with these interim BAT limitations will result in compliance with MACT. For Tier II and Tier III mills, this means that the second stage MACT requirement is compliance with the baseline BAT limitations by April 15, 2004. The same is the case for Tier I mills, even though under the water regulation Tier I mills will be required to achieve more stringent limitations at that time. EPA is defining MACT to be the baseline BAT limitations even in this situation because compliance with the more stringent AOX limitations and other requirements unique to Tier I are unnecessary to control chloroform emissions at these mills.

EPA further believes that most plants likely to elect to comply with a tier option already control air emissions of chlorinated HAPs (both chloroform and other chlorinated HAPs) through application of the MACT technologies (process substitution for chloroform and caustic scrubbing for the remaining chlorinated HAPs). Thus, there will be some control of the emissions from these bleaching operations during the time preceding compliance with the second stage of MACT. To ensure that there is no lessening of existing controls, EPA also is promulgating a no backsliding requirement as an interim MACT—reflecting current control levels. During the extended compliance period, mills thus may not increase their application rates of chlorine or hypochlorite above the average rates determined for the three-month period prior to June 15, 1998.

In the March 8 notice, the Agency proposed making a distinction between requirements for bleaching systems at papergrade and dissolving grade mills. The Agency solicited data concerning chloroform emissions from dissolving grade bleaching processes and requested comment on an appropriate chloroform MACT for dissolving grade bleaching systems. Several commenters suggested that a separate MACT standard for chloroform be developed for bleaching systems at dissolving grade mills. Some commenters requested that the Agency defer chloroform control requirements for dissolving grade mills until effluent limitations guidelines and standards are established at those mills.

As stated in the July 15, 1996 **Federal Register** notice (61 FR 36835), EPA is evaluating new data on the technical feasibility of reducing hypochlorite usage and implementing high levels of chlorine dioxide substitution on a range of dissolving grade pulp products. Therefore, EPA is deferring issuing effluent limitations guidelines and standards for dissolving grade mills until the comments and data can be fully evaluated. EPA expects to promulgate final effluent limitations guidelines and standards for dissolving grade subcategories at a later date.

EPA has decided to delay establishing these MACT standards for chloroform and for other chlorinated HAPs for dissolving grade bleaching operations until promulgation of effluent limitations guidelines and standards for those operations, for the following reasons. With respect to the MACT standard for chloroform, first, as explained above and in the March 8 notice, the control technology basis for the effluent limitations guidelines and standards and the MACT requirements will be the same. Second, at present, the Agency is unsure what level of chlorine substitution and hypochlorite use is achievable for dissolving grade mills. Thus, although EPA has a reasonably good idea what the technology basis of MACT and effluent limitations guidelines and standards is likely to be for dissolving grade mills, the precise level of the standards remains to be determined. Consequently, at present, EPA is unable to establish what the MACT floor would be for chloroform emissions from bleaching systems at these mills, and there is no conceivable beyond-the-floor technology to consider. EPA will make these determinations based on data being developed, and then promulgate for these mills effluent limitations guidelines and standards and, concurrently, MACT standards based on those effluent limitations guidelines and standards. Covered mills would therefore be required to comply with the MACT standards reflecting performance of the effluent limitations guidelines and standards no later than three years after the effective date of those standards, pursuant to CAA section 112(i)(3)(A).

The basis for delaying MACT requirements for chlorinated HAPs other than chloroform (again, from dissolving-grade bleach operations only) differs somewhat. As noted above, the technology basis for control of these HAPs is use of a caustic scrubber. However, when plants substitute chlorine dioxide for chlorine and eliminate hypochlorite (in order to control chloroform emissions and discharges to water, as explained above), a different scrubber will be needed that can adequately control both the chlorine dioxide emissions for

allows more flexibility for sources affected by this rule, does not penalize bleaching systems operating with low-flow technology, and will provide reductions in chlorinated HAP emissions (other than chloroform) equivalent to the 99 percent reduction standard. Therefore, the final rule allows sources to comply with the bleaching system requirements if they achieve an scrubber outlet mass emission limit at or below 0.001 kg of total chlorinated HAP (other than chloroform) per Mg ODP produced. Chlorine may be used as a surrogate for measuring total chlorinated HAP.

After proposal, the Agency also evaluated the effect of process modifications on chloroform emissions. The results of this analysis indicated that the technology basis for MACT control of chloroform is complete chlorine dioxide substitution and elimination of hypochlorite as a bleaching agent. These process modifications were determined to reduce chloroform emissions significantly. At the same time, EPA was proposing complete chlorine dioxide substitution and hypochlorite elimination as the technology bases for the effluent limitations guidelines and standards under Subparts B and E (see 58 FR at 66109–11, 14–15). Since the control technologies that would be installed to comply with effluent limitations guidelines and standards and MACT would likely be the same for these bleached papergrade mills, EPA therefore proposed in the March 8 notice that chloroform air emissions at bleached papergrade mills be controlled by complying with the effluent limitations guidelines and standards applicable to those mills. No adverse comments were received on this proposal.

In the March 8, 1996 notice, the Agency solicited comments on whether an alternative numerical air emission limit for chloroform (i.e., besides complying with the effluent limitations guidelines and standards) was needed. Some commenters contended that a numerical air emissions limit for chloroform would be unnecessary because the effluent limitations guidelines and standards would achieve the requisite reductions. The Agency did not receive any indication of any benefit from a numerical air emission limit for chloroform. Additionally, the Agency did not have sufficient data and did not receive any further data after the March 8 notice to develop a numerical air emission limit (and hence is finding that a numerical standard is not feasible for purposes of CAA § 112(h)). Therefore, the final rule does not include a numerical air emission limit for chloroform (see the proposal at 58 FR 66142 for a discussion on setting MACT standards in a format other than an emission standard). The Agency is, however, providing an alternative compliance mechanism in the form of a work practice standard of complete substitution of chlorine dioxide for elemental chlorine and complete hypochlorite elimination—the technical basis for BAT. (EPA also notes that although the Agency's technical judgment is that compliance with BAT also will result in control of air emissions to reflect the MACT level of control, the Agency will continue to investigate whether this proves correct as the rule is implemented.)

Because MACT for new sources is equivalent to MACT for existing sources, the new source MACT standards for bleaching systems require compliance with BAT/PSES requirements (or implementation of 100 percent substitution and elimination of hypochlorite). This requirement applies even if the mill or bleaching system also meets the definition of new source under the effluent guidelines limitations and standards, and thus is required to meet the more stringent new source effluent requirements of NSPS/PSNS. Although achievement of the NSPS/PSNS may result in installation of technologies that reduce effluent loading beyond what is achieved by 100 percent substitution and elimination of hypochlorite, EPA is not aware that these advanced technologies will provide air emission reductions beyond what the BAT/PSES requirements will achieve.

EPA notes that an affected bleached papergrade mill must comply with the existing source MACT requirements no later than April 16, 2001 even if the mill's existing Clean Water Act NPDES permit does not yet reflect the corresponding effluent limitations guidelines and standards because its existing terms have not expired or it has been administratively extended. Put another way, even if a mill's existing NPDES permit serves as a shield (until reissuance) against imposition of new limits based on new effluent limitations guidelines (see CWA Section 402(k)), the MACT requirement for bleached papergrade mills to control chloroform emissions through compliance with all parameter requirements in the effluent limitations guidelines and standards takes effect to satisfy the requirements of the Clean Air Act. Similarly, if a bleached papergrade mill's NPDES permit is reissued sooner than the expiration of the 3-year compliance schedule authorized for the chloroform MACT requirements and calls for immediate compliance with the BAT limitations, that deadline would prevail. The same principles will apply when effluent limitations guidelines and MACT standards are promulgated for dissolving grade mills. EPA's plans for promulgating MACT standards for these mills are discussed immediately below.

An additional issue relating to compliance dates concerns bleaching systems at existing source papergrade kraft and soda mills which have elected, under the Clean Water Act portion of this rule, to treat wastewater to levels surpassing baseline BAT requirements (such as adding oxygen delignification prior to bleaching, and in some cases, engaging in additional reduction of process wastewater and further reductions in chlorinated bleaching chemicals used and bleaching system modifications than are necessary to meet BAT baseline limitations). As an incentive to make this election, EPA is not requiring participating mills to achieve compliance with the more stringent portions of the "Advanced Technology" BAT limitations for six, eleven, and sixteen years (for Tiers I, II, and III, respectively) in order to afford these mills sufficient time to develop, finance, and install the Advanced Technologies. In light of this, the Agency is concerned that requiring bleached papergrade kraft and soda mills to comply in three years with MACT standards based on process substitution of chlorine dioxide for elemental chlorine would discourage these mills from electing to participate in the Advanced Technology program. This is largely because a mill that implements process substitution before it installs oxygen or other extended delignification systems is likely to construct more chlorine dioxide generating capacity than it ultimately will need. A mill thus compelled to invest first in process substitution may be very reluctant to abandon a portion of that investment soon afterwards in order to participate in the voluntary incentives program.

EPA also believes that requiring compliance in three years with a chloroform MACT standard based on baseline BAT for bleached papergrade kraft and soda mills would present similar disincentives to achieving greater effluent reductions. A mill in those circumstances will have made a substantially larger capital investment than it will need to control chloroform once its array of advanced water technologies is installed. Also, depending on the degree of process modifications the mill makes, the mill may need a much smaller scrubber for

of control for papermaking systems is no control. EPA evaluated two possible control options for papermaking systems: (1) Removal of HAPs from the pulp stock and whitewater before the papermaking system; and (2) control of papermaking system vent streams. Analysis of these control options showed that there are no demonstrated methods for removing HAPs from the pulp stock or whitewater and that applying HAP control to the vent streams of papermaking systems is not cost-effective (Air Docket A–95–31, IV–B–8). Therefore, EPA is not requiring HAP control beyond the floor.

In the March 8, 1996 notice, EPA indicated that it was investigating the use of HAP-containing additives in papermaking systems, the magnitude of HAP emissions resulting from the use of papermaking system additives, and the viability of a MACT standard based on additive substitution. EPA has concluded that based on emission test reports and a survey conducted on additive use, additives do not contribute significantly to HAP emissions (Air Docket A–95–31, Item IV–B–6). The amount of HAPs contained in additives used by the paper industry for papermaking systems is relatively low, an estimated 236 tpy in 1995. Furthermore, less than 20 percent of HAPs contained in the additives is emitted to the air. About 80 percent of the HAPs remain on the paper or in the whitewater. Consequently, total annual HAP emissions attributable to additives are an estimated 50 tons per year, industry-wide. In comparison to the baseline emission level of 210,000 tons per year of total HAPs from the entire pulp and paper industry, the contribution of HAPs from papermaking system additives is negligible (Air Docket A–95–31, IV–B–6).

In a meeting between EPA and several representatives of the Chemical Manufacturers Association (CMA), CMA stated that members have been working to reduce HAP and solvent use in papermaking system additives over the past 15 years, even in the absence of regulations. Reductions have been achieved and CMA expects these efforts to continue. CMA noted that HAP-free alternatives may not be possible for all types of additives, as some HAPs are critical to product performance. EPA believes that low-HAP additive substitution is product-specific and it is not clear from the available information that substitution options are technically feasible (Air Docket A–95–31, IV–E–5). Therefore, EPA has concluded that a MACT standard for papermaking systems based on low-HAP additive substitution is not warranted.

In the March 8, 1996 notice, EPA proposed no standards for pulping systems at mechanical, secondary fiber, or non-wood fiber pulping mills. Information available to EPA indicated that no pulping systems at these mills are operating with HAP controls. Therefore, EPA has concluded that the floor for pulping systems at these mills is no control. EPA evaluated the feasibility of going beyond the floor and requiring HAP controls for these sources. Specifically, EPA investigated the feasibility of routing vent streams from these pulping systems to a combustion device for HAP control. EPA determined that the cost of combusting the vent streams was not justified by the HAP emission reductions achieved, and that requiring HAP control beyond the floor was not justified. Furthermore, pulping chemical usage, which correlates with HAP emission levels at kraft, semi-chemical, soda, and sulfite pulping mills, is much lower at non-wood fiber and secondary fiber pulping mills and minimal at mechanical pulping mills; thus the potential for HAP emissions is lower (Air Docket A–95–31, IV–B–7).

7. Bleaching System Standards

In the proposed rule, bleaching systems would have been required to control all HAP emissions by 99 percent using a caustic scrubber. In the March 8, 1996 supplemental notice, the Agency revised the proposal for the bleaching system requirements based on information and comments received after proposal. The new data indicated that caustic scrubbing reduces emissions of chlorinated HAP compounds (except chloroform), but does not control non-chlorinated HAP emissions. The Agency determined that no other option was feasible to control non-chlorinated HAPs. EPA has determined that reduction of chloroform emissions through the use of additional, add-on air pollution control technology is cost prohibitive. The only feasible option for controlling chloroform emissions is process modification, such as chlorine dioxide substitution and elimination of hypochlorite use.

In the March 8 notice, the Agency proposed to require chlorinated HAP emissions other than chloroform to be controlled by 99 percent (with chlorine as a surrogate for chlorinated HAP) based on the performance of a caustic scrubber. As an alternative to the percent reduction standard, the Agency also proposed an emission limit of 10 ppmv chlorinated HAP at the caustic scrubber outlet (with chlorine as a surrogate for chlorinated HAP). The Agency also solicited comments on providing a mass emission limit alternative to the percent reduction and the outlet concentration standards.

Commenters on the March 8, 1996 notice supported the changes to the scrubber requirements in the proposed rule. Commenters also expressed concern that bleaching systems with new low-flow vent systems would not be able to meet either the percent reduction or the outlet concentration standards. Therefore, they asserted, these standards would discourage the use of new low-flow bleaching vent technologies. Based on this concern, one commenter advocated a chlorinated HAP mass emission limit for bleaching systems of 0.023 lb of chlorinated HAP (excluding chloroform) per ODTP produced. The commenter claimed that a mass emission limit would not penalize new low-flow bleaching vent systems.

Based on available data, the Agency has concluded that low-flow bleaching vent systems can achieve the 99 percent reduction and the 10 ppmv outlet concentration requirements for total chlorinated HAP (other than chloroform). Based on a review of the information provided by the commenter and the available data on bleaching system emissions, the Agency has concluded that the commenter's recommended mass emission limit of 0.023 lb of chlorinated HAP (excluding chloroform) per ODTP produced is too high. The Agency evaluated the available data used to develop the percent reduction and outlet concentration requirements for bleaching systems (A–92–40, II–I–24). From this evaluation, the Agency determined that a scrubber outlet mass emission rate of 0.001 kg of total chlorinated HAP (other than chloroform) per Mg ODP produced (0.002 lb/ODTP) would provide reductions equivalent to 99 percent reduction standard (A–92–40, IV–B–29). The mass emission limit of 0.001 kg of chlorinated HAP (other than chloroform) per Mg ODP produced represents a mass emission limit achievable by all units that also achieved 99 percent reduction of chlorine. Furthermore, the available data show that some of the scrubbers achieving the 99 percent chlorine reduction standard, and the 10 ppmv outlet concentration limit, were also operating on low-flow bleaching vent systems.

For the final rule, the Agency has provided a mass emission limit option for bleaching systems of 0.001 kg of chlorinated HAP (excluding chloroform) per Mg ODP produced (0.002 lb/ODTP). The Agency maintains that this option

n emission characteristics. Existing oda and semi-chemical mills would be equired to control the digester and vaporator systems (LVHC system). New oda and semi-chemical mills would be equired to control the LVHC and the ulp washing systems. EPA solicited omments on this proposed change.

Information provided by the pulp and paper industry in survey responses and after proposal confirmed that the MACT floor level of control at existing semi-chemical mills is collection and control of the LVHC system. The Agency determined that it was not reasonable to control other emission points at existing semi-chemical mills (Air Docket A–92–40, IV–B–12). Data indicated that the best-controlled semi-chemical mills combust LVHC system emissions and emissions from pulp washing systems. Therefore, the final rule requires that existing semi-chemical mills control the LVHC system, and new semi-chemical mills control the LVHC and the pulp washing systems.

As discussed in the March 8, 1996 notice, the MACT floor level of control for soda mills is no control. The Agency has determined that HAP emissions from soda mills are similar to kraft mills (with the exception that TRS compounds are not emitted from the soda pulping process) and control of LVHC system vents is technically feasible and can be achieved at a reasonable cost. The Agency has also determined that controlling additional vents at existing sources cannot be achieved at a reasonable cost. However, controlling the pulp washing system at new soda mills can be achieved at a reasonable cost (Air Docket A–92–40, IV–B–12). Therefore, the final rule requires that existing soda mills control the LVHC system, and new soda mills control the LVHC and the pulp washing system.

6. Mechanical Pulping Mill, Secondary Fiber Pulping Mill, Non-wood Fiber Pulping Mill, and Papermaking System Standards

In the March 8, 1996 **Federal Register** notice, EPA proposed standards for pulping and bleaching processes at mechanical pulping mills, secondary fiber pulping mills, and non-wood fiber pulping mills. As discussed in the proposal, EPA believes that there are no air pollution control technologies in use on these processes except for those installed on bleaching systems using chlorine. The March 8 notice proposed no add-on controls for pulping systems (and the associated wastewater), papermaking systems, and nonchlorine bleaching systems for these mills. For traditional bleaching systems using chlorine, the proposed control was based on the performance of caustic scrubbers. The proposal stated that EPA would continue to investigate the use of HAP chemicals in papermaking, the magnitude of HAP emissions, and the viability of chemical substitution to reduce HAP emissions from papermaking systems.

Some commenters questioned EPA's proceeding with the rule in advance of the receipt of additional industry data that was being collected. The commenters cautioned that EPA did not have sufficient data on which to base a rule. Since the March 8, 1996 **Federal Register** proposal, EPA has received the results of the NCASI-sponsored testing program from these sources (A–92–40, IV–J–80 through IV–J–85). These data have been used in the determination of the final standards for these sources in today's rule. EPA has concluded that sufficient data have been collected to include these sources in today's action.

Commenters agreed with EPA's March 8, 1996 proposal for bleaching systems at these mills. Comments on the March 8 proposal supported the conclusion that caustic scrubbers are in use only on chlorine and chlorine dioxide bleaching systems. Furthermore, information available to EPA indicate that non-wood pulping mills typically use chlorine or chlorine dioxide bleaching systems. For chlorine and chlorine dioxide bleaching systems, EPA determined that scrubbers are used to control chlorinated compound emissions for process and worker safety reasons. Thus, the control achieved by this technology represents the floor for chlorine and chlorine dioxide bleaching systems at these mills and is the technological basis for the standard in today's rule. As stated in the December 17, 1993 proposal, EPA analyzed more stringent controls, such as combustion of bleaching vent gases after caustic scrubbing, for bleaching systems at kraft, soda, and sulfite mills. EPA has determined that these more stringent options are unreasonable considering cost and environmental impacts. Because of the operational similarities of the chlorine and chlorine dioxide bleaching systems at non-wood fiber mills to those at kraft, soda, and sulfite mills, EPA has concluded that combustion following caustic scrubbers is also not cost-effective at non-wood fiber mills. In addition, data available to EPA indicate that HAP emissions from chlorine bleaching systems at these mills are relatively low. In fact, the data show that the three largest non-wood pulping mills, of the ten currently in operation, use elemental chlorine in their bleaching systems and total HAP emissions from each of these three mills is less than five tons of total HAP per year (Air Docket A–95–31, IV–B–5).

For chlorine and chlorine dioxide bleaching systems at mechanical pulping mills, secondary fiber pulping mills, and non-wood pulping mills, today's rule requires the same level of control required for bleaching systems at kraft, soda, and sulfite mills. Those requirements are specified in § 63.445 (a)–(c) of today's rule. However, § 63.445 (d) and (e) do not apply to these mills since there are no effluent limitation guidelines for control of chloroform at mechanical, secondary fiber, and non-wood fiber pulping mills. Additional requirements for the control of chloroform emissions, based on the effluent limitation guidelines for best available technology economically achievable, are required in the standards for bleaching systems for kraft, soda, and sulfite mills. However, EPA is not aware of any controls presently in place or available for reducing chloroform air emissions at mechanical, secondary fiber, and non-wood pulping mills. Therefore, MACT is no control for chloroform air emissions from bleaching systems at mechanical, secondary fiber, and non-wood fiber pulping mills.

Since the March 8 proposal, EPA has also determined that while mechanical pulping, secondary fiber pulping, and other non-wood pulping mills do not typically use chlorine or chlorine dioxide bleaching, these mills may brighten the pulp stock through the use of hypochlorite and non-chlorine bleaching compounds. However, data available to EPA indicate that HAP emissions from these systems are relatively low, and that none of the bleaching systems that use hypochlorite and non-chlorine compounds have installed emission controls. Based on these findings, EPA established the MACT floor for bleaching systems at these mills that use hypochlorite and non-chlorine bleaching to be no control. EPA considered going beyond the floor and requiring HAP control through incineration of vent streams for these sources but determined that the minimal level of HAP emission reductions that would be achieved did not justify going beyond the floor (Air Docket A–95–31, IV–B–5).

In the March 8, 1996 **Federal Register** notice, EPA proposed no standards for papermaking systems. The three potential sources of HAP emissions from papermaking systems are HAPs contained in the pulp stock, HAPs contained in the whitewater, and HAPs from additives and solvents. Information available to EPA indicated no papermaking systems are operating with HAP controls; thus the floor level

removal of soluble BOD_5, the biological treatment system was operating properly and that the unit would be meeting the standards. However, industry argued that soluble BOD_5 removal should not be a continuous monitoring parameter that if exceeded, would indicate a violation of the standards. Rather, a mill should be allowed to start measuring methanol removal across the system to verify compliance.

The Agency considered the comments and data received and agrees that the provisions in Appendix C of the HON are an acceptable alternative to Method 304 for calculating site-specific biorate constants. However, EPA disagrees with the commenters on the issue of the need to conduct performance testing. While EPA agrees that methanol degrades more rapidly than many compounds, there are other HAPs present in the condensate streams subject to the standards, and biological treatment systems can vary widely in their operation and performance, depending on their design, maintenance, and even their geographical location. As such, the final regulation retains the proposed requirements for performance testing.

EPA also became concerned that allowing the use of methanol as a surrogate for total HAP may not be appropriate for this particular treatment technology. Because methanol is one of the most difficult HAPs to remove with a steam stripper (the technology on which the standards are based), even greater removals of total HAP would occur when a steam stripper is used. Thus, methanol is a reasonable surrogate under such conditions. The opposite is true for biological treatment systems, where methanol is one of the easier HAPs to degrade. As such, the final regulation specifies that a total HAP removal (not just methanol) of 92 percent be achieved by biological treatment systems.

EPA agrees with the commenters that soluble BOD_5 is an appropriate monitoring parameter for biological treatment systems. However, EPA disagrees with the commenters on their position regarding the monitoring of soluble BOD_5 and operating parameters for demonstrating continuous compliance. After discussion with the industry on this issue, EPA has concluded that soluble BOD_5 and operating parameters are the most appropriate means available for monitoring to demonstrate continuous compliance (A–92–40, IV–E–87). EPA understands the concerns raised on this point, and as such the final regulation provides flexibility. The regulation allows mills to establish, through performance testing, their own range of treatment system outlet soluble BOD_5 and operating parameter values to monitor. The final rule also allows owners and operators to demonstrate compliance with the standard using the WATER8 model and inlet and outlet samples from each biological treatment system unit when the specified monitoring parameters are outside of the range established during the initial performance test.

4. Sulfite Standards—Emission Limits for Sulfite Pulping Processes

In the March 8, 1996 supplemental notice (61 FR 9383), the Agency presented potential changes to the proposed standards for sulfite pulping processes. EPA had proposed that all pulping equipment at kraft, sulfite, soda, and semi-chemical processes must be enclosed and routed to a control device achieving 98 percent reduction in emissions. In the March 8 notice, the Agency proposed that the MACT floor level of control at existing sulfite processes was control of vents from the digester system, evaporator system, and pulp washing system. The MACT floor level of control at new sulfite processes would be control of the equipment systems listed for existing sources, plus weak liquor tanks, strong liquor storage tanks, and acid condensate storage tanks. In the March 8 notice, the Agency discussed in detail its preliminary determination that the sulfite standards should instead apply to the total emissions from specific named vents and to any wastewater emissions associated with air pollution control devices used to comply with the rule. For calcium-based sulfite pulping processes, the new proposed emission limit was 0.65 lb methanol/ODTP and the percent reduction was 92 percent. For ammonium-and magnesium-based sulfite pulping processes, the new proposed emission limit was 1.10 lb methanol/ODTP, and the percent HAP reduction was 87 percent. The Agency developed applicability cutoffs based on methanol because only methanol emissions data were obtained for all of the equipment systems and wastewater streams considered for control at sulfite mills. The test data from sulfite mills also indicated that for the equipment systems tested for other HAPs, methanol comprised the majority of HAP emissions. Therefore, the Agency believes that the maximum control of HAP emissions will be achieved by controlling methanol as a surrogate.

Several commenters objected that the proposed emission limits were not appropriate because they were based on data that only indicated possible levels of methanol emissions and not a rigorous assessment of emission rates. The commenters contended that the proposed emission limits were derived from limited data which may not be representative of the range of mills in the industry; therefore, they argued, the limits did not account for variability in emissions and are not achievable. The commenters provided the Agency with emissions test data that illustrated fluctuations in the methanol mass emissions over an extended time period due to variations in products and process conditions.

The Agency evaluated the information provided by the commenters and subsequently agreed with the commenters regarding process variability at sulfite mills. The Agency determined the amount of variability associated with a 99.9 percent confidence level in the data supplied by the commenters (Air Docket A–92–40, IV–B–20). This amount of variability (confidence interval), therefore, was applied to the average emission limits from the best controlled mills to develop the final emission limit.

For ammonium- and magnesium-based sulfite pulping processes, the final emission limit is 1.1 kilograms of methanol per megagram of ODP produced. After the close of the March 8, 1996, **Federal Register** supplemental notice comment period, additional information was provided to the Agency that indicated that the sodium-based sulfite pulping process is in use at some mills (A–92–40, IV–E–94). No emissions information was available for this process. However, the Agency determined, that due to the similarities in processes between calcium- and sodium-based sulfite pulping processes, the same limit developed for calcium-based mills would be applicable to sodium-based mills. For calcium- and sodium-based sulfite pulping processes, the final emission limit is 0.44 kilograms of methanol per megagram of ODP produced. Because the variability is incorporated into the mass emission limit, these emission limits and corresponding monitoring parameters are never-to-be-exceeded values.

5. Soda and Semi-chemical Mill Standards

The proposed standards would have required the owners or operators of new or existing kraft, semi-chemical, soda, and sulfite mills to comply with the same emission standards. In the March 8, 1996 notice, EPA proposed to subcategorize the pulp and paper industry by pulping type and develop different MACT control requirements for soda and semi-chemical mills based

ystem, and the weak liquor feed stages n the evaporator system and the total VHC and HVLC collection system condensates be sent to treatment. The second option was included in the final rule because it achieves the same objective by sending a large enough mass to treatment to meet the floor-level control requirements.

For a detailed explanation of the concept of condensate segregation readers are referred to the docket (Air Docket A–92–40, IV–D1–107).

d. Clean Condensate Alternative. The proposed rule did not contain any provisions for emissions averaging. Industry comments on the proposal indicated support for incorporating an emission averaging approach in the final rule. After the public comment period, the pulp and paper industry submitted a comparison between an option developed by industry and the proposed MACT standards. The option formed the basis for the clean condensate alternative (CCA) in the final rule. The CCA focuses on reducing HAP emissions throughout the mill by reducing the HAP mass in process water streams that are recycled to various process areas in the mill. By lowering the HAP mass loading in the recycled streams, less HAP will be volatilized to the atmosphere.

The March 8, 1996 **Federal Register** supplemental notice presented a discussion of the industry's alternative (referred to as the "clean water alternative" in the notice). In the March 8 notice, EPA indicated that while the industry's concept was innovative, additional information would need to be submitted to the Agency to make the concept a viable compliance option, such as specific design parameters and data supporting the relationship between condensate stream HAP concentrations and HAP emissions from process equipment receiving the condensates.

Design specifications for the CCA were not available since no mills to date have implemented such a technology. However, the test data collected by the pulp and paper industry following the December 17, 1993 proposal included data on vent emissions and process water HAP concentrations that were used by industry to develop equations showing the relationship between HAP emissions from specific process equipment (e.g., pulp washers) and the HAP concentrations present in the process water sent to the equipment.

EPA evaluated these data and concluded that sufficient relationship appears to exist between HAP concentrations in recycled process wastewater and HAP emissions from process equipment, such that the CCA has the potential to achieve or exceed the requirements of the final standards. However, EPA has determined that the correlation equations developed by industry, because they were derived from small data sets, would not be sufficient for demonstrating compliance or equivalency with the final standards at a specific mill. Variability at a specific mill, such as types of process equipment, operating practices, process water recycle practices, and even type of wood pulped, can strongly influence the relationship between concentration in the process water and the process emissions.

The final rule contains provisions for using the CCA as a compliance option to the kraft pulping standards for the subject equipment in the HVLC system. An owner or operator must demonstrate to the Administrator's satisfaction that the total HAP emissions reductions achieved using the CCA are equal to or greater than the total HAP emission reductions that would have been achieved by compliance with the kraft pulping system standards for equipment in the HVLC system. The baseline HAP emissions for each equipment system and the total of all equipment systems in the CCA affected source (which is the existing MACT affected source expanded to include the causticizing and papermaking systems) must be determined after compliance with the pulping process condensate standards; after consideration of the effects of the effluent limitations guidelines and standards in 40 CFR part 430, subpart B; and after all other applicable requirements of local, State, and Federal agencies or statutes have been implemented. While engineering assessments or test data may be used to determine the feasibility of using the CCA, only test data may be used to demonstrate compliance with the kraft pulping system standards using the CCA.

e. Biological Treatment. At proposal, owners or operators using a biological treatment system to comply with the MACT requirements for pulping wastewater would have been required to measure the HAP or methanol concentration in the influent and effluent across the unit every 30 days and to identify appropriate parameters to be monitored to ensure continuous compliance. The proposed standards would have required that during the initial performance test, mills collect samples and analyze them using Method 304 to calculate a site-specific biorate constant. That constant, along with the operating parameters associated with the biological treatment system were to be entered into the WATER7 (updated to WATER8 since proposal) emissions model to demonstrate that the biological treatment system could achieve the treatment level required by the standards. Those operating parameters measured during the initial performance test were then to be monitored continuously to demonstrate compliance.

EPA acknowledged at proposal that industry was collecting information on the performance of biological treatment systems and monitoring techniques. EPA also noted that the industry was investigating the possibility of monitoring inlet and outlet soluble biochemical oxygen demand (BOD_5). EPA requested comments on applicable monitoring parameters for biological treatment systems and supporting data on biorates and corresponding parameters for monitoring.

EPA received a number of comments on testing and monitoring requirements for biological treatment systems. The industry submitted studies on biological treatment systems and on monitoring soluble BOD_5. Discussions were also held with the industry representatives on this issue.

In general, commenters objected to the proposed requirements to use Method 304 to calculate the site-specific biorate constants. Commenters felt that the laboratory-scale simulation of the biological treatment unit, which is basically what Method 304 requires, does not accurately reflect the biological degradation rates of the full-scale system. Commenters also stated that according to data collected, performance testing to demonstrate that biological treatment systems can meet the standards does not appear to be warranted given that methanol is highly biodegradable. Commenters further requested that if they had to conduct a performance test, they should also be permitted to use the inlet and outlet concentration procedures for calculating a site-specific biological degradation rate (biorate) constant as set forth in Appendix C of the Hazardous Organic NESHAP (HON). See 59 FR 19402 (April 22, 1994). Commenters also objected to having to demonstrate continuous compliance with the operating parameters, pointing out that a parameter could be exceeded and the biological treatment system could still be meeting the standards.

Following proposal, industry also submitted data on soluble BOD_5 across biological treatment system units. Industry stated that their data indicated that as long as the biological treatment system was achieving at least 80 percent

maximum degree of overall multi-media pollution reduction and, in particular, would avoid discouraging mills from installing oxygen delignification equipment to reduce water pollution. The notice recognized the time constraints mills would face in trying to comply with both air and water rules essentially at the same time and that too short a compliance time could preclude mills from considering pollution prevention techniques with considerable environmental benefits, such as oxygen delignification and low-flow washers. These technologies reduce the amount of pollutants discharged into the wastewater. The March 8, 1996 notice also solicited comment on whether this compliance extension should be extended only to mills that commit to install these technologies (if EPA were to decide not to include that equipment as part of its BAT model technology).

Commenters supported the extension of compliance time for pulp washing and oxygen delignification systems at existing sources. Several commenters also requested that the compliance time be extended for weak liquor tanks, knotter and screening systems, and other HVLC vent streams because emissions from these sources will be transported and controlled by the same HVLC collection and incineration system as the pulp washing and oxygen delignification systems. The commenters noted that extension of the compliance period for all HVLC sources also allows for proper consideration of the full range of emerging innovative water and air pollution control options. Comments were not received on whether to provide the compliance extension only to mills that elect to install more stringent control technologies than necessary to comply with the baseline BAT requirements.

The Agency reviewed the comments and agrees that vents included in the HVLC system should be allowed a similar compliance time as the pulp washing and oxygen delignification systems. The majority of emissions and vent gas flow from equipment associated with the HVLC vent streams occur from the pulp washing system and the oxygen delignification system. Therefore, the design of the HVLC collection and transport system would be significantly influenced by these two systems. The Agency determined if different compliance times were provided for the components of the HVLC system, an affected source would expend significant amounts of capital to control systems required to comply in the three-year time frame. The source would have to re-design the gas transport and control devices five years later to accommodate controlling the washing system and oxygen delignification system. This entire cost could discourage the implementation of low-flow washing systems and oxygen delignification.

This would serve as an obvious disincentive to installation of advanced wastewater treatment technology since mills would be understandably reluctant to replace a newly installed air pollution control system. Therefore, EPA concluded that additional compliance time is appropriate and necessary for the remaining equipment controlled by the HVLC collection and transport system as well as the pulp washing system and the oxygen delignification system. See generally 61 FR at 9394–95. The final rule thus allows affected sources to control all the equipment in the HVLC system at kraft pulping systems at the same time, not later than April 17, 2006. A mill that installs an oxygen delignification system at an existing source after April 17, 2006 must comply with the NESHAP upon commencing operation of that system.

Regarding EPA's solicitation of comments on providing a compliance extension to all kraft mills, no negative comments were received. Therefore, EPA has decided to extend the compliance time for all kraft mills.

The final rule includes requirements for kraft mills to submit a non-binding control strategy report along with the initial notification required by the part 63 General Provisions. The purpose of the control strategy report is to provide the Agency and the permitting authority with the status of progress towards compliance with the MACT standards. The control strategy report must contain, among other information, a description of the emission controls or process modifications selected for compliance with the control requirements and a compliance schedule. The information in the control strategy report must be revised or updated every two years until the mill is in compliance with the standards.

c. Condensate Segregation. The proposed standards for process wastewater would have required that all pulping wastewaters that met the mass emission rate and flow rate applicability criteria had to be treated to achieve the specified control options. Comments and data submitted to EPA indicated that kraft mills typically steam stripped the condensates from the digester, turpentine recovery, LVHC, and HVLC systems, and certain evaporator condensates. The data also indicated that mills that use steam strippers also practiced varying degrees of condensate segregation in order to minimize the flow rate and maximize the HAP mass in condensate streams sent to treatment.

In the March 8, 1996 **Federal Register** supplemental notice, EPA presented a discussion of condensate segregation and included definitions for condensate segregation and a segregated condensate stream. Commenters on the March 8 notice supported the definitions for condensate segregation and segregated condensate stream. Commenters also submitted additional information suggesting definitions for condensate segregation and segregated condensate stream as well as options for demonstrating compliance with the condensate segregation requirements. EPA evaluated the information and included some of the concepts in the final rule.

The final rule states that the condensates from pulping process equipment at kraft mills must be treated and allows a number of alternative methods of complying with the standards, all of which represent MACT. The final rule also states that the entire volume of condensate generated from the named pulping process equipment at kraft mills must be treated unless the volume from the digester, turpentine recovery, and weak liquor feed stages in the evaporator systems can be reduced using condensate segregation. If adequate segregation (as specified in the rule) is performed, only the high-HAP fraction streams from the digester system, turpentine recovery system, and the weak liquor feed stages in the evaporator system and the non-segregated streams from the LVHC and HVLC collection systems must be sent to treatment.

Discussions with the pulp and paper industry after the March 8, 1996 supplemental notice indicated that some mills might not be able to achieve the proposed 65 percent mass isolation with their existing equipment even though they are achieving high levels of HAP removal in the steam stripper system (Air Docket A–92–40, IV–E–84). Therefore, the final rule contains two options for demonstrating compliance with the segregation requirements. The first option is to isolate at least 65 percent of the HAP mass in the total all condensates from the digester system, turpentine recovery system the weak liquor feed stages in th evaporator system (condensate from the LVHC and HVLC c systems are not segregated option requires that a mir HAP mass from the high concentrated condensate digester system, turpent

water with HAP concentrations less than 400 ppmw, are not required to be controlled. Decker systems at new sources are required to be controlled regardless of the HAP concentration in the process water introduced into the decker.

EPA has reviewed available data on knotter and screen systems and has concluded that these systems are controlled sufficiently to establish a MACT floor level of control, and also that control more stringent than the floor is not warranted. Data used to reach this conclusion include survey responses from the 1992 voluntary survey, follow-up telephone surveys conducted by the National Council of the Paper Industry for Air and Stream Improvement (NCASI), and emissions data from the NCASI 16-mill study. Although the data indicate that many of these systems are currently controlled to some degree, the survey responses were not detailed enough in their equipment system descriptions and the test data were too limited for the Agency to use these two sources of information alone to develop the MACT control requirements. Because these equipment systems, nomenclature, and control configurations vary across the industry, the Agency decided that a HAP emissions limit would be the best way for mills to determine which systems would require control. EPA lacks sufficient data, however, to pinpoint any single value that represents the MACT floor. Rather, based on the survey and test data, there are a range of values from which EPA could choose. EPA further considered the costs of control in choosing from this zone of reasonable values.

Of the 171 knotter systems reported in the 1992 voluntary survey, 12 knotter systems at 5 mills were reported as controlled and ducted into the noncondensible gas (NCG) collection system and another 49 knotter systems at 23 mills were reported as having no vents. NCASI followed up by telephone surveys with these 28 mills (Air Docket A–92–40, IV–D1–101, IV–D1–112, IV–D1–114). The follow-up surveys indicated a fair amount of misreporting at these 28 mills. NCASI did not [illegible]survey for all 171 knotter systems. [illegible]efore, the following knotter system determination assumes that the [illegible]not resurveyed that originally [illegible]no knotter system controls did [illegible]l any vents.

[illegible]28 mills resurveyed, it was [illegible]t six knotter systems or [illegible]171) route all vents into [illegible]ion system; another two [illegible]or 1.2 percent (2/171) [illegible]hood vents into the NCG collection system; another eight knotter systems or 4.7 percent (8/171) use only pressure knotters; and another two knotter systems or 1.2 percent (2/171) route all vents to the smelt dissolving tank scrubber. Industry collected data at seven pressure/open (also referred to as pressure/vibrating) knotter systems and found the methanol emissions to range from 0.005–0.07 kilograms per megagram of oven-dried pulp (ODP) produced, and collected data at one pressure knotter system and found the methanol emissions to be 0.0042 kilograms per megagram ODP produced. Emissions data are summarized in the Chemical Pulping Emission Factor Development Document (Air Docket A–92–40, IV–A–8). Because the pressure knotter system emissions were lower than the emissions at the pressure/open systems, pressure systems can be considered a type of controlled system. Therefore, 18 or 10.5 percent (6+2+8+2 = 18/171) of the knotter systems have some level of emissions control. The Agency believes that this estimate of the number of knotter systems controlled may be somewhat low because it is uncertain how many of the mills not resurveyed may have had the lower emitting pressure systems.

The 1992 voluntary MACT survey responses indicated that 96 screening systems out of the 199 reported are not vented. NCASI resurveyed by telephone 41 of these 96 mills. Assuming that the 55 mills not resurveyed look similar to the 41, the follow-up survey determined that seven percent (6/41 × 96/199) route their vents to the NCG collection system and 41 percent (35/41 × 96/199) have closed screens that vent through auxiliary tanks. Therefore, 48 percent of the screening systems have some level of control.

Industry collected data at one closed screen system and one open screen system. The closed screen system tested had methanol emissions of 0.004 kilograms per megagram of ODP produced. The open screen system tested had methanol emissions of 0.22 kilograms per megagram of ODP produced.

The Agency considered how best to characterize the average emissions limitation achieved by the best controlled 12 percent of the knotter systems and screen systems given the wide variety of control scenarios present in the industry. Either collecting and controlling vents on an open system or using closed equipment results in lower air emissions. The Agency decided to select the emissions limitation using the test data from the closed and open equipment systems. The Agency's decision is due in part to the fact that the technology basis for the effluent limitations guidelines and standards being promulgated in these Cluster Rules at 40 CFR Part 430 for bleached papergrade kraft and soda mills include closing the screening areas and returning wastewater to the recovery system. Thus, it is likely that many mills will move toward wider use of the lower air emitting pressure systems.

Because there is only one test data point for the pressure knotter systems and that emissions value is similar to the low end of the range of data points for the pressure/open knotter systems, the Agency did not believe it would be appropriate to set the emission limit equal to the one pressure knotter system. Similarly, because there is only one test data point for closed screens, the Agency did not believe it would be appropriate to use that single data point to set the emission limit for screening systems. The Agency could have selected any emission limit within the range of all available data for knotters (i.e., 0.0042 to 0.07 kilograms per megagram of ODP produced) and screens (i.e., 0.004 to 0.22 kilograms per megagram of ODP produced). However, recognizing the limited data available, the Agency also considered the cost effectiveness of controlling these systems to aid in setting the emission limits within the range of reasonable values (Air Docket A–92–40, IV–B–21).

Based on considering all available data, the final rule requires that existing kraft sources are required to control knotter systems with total mass emission rates greater than or equal to 0.05 kilograms of HAP per megagram ODP produced. Existing kraft sources are required to control screening systems with total mass emission rates greater than or equal to 0.10 kilograms of HAP per megagram ODP produced. Since it is often difficult to distinguish between the knotter system and screening system at mills, a mill may also choose to meet a total mass emissions limit of 0.15 kilograms of HAP per megagram ODP produced across the knotting and screening combined system. New sources are required to control all knotter and screen systems, regardless of emissions level.

b. Compliance Times for Kraft Mills. In the March 8, 1996 supplemental notice, the Agency discussed that it was considering allowing kraft mills an extended compliance time of five additional years (eight years total) for pulp washing and oxygen delignification systems (61 FR at 9394–95). The notice discussed how the additional time would encourage the

ed that the revised approach is nd less costly to implement, for e affected industry and the ement officials, since extensive on source testing is not required ntify the vent and condensate is to be controlled.

ft Pulping Standards

Applicability for Existing Kraft ces. In the December 17, 1993 posal, all pulping system equipment. some exceptions, would have been ired to be controlled. The eptions were for deckers and screens xisting sources and small vents ow specified volumetric mass flow es and mass loadings. EPA proposed require that treatment of all pulping astewater streams except those with AP concentrations below 500 ppmw nd flow rates below 1.0 liter per ninute.

In the March 8, 1996 supplemental notice, the Agency presented potential changes to the kraft mill standards. These changes included specifically naming equipment systems and pulping wastewater subject to the standards. For existing sources, the named equipment systems in the supplemental notice included: the LVHC system, pulp washing system, oxygen delignification system, the pre-washer knotter and screening system, and weak liquor storage tanks. The subject wastewater streams are the pulping process condensates from the digester, evaporator, turpentine recovery, LVHC collection, and the HVLC collection systems. EPA identified these systems and condensates to be controlled based on information presented in responses to industry surveys available prior to proposal and on updates and clarifications to survey responses submitted by the pulp and paper industry after proposal. At proposal, EPA did not have sufficient information to define these equipment systems.

At proposal, the Agency solicited comments on its determination of the control technology basis for the MACT floor and for MACT. The proposed MACT floor level of control at existing kraft sources was 98 percent reduction of emissions from the LVHC system, pulp washing system, and oxygen delignification system. In considering information received after proposal, the Agency continued to have questions, which were discussed with representatives of the pulp and paper industry, on the data provided in the survey responses on weak liquor storage tanks, the knotter and screening system, and the decker system at existing sources (Air Docket A–92–40, IV–D1–101). In the March 8, 1996 notice, the Agency requested further information on whether to distinguish between types or ages of weak liquor storage tanks, methods and costs of controlling them, and the level of control that represents the MACT floor for the different tanks. The Agency also requested data on the type of controls present on knotter and screening systems.

Commenters to the March 8 notice provided additional information on the kraft mills which control vents from knotter system, screen systems, decker systems, weak liquor storage tanks, and oxygen delignification systems. The commenters noted that many of the mills surveyed originally had misinterpreted survey questions for these systems. The commenters concluded that the revised information indicated that less than 6 percent of the knotter and screen systems, decker systems, and weak liquor storage tanks were actually controlled: they concluded, therefore, that the existing source floor for these vents is no control. Additionally, the commenters asserted that it would not be cost-effective to go beyond the floor to control weak liquor storage tanks because tanks at existing sources would not have the structural integrity to withstand a vacuum on them caused by the vent collection system. The commenters asserted that, to control emissions, these tanks would either need to be replaced or be retrofitted with expensive add-on controls that would not be cost-effective. One commenter supported using age as a means to indicate structural integrity and, therefore, rule applicability for weak liquor storage tanks. Several commenters disagreed that age was an appropriate indicator.

The Agency has evaluated the information submitted by the commenters on the control level for the knotter system, screen system, decker system, and weak liquor storage tanks. Information submitted by the commenters indicated that of the 597 weak liquor storage tanks in the survey only 28 (4.7 percent) actually had emissions routed to a control device (Air Docket A–92–40, IV–D1–106). Some respondents had previously included other types of controlled tanks, such as washer filtrate tanks, in their totals because EPA's original survey did not provide a definition of weak liquor storage tanks. The Agency, therefore, has concluded that the MACT floor level of control for weak liquor storage tanks at existing sources is no control. While some tanks are controlled, available information does not support the supposition that age is a good parameter for distinguishing structural integrity. In addition, the Agency evaluated the cost of going beyond the floor to control weak liquor tanks. The results of EPA's analysis indicated that a significant cost would be incurred for a limited emission reduction. This analysis is presented in Chapter 20 of the background information document for the promulgated NESHAP. Therefore, the Agency agrees with the commenters that control beyond the floor is not justified. Weak liquor tanks at new sources are required to be controlled.

The Agency disagrees with the comments that decker systems are not controlled at the floor at existing sources. Information supplied by the pulp and paper industry indicates there are 170 decker systems in mills responding to EPA's industry survey questionnaires. All the decker systems are associated with bleached mills. Of the 170 decker systems, 14 are controlled (8 percent) (Air Docket A–92–40, IV–B–16).

The majority of decker systems controlled at the floor (10 systems) are associated with oxygen delignification systems or are being used as an additional stage of pulp washing. The Agency believes that these types of decker systems are operated similarly to and have similar emissions as pulp washers. Decker systems used in this manner receive contaminated condensates or filtrates that may be recycled from other processes, such as the oxygen delignification system or combined condensate tanks. The process water may have a HAP concentration that would release significant amounts of HAP to the air from the air-water interface. The Agency characterized the emissions from this source to identify the types of decker systems with high emissions. Information supplied in NCASI technical bulletin 678 provided a relationship between air emissions and methanol concentrations in process water used in rotary vacuum drums. EPA evaluated this relationship and determined that decker controls and higher HAP emission rates were associated with deckers that used process water with HAP concentrations greater than or equal to 400 ppmw, or [illegible] of that did not use fresh water or "whitewater" from papermaking systems (Air Docket A–92–40, IV–B–, and IV–B–).

Therefore, the Agency has [illegible] that it is appropriate to make [illegible] streams distinction among types of [illegible] collection systems at existing sources for the second purpose of setting the MACT [illegible] total Decker systems at existing [illegible] fresh water or "whitewater" from the papermaking systems, or [illegible] recovery

best solution to these concerns was to define a single broad source at proposal.

In the March 8, 1996 supplemental notice, EPA indicated a continuing inclination for a broad, single source definition. EPA also discussed broadening the source definition further to include papermaking systems and causticizing equipment and solicited comments on these additions. EPA's reason for considering the addition of these two equipment systems was to facilitate implementation of the clean condensate alternative for kraft mills.

Commenters on the proposed standards and on the March 8 notice largely agreed with the broad, single source definition. One commenter supported a narrow source definition, noting it was inappropriate for new construction at an existing source to be classified as a modification (and hence subject to existing source MACT). The commenter further stated that the final regulation should specify a narrow source definition for determining applicability to new source MACT. Some commenters also stated that EPA should clarify for the final regulation that mill processes not included in the source definition should not be subject to future case-by-case MACT requirements under CAA section 112(g).

EPA considered all of the comments received on this issue since proposal and maintains that the definition of source should be broad enough such that small changes to an existing mill do not trigger new source requirements in the NESHAP. However, EPA also agrees with the commenter that at some point, changes to an existing mill are substantial enough that new source MACT should apply.

In considering how best to define the source, EPA did not want to define it so narrowly that changes to or additions of individual pieces of equipment would be subject to new source MACT and be required to be in compliance with new source MACT at startup. In fact, EPA was concerned that to do so could discourage mills from implementing pollution-prevention changes as soon as practicable after promulgation of the Cluster Rules. Such changes might include replacing an existing rotary vacuum washer system with a low-flow washer system or installing an oxygen delignification system, both of which, if subject to existing source requirements, would get the eight-year compliance time, discussed later in section VI.A.3.b. Once mills are complying with the existing source MACT requirements, it also did not seem reasonable that they should have to tear out and rebuild that vent collection system to accommodate small equipment changes in the future unless those changes occurred along with other substantial changes that would justify rebuilding the vent collection system.

For the final regulation, EPA is defining the affected source to which existing MACT requirements apply to include the total of all HAP emission points in the pulping and bleaching systems (including pulping condensates). In considering how mills might engineer their vent collection systems and control devices, EPA has concluded that the following actions occurring after proposal are substantial enough that new source MACT requirements apply:

- A pulping or bleaching system at an existing mill is constructed or reconstructed; or
- A new pulping line or bleaching line is added to an existing mill.

The proposal date for mills that chemically pulp wood is December 17, 1993. The proposal date for mills that mechanically pulp wood, pulp secondary fibers, or pulp non-wood materials is March 8, 1996.

The final regulation also provides for an alternative definition of source to facilitate implementation of the clean condensate alternative. For mills using the alternative to comply with the kraft pulping standards, the final regulation defines a single broad source that includes the total of all pulping, bleach, causticizing, and papermaking systems. A more detailed discussion of the clean condensate alternative is given in section VI.A.3.d.

EPA agrees with the commenters that certain emission points that are excluded from the definition of affected source in today's rule, or are subject to a determination that MACT for these operations is no control, should not be required to undergo CAA section 112(g) review. The sources that have been so identified are wood yard operations (including wood piles); tall oil recovery systems at kraft mills; pulping systems at mechanical, secondary fiber, and non-wood fiber pulping mills; and papermaking systems. With regard to wood yard operations, tall oil recovery systems, and pulping systems at mechanical, secondary fiber, and non-wood fiber pulping mills, EPA has determined that these sources do not emit significant quantities of HAPs and EPA is not aware of any reasonable technologies for controlling HAPs from these sources. For papermaking systems, EPA has not identified any reasonable control technology, other than the clean condensate alternative, that can reduce HAP emissions attributable to HAPs present in the pulp arriving from the pulping and bleaching systems. Additionally, EPA has determined that the use of papermaking systems additives and solvents do not result in significant emissions of HAPs (Air Docket A–92–40, IV–B–27). Therefore, based on the applicability requirements of section 112(g) [40 CFR 63 part B, 63.40(b)], the following sources would not be required to undergo section 112(g) review: wood yard operations; pulping systems at mechanical, secondary fiber, and non-wood fiber mills; tall oil recovery systems; and papermaking systems.

2. Named Stream Approach

At proposal, the rule proposed applicability cutoff values (i.e., volumetric flow rate and mass flow rate) as a way to distinguish the vent and condensate streams that would be required to meet the rule. Since proposal, the pulp and paper industry submitted additional data that allowed EPA to better characterize the vent and condensate streams that should be controlled.

In the final rule, the applicability cutoffs contained in the proposed rule have been replaced in favor of specifically naming process equipment and condensate streams that would be required to meet the rule, with the exception of decker, knotter, and screen systems at existing sources. For these systems, the additional industry data was used to determine applicability cutoffs in the form of HAP emission limits (for knotter and screen systems) and HAP concentration limits in process water (for decker systems) to identify the systems that should be controlled at existing sources. A description of the vent and condensate streams to be controlled is presented in sections II.B.2, VI.A.3.a, and VI.A.4–7. The Agency added language in the definitions for the named systems to make the definitions applicable to equipment that serves a similar function as those specifically listed. This addition was made because there are no standard names for process equipment. The EPA's intent was to include the equipment that function the same as the equipment specifically named in the definitions, even though the mill may use a different name for that piece of equipment.

The different approach used in the final rule does not significantly change the number of emission points controlled from those intended to be controlled in the proposed rule. The emission points and condensate streams that are being controlled in the final rule are fundamentally the same emission sources that EPA intended to be controlled in the proposed rule. EPA

9383) announcing the information and offering the likely implications to the final rule. The opportunity for a public hearing was offered on the March 8, 1996 action, but no request for a hearing was received. Public comments on the March 8, 1996 action were accepted from March 8, 1996 to April 8, 1996. Commenters included industry representatives, States, environmental organizations, and other members of the public.

In the March 8, 1996 supplemental notice, EPA solicited additional data and comments on proposed changes to the December 17, 1993 proposed rule.

Data added to Air Docket A–92–40 since the March 8, 1996 supplemental notice are located in section IV of this docket. These items include additional information on sulfite mills (IV–D1–98, IV–D1–100), comments on definitions (IV–D1–97, IV–D1–99, IV–D1–104), comments on the emission factor document (IV–D1–102), clarification of the 1992 MACT survey responses (IV–D1–101), and other information.

B. Data Gathering for the Development of Effluent Limitations Guidelines and Standards

EPA has gathered a substantial amount of new information and data since proposal in connection with today's water regulations. Much of this information was collected with the cooperation and support of the American Forest and Paper Association (AF&PA) and the National Council of the Paper Industry for Air and Stream Improvement (NCASI), and with the assistance of many individual mills in the United States. Additional information also has been submitted by environmental groups. EPA has gathered additional information from pulp and paper mills outside of the United States, primarily in Canada and Europe.

Some of the new information and data were generated through EPA-sponsored field sampling or visits at individual mills in the United States, Canada, and Europe. Additional sampling data were voluntarily supplied by many facilities, and information from laboratory and pilot-scale studies was shared with the Agency. In order to clarify comments on the proposal, the Agency also gathered information from several surveys administered by AF&PA and NCASI, including data on secondary fiber mill processes, recovery furnace capacities, best management practices, capital and operating costs, process operations, and impacts of technology on the recovery cycle.

The data gathering activities for this final rule are summarized in detail in the proposal, see 58 FR at 66096, and in the July 15, 1996, notice of data availability, see 61 FR at 36837.

VI. Summary of the Major Changes Since Proposal and Rationale for the Selection of the Final Regulations

A. Air Emission Standards

At proposal, the standards for mills that chemically pulp wood were based on the MACT floor control level. A uniform set of requirements would have applied to all mills that chemically pulp wood using the kraft, sulfite, soda, or semi-chemical process. The proposed standards would have required that, with the exception of some with very low volumetric and mass flow rates, all emission points in the pulping and bleaching area of these mills be controlled. The proposed standards also would have required that all wastewater streams produced in the pulping area of the mill be controlled except for those with a specified low concentration of hazardous air pollutants (HAPs). The proposed control technology basis was to enclose any open process equipment in the pulping and bleaching areas and route all vents and pulping wastewater to a control device. The proposed control technology basis was combustion for pulping area vent sources, scrubbing for bleaching area vent sources, and steam stripping for pulping wastewater.

Following proposal, EPA received a large number of comments and data to support the need for subcategories with separate MACT standards for each. After considering the data and comments, the final rule specifies separate MACT requirements for each of the four types of pulping processes subject to the standard. The low volumetric and mass flow rates for pulping and bleaching vents and the low concentration value for pulping wastewater are no longer used to determine applicability to the standard. Rather, for each subcategory, the standard lists the specific equipment and pulping area condensates that require control.

For each subcategory, the Agency determined the MACT floor level of control for existing and new sources, and analyzed the cost and impacts for control options more stringent than the floor. This analysis is presented in chapter 20 of the background information document for the promulgated NESHAP, and is also discussed in the proposal preamble. Based on the results of this analysis, the Agency determined that it was not reasonable to go beyond the MACT floor level of control for sources at kraft, semi-chemical, and sulfite pulp mills, bleaching systems, or kraft condensate systems. The Agency determined that control beyond the floor at soda mills was technically feasible and could be achieved at a reasonable cost. A discussion of the Agency's decision for soda mills is presented in the March 8 supplemental notice and in section VI.A.5.

In response to comments received on the proposed standards, several changes have been made to the final rule. While some of these changes are clarifications designed to make the Agency's intent clearer, a number of them are significant changes to the compliance requirements. A summary of the substantive comments and changes made since the proposal are described in the following sections. Detailed Agency responses to public comments and the revised analysis for the final rule are contained in the background information document and docket. See Section X.A.

1. Definition of Source

At proposal, EPA defined a single broad source that was subject to both existing and new source MACT. That single source included the pulping processes, the bleaching processes, a the pulping and bleaching process wastewater streams at a pulp and pa mill. EPA also considered and soli comments on the concept of multi smaller sources that would be subject the existing and new source MACT requirements.

In defining the source at proposal, EPA considered the impact of the definition on mills making changes to existing facilities. In general, the narrower the definition of source, the more likely it is that changes to existing facilities would be deemed "new sources" under the CAA. With limited exceptions, these new sources must be in compliance with new source MACT standards on the date of startup or June 15, 1998, whichever is later. However, the CAA and the CWA differ regarding applicability requirements and compliance deadlines for new sources. As such, EPA was concerned that a pulp and paper mill planning to construct or reconstruct a source of HAPs between proposal and promulgation of these integrated regulations would find it necessary to plan for compliance with the NESHAP (required on the date it becomes effective) without knowing the requirements of the effluent guidelines for the industry. This situation appeared to be inconsistent with one objective of the integrated rulemaking: allowing facilities to do integrated compliance planning. EPA thus determined that the

but also dioxin sources and pathways for human exposure. Since the draft documents were released, EPA received thousands of pages of public comments. EPA submitted the documents to formal peer review by the EPA Science Advisory Board (SAB). The SAB was supportive of the overall reassessment effort and endorsed the major conclusions of the exposure document and chapters one through seven of the health document. They did, however, believe that additional work was needed on the dose-response modeling chapter and the risk characterization chapter.

The reassessment is currently being revised and updated in response to public comments. The two chapters singled out by the SAB are being revised by specially established panels composed of scientists from both inside and outside the Agency. Once the work of the special panels is completed these two revised chapters will be examined by peer review panels, and then resubmitted to the SAB for final review. EPA currently anticipates completion and release of the dioxin reassessment in the spring of 1998.

5. Clean Water Act Section 307(a) ·tition

)n September 14, 1993, the Natural ɔurces Defense Council and the ural Resources Council of Maine .ed with EPA on behalf of 57 .ndividuals and environmental groups a petition to prohibit the discharge of dioxin by pulp and paper mills. The petitioners ask EPA to accomplish this prohibition by prohibiting the use of chlorine and chlorine-containing compounds as inputs in the manufacturing process. The petitioners believe that the prohibition is warranted by the dangers to human health and the environment posed by dioxin. The petitioners invoke CWA section 307(a)(2) for authority for such a prohibition.

Authority for the petition and requested prohibition derives from a different section of the Clean Water Act than today's technology-based effluent limitations guidelines and standards. However, because the petition raised many issues related to the effluent guidelines rulemaking, EPA solicited comment on the issues raised in the petition at the time it proposed effluent limitations guidelines and standards for the pulp and paper industry. See 58 FR at 66174. EPA received thousands of pages of comments and expects to issue a decision granting or denying the petition after completion of the dioxin reassessment.

6. Cooling Tower Intake Assessment

EPA is developing regulations under section 316(b) of the Clean Water Act, which provides that any standard established pursuant to Section 301 or 306 and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. Section 316(b) applies only to the intake of water, not the discharge. A primary goal of the regulation that EPA is developing would be to minimize the destruction of fish and other aquatic organisms as they are drawn into an industrial facility's water intake. EPA plans to conduct screening level and detailed surveys to estimate the number and type of facilities that utilize cooling water intake structures and thus are within the scope of Section 316(b). The pulp and paper industry uses a significant amount of cooling water. EPA intends to gather data on pulp and paper facilities during the Section 316(b) rulemaking through questionnaires and site visits. The Section 316(b) regulation is scheduled for proposal in 1999 with the final rule due in 2001.

IV. Changes in the Industry Since Proposal

A description of the pulp and paper industry, including manufacturing processes, pulping processes, bleaching processes, and papermaking is included in the proposal. See 58 FR at 66095–96.

The proposed water regulation encompassed the entire pulp and paper industry of approximately 500 facilities. The proposed air regulations (MACT I and MACT III) covered approximately the same number. Under today's action, approximately 490 mills will be covered by the final MACT I and MACT III rules. Of these mills, 155 will be affected by MACT standards for mills that chemically pulp wood. A subset of these mills—96 mills—will be covered by the final effluent limitations guidelines and standards promulgated today.

Since the proposal, some facilities have modified their processes. There has been a substantial move toward elemental chlorine-free (ECF) bleaching, and mills are continuing to increase their substitution of chlorine dioxide for chlorine. Additionally, more mills are utilizing oxygen delignification and extended cooking than at proposal. All these developments result in decreased discharges of dioxins and furans to receiving waters.

The U.S. pulp and paper industry's involvement with totally chlorine-free (TCF) bleaching has not changed substantially since proposal. As was the case at the time of proposal, only one U.S. mill produces TCF kraft pulp; however, this mill is now able to attain higher brightness than was achieved at the time of the proposal.

The number of companies in the industry is constantly changing as new companies enter the market and other companies leave the industry or merge with other companies. In the subcategories now designated as Subparts B and E, only one mill has closed since proposal and one has changed subcategories. No new Subpart B or E mills have commenced construction since the time of proposal.

For more details on the technology status of mills covered by the final Cluster Rules, see the "Supplemental Technical Development Document," DCN 14487.

V. Summary of Data Gathering Activities Since Proposal

A. Data Gathering for the Development of Air Emissions Standards

To develop today's standards, extensive data collection and technical analyses were conducted. Prior to proposal, EPA used information in a 1990 census of pulp and paper mills, a 1992 voluntary mill survey, an EPA sampling program, site visits at a number of mills, and a review of State and local regulations to obtain information on emissions, emission control technologies, and emission control costs for pulp and paper mill emission points. After proposal, EPA obtained additional information from the industry. This information included test reports from a variety of testing programs, as well as numerous reports, studies, and memoranda on other issues related to the development of emission control requirements. The information collected before and after proposal was used as the technical basis in determining the MACT level of control.

EPA also used information on pulp and paper mill production processes available in the general literature and information on control technology performance and cost information developed under other EPA standards to determine MACT.

Industry commenters indicated that they would be completing a comprehensive emission testing program after proposal, and EPA considered this information to be vital to the development of the final regulation. Therefore, EPA agreed to consider the new data and issued two notices of availability of supplemental information on February 22, 1995 (60 FR 9813) and March 8, 1996 (61 FR

they can be land disposed—placement in surface impoundments being a type of land disposal. This requirement extends not only to wastes that are identified or listed as hazardous under the RCRA rules when they are land disposed, but also to wastes that are hazardous when generated, cease to be hazardous as a result of dilution, and are then disposed. *Chemical Waste Management* v. *EPA*, 976 F.2d 2 (D.C. Cir. 1992), *cert. denied*, 507 U.S. 1057 (1993).

The pulp and paper industry has many mills that fit this pattern: Numerous wastewater streams are generated, some of them exhibit a characteristic of hazardous waste (corrosivity or toxicity in particular), the streams are commingled before centralized wastewater treatment occurs, and, in the course of commingling, the wastes no longer exhibit the characteristic, and the commingled wastewaters are then treated in a surface impoundment. EPA actually took action to temporarily defer applying LDR rules to this type of situation in the pulp and paper industry in order to allow unhindered promulgation of these Cluster Rules. See 61 FR at 15660, 15574 (April 8, 1996).

This issue, however, is now moot, at least for the time being. As discussed in the April 8, 1996, notice partially withdrawing the LDR Phase III final rule, 61 FR 15660, the Land Disposal Program Flexibility Act of 1996 provides, among other things, that RCRA characteristic wastewaters are no longer prohibited from land disposal once they are rendered nonhazardous, provided that they are managed in either a treatment system whose ultimate discharge is regulated under the CWA (including both direct and indirect dischargers), a CWA-equivalent treatment system, or a Class I nonhazardous injection well regulated under the Safe Drinking Water Act. Under the Land Disposal Program Flexibility Act of 1996, the LDR treatment standards for RCRA characteristic wastes in the pulp and paper industry (or any other industry) do not apply if the characteristic is removed and the wastes are subsequently treated in a surface impoundment that is part of a wastewater treatment system whose ultimate discharge is regulated by the CWA, or if a mill's treatment system provides wastewater treatment that is CWA-equivalent.

It should be noted that the Act requires EPA to undertake a five-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from surface impoundments that accept these "de-characterized" wastes and warrant RCRA regulation. The findings of this study, begun by the Agency in April 1996, could eventually result in RCRA regulations for these units.

2. Land Application of Sludges

Under the Consent Decree entered in the case *Environmental Defense Fund and National Wildlife Federation* v. *Thomas*, Civ. No. 85–0973 (D.D.C.), EPA was required to propose rules under section 6 of the Toxic Substances Control Act (TSCA) to regulate the use of sludge produced from the treatment of wastewater effluent of pulp and paper mills using chlorine and chlorine-derivative bleaching processes (56 FR 21802; Docket OPTS–62100). EPA published the proposed rules on May 10, 1991. The proposed regulations sought to establish a final maximum dioxin and furan soil concentration of ten parts per trillion (ppt) toxic equivalents (TEQ) and site management practices for the land application of bleached kraft and sulfite mill sludge. EPA originally planned to promulgate the rule by November 1992.

On December 11, 1992, EPA informed the plaintiffs of the Consent Decree that the decision on the promulgation of the proposed sludge land application rule was deferred pending promulgation of the integrated rulemaking for effluent limitations guidelines and standards and national emission standards. EPA reasoned that the effluent limitations guidelines and standards and air emissions standards would have the potential to result in bleach plant process changes that EPA expected would result in reduced dioxin and furan contamination levels in sludge. In addition, EPA was awaiting the results of its dioxin reassessment activities.

In light of the anticipated impact of the effluent limitations guidelines and standards and air emissions standards on reducing dioxin in pulp and paper mill sludges, as well as reduction in sludge dioxin levels from industry-initiated improvements, EPA chose to defer the decision on promulgation of the final sludge land application rule. When EPA has determined the final impact of today's effluent limitations guidelines and standards on sludge dioxin concentration, EPA will re-evaluate the risk from sludge land application and will choose the appropriate regulatory or non-regulatory mechanism to address the situation.

Prior to that determination, however, EPA has taken action to achieve risk reduction for situations where sludge is being applied to land.

While awaiting completion of the effluent limitations guidelines and standards, air emission standards and the dioxin reassessment, EPA has promoted the establishment of an industry environmental stewardship program for the practice of sludge land application.

3. Hazardous Listing Determination

Under the consent decree entered in the case of *Environmental Defense Fund* v. *Browner*, Civ. No. 89–0598 (D.D.C.), "EPA shall promulgate a listing determination for sludges from pulp and paper mill effluent on or before the date 24 months after promulgation of an effluent guideline regulation under the Clean Water Act for pulp and paper mills. This listing determination shall be proposed for public comment on or before the date 12 months after promulgation of such effluent guideline regulation. However, EPA shall not be required to propose or promulgate such a listing determination if the final rule for the pending effluent guideline rulemaking (amending 40 CFR part 430) under the Clean Water Act to regulate the discharge of dioxins from pulp and paper mills is based on the use of oxygen delignification, ozone bleaching, prenox bleaching, enzymatic bleaching, hydrogen peroxide bleaching, oxygen and peroxide enhanced extraction, or any other technology involving substantially similar reductions in uses of chlorine-containing compounds. If EPA concludes that the final effluent guideline regulation is based on use of such a process and that, as a result, no listing determination is required, EPA shall so inform plaintiff in writing within 30 days of the promulgation of the effluent guideline regulation."

At this time, EPA is assessing whether the technology bases for the effluent limitations guidelines and standards promulgated today would fulfill the condition described in the Consent Decree. If so, the Agency would conclude that a listing determination is not warranted. If EPA concludes it does not fulfill the condition, a listing determination would be conducted.

4. Dioxin Reassessment

In the spring of 1991, EPA initiated an effort to reassess the scientific bases for estimating dioxin risk. The activities associated with the dioxin reassessment before proposal are described in the proposal. See 58 FR at 66092–93. After the proposal, in September 1994, EPA published a public review draft of this effort, which is commonly referred to as the EPA Dioxin Reassessment. The draft reassessment addressed not only the health effects of dioxin-like chemicals

promulgating pretreatment standards, for chloroform and AOX until it has sufficient performance data to set limitations and standards for those parameters. EPA is promulgating pretreatment standards for AOX for the calcium-, magnesium-, and sodium-based sulfite segment. EPA has made no pass-through determination at this time for COD for any segment. More details are described below in section VI.B.6.d.

5. Best Management Practices for the Bleached Papergrade Kraft and Soda Subcategory and the Papergrade Sulfite Subcategory

EPA is codifying best management practices (BMPs) applicable to direct- and indirect-discharging mills in the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories. In response to comments, EPA changed the scope of the BMPs to focus on spent pulping liquor, turpentine, and soap control and to allow for more flexibility in implementation. See Section VI.B.7.

III. Background

A. Prior Regulations, Proposal, Notices of Data Availability, and Public Participation

The regulations that EPA developed for the pulp, paper, and paperboard industry prior to this date are discussed in the proposal. See 58 FR at 66089–92.

In a **Federal Register** notice published on December 17, 1993 (58 FR 66078), EPA proposed integrated air and water rules that included proposed limitations and standards to reduce the discharge of toxic, conventional, and nonconventional pollutants in wastewaters and to reduce emissions of hazardous air pollutants from the pulp, paper, and paperboard industry. These proposed integrated regulations subsequently became known as "the Cluster Rules." EPA held a public hearing in Washington, D.C., on February 10, 1994, to provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed pretreatment standards. On March 17, 1994 (59 FR 12567), EPA published a correction notice to the proposed rules and extended the comment period to April 18, 1994.

In the preamble to the proposed rules, EPA solicited data on various issues and questions related to the proposed effluent limitations guidelines and standards and air emissions standards. The Agency received and added new material to the Air and Water Dockets. In a notice of data availability published on February 22, 1995 (60 FR 9813), EPA announced the availability of new data related to the proposed air emissions standards. Those new data are located in Air Docket A–92–40.

In a second notice of data availability published on July 5, 1995 (60 FR 34938), EPA announced the availability of new information and data related to the proposed effluent limitations guidelines and standards. Those new data are located starting at Section 18.0 of the Post-Proposal Rulemaking Record, which is a continuation of the proposal record. The Post-Proposal Rulemaking Record is located in the Water Docket. EPA did not solicit comment on the new air and water data in either notice.

On March 8, 1996, EPA published a **Federal Register** notice pertaining to the air portions of the proposed rules and announced the availability of supplemental information (61 FR 9383). The comment period for that notice closed on April 8, 1996. EPA also proposed MACT standards for mechanical pulping mills, secondary fiber pulping (deinked and non-deinked) mills, and non-wood mills, and asked for additional information on these mills. Furthermore, EPA announced that it was continuing to investigate paper machines and that no MACT standard for paper machines was being proposed at the time. EPA acknowledged an industry testing program was underway; EPA also acknowledged its request to States for data on non-wood pulping mills. EPA requested additional data on HAP emissions from, and control technologies for, paper machines to supplement information previously collected under the MACT process.

On July 15, 1996, the Agency published a **Federal Register** notice announcing the Agency's thinking, based on preliminary evaluation of the supplemented record and stakeholder discussions, regarding the technology options being considered as a basis for final effluent limitations guidelines and standards for the proposed Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories (61 FR 36835). Data were added to the record and comments were solicited from interested parties. The comment period for that notice closed on August 14, 1996.

The Agency has held numerous meetings on these proposed integrated rules with many pulp and paper industry stakeholders, including a trade association (American Forest and Paper Association, or AF&PA), numerous individual companies, environmental groups, States, laboratories, consultants and vendors, labor unions, and other interested parties. EPA has added materials to the Air and Water Dockets to document these meetings.

B. Clean Air Act Statutory Authority

Section 112(b) of the CAA lists 189 HAPs and directs EPA to develop rules to control all major and some area sources emitting HAPs. Major sources are facilities that emit 10 tons of any single HAP or 25 tons of total HAPs annually. On July 16, 1992 (57 FR 31576), EPA published a list of major and area sources for which NESHAP are to be promulgated. The goal of NESHAP is to require the implementation of maximum achievable control technology (MACT) to reduce emissions and, therefore, reduce public health hazards from pollutants emitted from stationary sources. Pulp and paper production was listed as a category of major sources. On December 3, 1993 (58 FR 83941), EPA published a schedule for promulgating standards for the listed major and area sources. Standards for the pulp and paper source category were scheduled for promulgation by November 1997.

NESHAP established under section 112 of the Act reflect MACT or:

> * * * the maximum degree of reduction in emissions of the [HAP] * * * that the Administrator, taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources in the category or subcategory to which such emission standard applies * * * (See CAA section 112(d)(2)).

C. Clean Water Act Statutory Authority

The objective of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA Section 101(a). To assist in achieving this objective, EPA issues effluent limitations guidelines, pretreatment standards, and new source performance standards for industrial dischargers. The statutory requirements of these guidelines and standards are summarized in the proposal. See 58 FR at 66088–89.

D. Other EPA Activities Concerning the Pulp and Paper Industry

1. Land Disposal Restrictions Activities

At the time of proposal, it appeared that many of the surface impoundments used for wastewater treatment in the pulp and paper industry might become subject to Resource Conservation and Recovery Act (RCRA) regulation under the Land Disposal Restriction (LDR) program. See 58 FR at 66091. This program establishes treatment standards that hazardous wastes must meet before

3. Final Regulations for the Bleached Papergrade Kraft and Soda Subcategory (Subpart B)

a. Pollutants Regulated. In this rule, EPA is promulgating effluent limitations guidelines and standards for 2,3,7,8–TCDD ("dioxin"), 2,3,7,8–TCDF ("furan"), 12 specific chlorinated phenolic pollutants, the volatile organic pollutant, chloroform, and adsorbable organic halides (AOX). EPA is also promulgating new source performance standards for BOD_5 and TSS. As explained in section VI.B.3 below, the Agency is not promulgating effluent limitations guidelines and standards for chemical oxygen demand (COD) at this time. EPA is also not promulgating effluent limitations guidelines and standards for methylene chloride, methyl ethyl ketone (MEK), acetone, or color. See Section VI.B.3.

b. Best Available Technology Economically Achievable (BAT). After re-evaluating technologies for mills in the Bleached Papergrade Kraft and Soda subcategory, EPA has determined that the model technology for effluent limitations based on best available technology economically achievable (BAT) should be complete (100 percent) substitution of chlorine dioxide for chlorine as the key process technology, along with other in-process technologies and existing end-of-pipe biological treatment technologies. See Section VI.B.5.a.

c. New Source Performance Standards. The Agency has determined that the technology basis defining new source performance standards (NSPS) for toxics and non-conventional pollutants is the BAT model technology with the addition of oxygen delignification and/or extended cooking. See Section VI.B.5.b. EPA is also promulgating NSPS for the conventional pollutants BOD_5 and TSS.

As discussed elsewhere in today's **Federal Register**, EPA also is soliciting comment and intends to gather additional data with respect to totally chlorine-free processes that may be available for the full range of market products. EPA will determine whether to propose revisions to NSPS based upon TCF and, if appropriate, flow reduction technologies.

In this rule, NSPS are effective June 15, 1998. A source is a new source if it meets the definition of new source in 40 CFR 430.01(j) and if it commences construction after that date.

d. Pretreatment Standards. The Agency is promulgating pretreatment standards for existing sources (PSES) based on the BAT model technology, excluding biological treatment. EPA is promulgating pretreatment standards for new sources (PSNS) based on the model technology for NSPS, excluding secondary biological treatment. A source is a new source for purposes of PSNS if it meets the definition of new source in 40 CFR 430.01(j) and if it commences construction after the date of proposal, i.e., December 17, 1993. However, a new indirect discharger is not required to meet PSNS for subpart B until those standards become effective, i.e., June 15, 1998.

e. Voluntary Incentives Program Based on Advanced Technology. As noted earlier in this notice, EPA's vision of long-term environmental goals for the pulp and paper industry includes continuing research and progress toward environmental improvement. EPA recognizes that technologies exist, or are currently under development at some mills, that have the ability to surpass the environmental protection that would be provided by compliance with the baseline BAT effluent limitations guidelines and NSPS promulgated today. The Agency believes that individual mills could be encouraged to explore and install these advanced technologies. Accordingly, EPA is establishing a Voluntary Advanced Technology Incentives Program for direct discharging mills in the Bleached Papergrade Kraft and Soda subcategory. This program is discussed in Section IX.

4. Final Regulations for the Papergrade Sulfite Subcategory (Subpart E)

a. Segmentation of Subpart E and Best Available Technology Economically Achievable (BAT). After assessing comments and data received after the proposal, EPA is segmenting the Papergrade Sulfite subcategory to account for production of specialty grade pulps and the applicability of technologies to ammonium-based pulping processes.

The Agency is segmenting this subcategory and establishing BAT technology bases set forth below. (EPA has established the same segments for new source performance standards and pretreatment standards for subpart E.)

(1) For production of pulp and paper at papergrade sulfite mills using an acidic cooking liquor of calcium, magnesium, or sodium sulfite (unless the mill is a specialty grade sulfite mill), the BAT technology basis is totally chlorine-free bleaching. EPA is promulgating limitations for AOX for this segment. See Section VI.B.6.b.

(2) For production of pulp and paper at papergrade sulfite mills using an acidic cooking liquor of ammonium sulfite (unless the mill is a specialty grade sulfite mill), the BAT technology bases for this segment are elemental chlorine-free (ECF) technologies (complete substitution of chlorine dioxide for elemental chlorine, peroxide enhanced extraction, and elimination of hypochlorite) and biological wastewater treatment. EPA is promulgating effluent limitations for dioxin, furan, and 12 chlorinated phenolic pollutants for this segment, but is reserving promulgation of chloroform, AOX, and COD limitations until sufficient performance data are available. See Section VI.B.6.b.

(3) For production of pulp and paper at specialty grade sulfite mills, the BAT technology bases for this segment are ECF technologies (complete substitution of chlorine dioxide for elemental chlorine, oxygen and peroxide enhanced extraction, and elimination of hypochlorite) and biological wastewater treatment. EPA is promulgating effluent limitations for dioxin, furan, and 12 chlorinated phenolic pollutants for this segment, but is reserving promulgation of chloroform, AOX, and COD limitations for this segment until sufficient performance data are available. See Section VI.B.6.b.

b. New Source Performance Standards. For each segment identified above, EPA is establishing NSPS based on the model BAT technologies selected for the particular segment. The pollutants are the same as those regulated by BAT for the applicable segment. EPA is also exercising its discretion not to revise NSPS for BOD_5, TSS, and pH. See Section VI.B.6.c.

c. Pretreatment Standards. The Agency is promulgating pretreatment standards for the segments identified above. The pretreatment standards for existing sources (PSES) control the same pollutants controlled by BAT for the particular segment. EPA is promulgating pretreatment standards for new sources (PSNS) for the same toxic and nonconventional pollutants controlled by NSPS for the particular segment. A source is a new source for purposes of PSNS if it meets the definition of new source in 40 CFR 430.01(j) and if it commences construction after the date of proposal, i.e., December 17, 1993. However, a new indirect discharger is not required to meet PSNS for subpart E until those standards become effective, i.e., June 15, 1998. The technology bases for PSES and PSNS for the Papergrade Sulfite subcategory are the same as those chosen for the particular segments at the BAT and NSPS levels, respectively, excluding secondary biological treatment. For the ammonium-based and specialty grade segments, EPA is deferring making a pass-through determination, and hence,

TABLE II–2.—FINAL CODIFIED SUBCATEGORIZATION SCHEME (WITH PREVIOUS SUBPARTS NOTED) AND SCHEDULE FOR PROMULGATING EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS (BY PHASE)—Continued

Final codified subpart	Final subcategorization scheme	Types of facilities covered including previous subcategories (with previous 40 CFR part 430 subparts noted)	Promulgation schedule (phase)*
L	Tissue, Filter, Non-Woven, and Paperboard from Purchased Pulp.	Non integrated Tissue Papers (S) Filter and Non-Woven (Y) Paperboard (Z)	II

* Phase I: Promulgation today; Phases II and III: Promulgation dates to be determined.
** Certain parameter limits to be promulgated as part of Phase II.

a. Bleached Papergrade Kraft and Soda Subcategory and Papergrade Sulfite Subcategory (subparts B and E). Under the consent decree entered in the case *Environmental Defense Fund and National Wildlife Federation* v. *Thomas*, Civ. No. 85–0973 (D.D.C.), and subsequently amended, EPA was required to use its best efforts to promulgate regulations addressing discharges of dioxins and furans from 104 bleaching pulp mills by June 17, 1995. Despite making its best efforts, EPA was not able to promulgate final effluent limitations guidelines and standards applicable to those mills by that date. However, in today's rule, EPA is promulgating effluent limitations guidelines and standards for mills in the Bleached Papergrade Kraft and Soda subcategory (subpart B) and the Papergrade Sulfite subcategory (subpart E), thereby addressing discharges from 96 of the mills covered by the consent decree. Regulating the discharge of dioxins and furans from the mills in the dissolving kraft and dissolving sulfite subcategories remains a very high priority; as discussed in more detail below, EPA will promulgate effluent limitations guidelines and standards for discharges of dioxins and furans from those mills as soon as possible.

b. Dissolving Kraft Subcategory and Dissolving Sulfite Subcategory (subparts A and D). EPA is evaluating comments and preliminary new data received since proposal affecting the Dissolving Kraft and Dissolving Sulfite subcategories. The Agency anticipates that the final effluent limitations guidelines and standards for these subcategories will be based on different technologies than those that served as the basis for the proposed limitations and standards. For example, EPA has received data suggesting that oxygen delignification is not a feasible process for making some dissolving pulp products, particularly high grade products. In addition, some use of hypochlorite appears to be necessary to maintain product quality for some products. Affected companies have undertaken laboratory studies and mill trials to develop alternative bleaching processes and to document the effects on wastewater and air emissions. The Agency expects to receive data on these studies and trials as the companies' efforts progress.

Because EPA's record presently is incomplete, EPA is not promulgating final effluent limitations guidelines and standards for these subcategories now. Even in the absence of these limitations and standards, however, EPA anticipates that alternative bleaching processes developed as a result of these studies and trials should contribute to substantial reductions in the generation and release of pollutants, when compared to current operating practices. Among the pollutants EPA expects to be reduced are dioxin, furan, and chlorinated phenolic pollutants at levels comparable to those achieved by subpart B mills. The Agency also expects to see significant reductions in AOX and chloroform. EPA encourages mills in these subcategories to expeditiously complete developmental work that will facilitate installation of alternative process technologies that achieve these pollution prevention goals.

As defined today, the Dissolving Sulfite subcategory (subpart D) applies to discharges from dissolving sulfite mills, including mills that manufacture dissolving grade sulfite pulps and papergrade sulfite pulps at the same site. See 40 CFR 430.40. This definition is based on EPA's analysis of data collected in the "1990 National Census of Pulp, Paper, and Paperboard Manufacturing Facilities." Data from the survey indicate that most sulfite mills that produce dissolving grade pulp do so at a very high percentage (typically greater than 85 percent) of their total pulp output. It has come to EPA's attention, however, that some specialty grade papergrade sulfite mills now have the capability to produce low percentages of dissolving grade pulp. EPA does not intend for these mills to be regulated under subpart D; rather, they are specialty grade sulfite mills within the Papergrade Sulfite subcategory (subpart E).

c. Schedule for the Remaining Subcategories. EPA is assessing comments and data received since proposal for the remaining eight subcategories. These eight subcategories are: (1) Unbleached Kraft; (2) Semi-Chemical; (3) Mechanical Pulp; (4) Non-Wood Chemical Pulp; (5) Secondary Fiber Deink; (6) Secondary Fiber Non-Deink; (7) Fine and Lightweight Papers from Purchased Pulp; and (8) Tissue, Filter, Non-Woven, and Paperboard from Purchased Pulp. For example, EPA has received additional information from an industry-sponsored survey of secondary fiber non-deink mills. The Agency also has received additional data from mills in other subcategories, including semi-chemical, unbleached kraft, and secondary fiber deink. EPA plans to promulgate effluent limitations guidelines and standards for these subcategories in the near future. It should be noted that air emission standards are being promulgated today for these subcategories.

2. Best Practicable Control Technology Currently Available (BPT) and Best Conventional Pollutant Control Technology (BCT) for the Bleached Papergrade Kraft and Soda Subcategory and the Papergrade Sulfite Subcategory

Although the Agency has the statutory authority to revise BPT effluent limitations guidelines, the Agency is exercising its discretion not to revise BPT for Subparts B and E at this time. In addition, none of the technologies that EPA evaluated for the purpose of setting more stringent effluent limitations for the conventional pollutants biochemical oxygen demand (BOD_5) and total suspended solids (TSS) passed the BCT cost test for either subcategory. Therefore, EPA is not revising BCT effluent limitations guidelines for Subparts B and E in this rulemaking.

for emission points that are exempt from the rule. Kraft mills must also submit, initially and bi-annually, a non-binding compliance strategy report for pulping sources electing to comply with the eight-year compliance extension (including the CCA) and for bleaching sources at bleached papergrade kraft and soda mills electing to comply with the Voluntary Advanced Technology BAT requirements. The compliance strategy report must contain, among other information, a description of the emission controls or process modifications selected for compliance and a compliance schedule indicating when each step toward compliance will be reached. For mills complying with the CCA, the report must contain a description of alternative control technology used, identify each piece of equipment affected by the alternative technology, and estimate total HAP emissions and emission reductions.

C. Effluent Limitations Guidelines and Standards

1. Subcategorization and Schedule

EPA is replacing the subcategorization scheme under the former effluent limitations guidelines for this industry (in 40 CFR parts 430 and 431) with a revised subcategorization scheme. EPA is redesignating the Builders' Paper and Roofing Felt category, formerly regulated in 40 CFR part 431, to a subcategory in part 430. This eliminates CFR part 431. The Agency is also redesignating the previous subpart numbers and section numbers, which are shown in Table II–2.

EPA is making no substantive changes to the limitations and standards for any newly redesignated subcategory except for the Bleached Papergrade Kraft and Soda subcategory (new subpart B) and the Papergrade Sulfite subcategory (new subpart E). The rationale for changing the existing subcategorization scheme is discussed in the proposal (58 FR at 66098–66100), the Development Document for Proposed Effluent Limitations Guidelines and Standards for the Pulp, Paper and Paperboard Point Source Category, also referred to as the proposal Technical Development Document (EPA 821–R93–019), and EPA's response to comments on this issue (DCN 14497, Vol. 1).

Although the Agency is codifying the revised subcategorization scheme for the whole industry today, EPA will promulgate revised effluent limitations guidelines and standards, as appropriate, for this industrial category in stages consisting of several subcategories at a time. The Agency has labeled these groupings of subcategories as "Phase I," "Phase II," and "Phase III." The schedule for these phases is explained below and in the following table.

TABLE II–2.—FINAL CODIFIED SUBCATEGORIZATION SCHEME (WITH PREVIOUS SUBPARTS NOTED) AND SCHEDULE FOR PROMULGATING EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS (BY PHASE)

Final codified subpart	Final subcategorization scheme	Types of facilities covered including previous subcategories (with previous 40 CFR part 430 subparts noted)	Promulgation schedule (phase)*
A	Dissolving Kraft	Dissolving Kraft (F)	III
B	Bleached Papergrade Kraft and Soda.	Market Bleached Kraft (G), BCT Bleached Kraft (H), Fine Bleached Kraft (I), Soda (P).	I**
C	Unbleached Kraft	Unbleached Kraft (A) Linerboard Bag and Other Products Unbleached Kraft and Semi-Chemical (D, V)	II
D	Dissolving Sulfite	Dissolving Sulfite (K) Nitration Viscose Cellophane Acetate	III
E	Papergrade Sulfite Calcium-, Magnesium-, and Sodium-based pulps. Ammonium-based pulps. Specialty grade pulps.	Papergrade Sulfite (J, U) Blow Pit Wash Drum Wash	I**
F	Semi-Chemical	Semi-Chemical (B) Ammonia Sodium	II
G	Mechanical Pulp	Groundwood-Thermo-Mechanical (M), Groundwood-Coarse, Molded, News (N), Groundwood-Fine Papers (O), Groundwood-Chemi-Mechanical (L).	II
H	Non-Wood Chemical Pulp	Miscellaneous mills not covered by a specific subpart	II
I	Secondary Fiber Deink	Deink Secondary Fiber (Q) Fine Papers Tissue Papers Newsprint	II
J	Secondary Fiber Non-Deink	Tissue from Wastepaper (T), Paperboard from Wastepaper (E) Corrugating Medium Non-Corrugating Medium Wastepaper-Molded Products (W) Builders' Paper and Roofing Felt (40 CFR Part 431, Subpart A)	II
K	Fine and Lightweight Papers from Purchased Pulp.	Non integrated Fine Papers (R) Wood Fiber Furnish Cotton Fiber Furnish Nonintegrated Lightweight Papers (X) Lightweight Papers Lightweight Electrical Papers	II

papermaking systems, there are no control requirements.

k. Test Methods. The standards specify test methods and procedures for demonstrating that process equipment and condensate streams are in compliance with the MACT standards or are exempt from the rule. The rule also includes provisions to test for no detectable leaks from closed-vent systems. Because the majority of all non-chlorinated HAP emissions from process equipment and in pulping process condensates is methanol, in most cases the owner or operator has the option of measuring methanol as a surrogate for total HAP. For demonstrating compliance using biological treatment or the CCA, the owner or operator must measure total HAP. To demonstrate compliance with the concentration limit requirements, mass emission limit requirements, and percent reduction requirements for bleaching systems, chlorine may be measured as a surrogate for total chlorinated HAP emissions (other than chloroform).

l. Monitoring Provisions. Sources subject to the NESHAP are required to continuously monitor specific process or operating parameters for control devices and collection systems. Continuous emissions monitoring is not required, except as an alternative to certain control requirements. Parameter values are to be established during an initial performance test. Alternative monitoring parameters must be demonstrated to the Administrator's satisfaction to comply with the standards. As at proposal, excursions outside the selected parameter values are violations except for biological treatment systems. If a biological treatment system monitoring parameter is outside the established range, a performance test must be performed. The parameters that must be monitored for vent and condensate compliance are explained below.

Mills using a thermal oxidizer must install, calibrate, maintain, and operate a temperature monitoring device and continuous recorder to measure the temperature in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange occurs. Mills using gas scrubbers at bleaching systems or sulfite processes must install, calibrate, maintain, and operate a device to monitor and continuously record (1) pH or the oxidation/reduction potential of scrubber effluent, (2) vent gas inlet flow rate, and (3) scrubber liquid influent flow rate. As an alternative to monitoring these parameters, mills complying with the bleaching system outlet concentration option must install, calibrate, maintain, and operate a device to monitor and continuously record the chlorine outlet concentration. Mills complying with the bleaching system outlet mass emission limit option must install, calibrate, maintain, and operate a device to monitor and continuously record the chlorine outlet concentration and the scrubber outlet vent gas flow. Bleached papergrade kraft and soda mills enrolling in the Voluntary Advanced Technology Incentives Program in the effluent limitations guidelines and standards portion of today's rule must monitor the application rates of chlorine and hypochlorite to demonstrate that no increase in chlorine or hypochlorite use occurs between June 15, 1998 and April 15, 2004.

Mills using steam strippers must install, calibrate, maintain, and operate a device to monitor and continuously record process water feed rate, steam feed rate, and process water feed temperature. As an alternative to monitoring those parameters, mills complying with the steam stripper outlet concentration option may install, calibrate, maintain, and operate a device to monitor the methanol outlet concentration. In addition to monitoring around the stream stripper, mills that choose to treat a smaller, more concentrated volume of condensate rather than the whole volume of subject condensates must also continuously monitor the condensates to demonstrate that the minimum mass or percent of total mass is being treated. This practice is often referred to as condensate segregation. Mills complying with the condensate segregation requirements shall install, calibrate, maintain, and operate monitors for appropriate parameters as determined during the initial performance test.

Mills using a biological treatment system to treat pulping process condensates must monitor on a daily basis samples of outlet soluble BOD_5 concentration (maximum daily and monthly averages), inlet liquid flow, mixed liquor volatile suspended solids (MLVSS), liquid temperature, and the horsepower of aerator units. Additionally, inlet and outlet grab samples from each biological treatment system unit must be collected and stored for 5 days. These samples must be collected and stored since some of the monitoring parameters (e.g., soluble BOD_5) cannot be determined within a short period of time. These samples are to be used in conjunction with the WATER8 emissions model to demonstrate compliance if the soluble BOD_5, MLVSS, or the aerator horsepower monitoring parameters fall outside the range established during the initial performance test.

Monitoring requirements for the pulping process condensate collection systems include initial and monthly visual inspections of individual drain system components and vent control devices (if used), and repair of defects. Additionally, inspection and monitoring requirements from § 63.964 of subpart RR (National Emission Standards for Individual Drain Systems) are incorporated in the final rule. Monitoring requirements for vent collection systems are (1) a visual inspection of the closed-vent system and enclosure opening seals initially and every 30 days, (2) demonstration of no detectable leaks initially and annually for positive pressure systems or portions of systems, and (3) repair of defects and leaks as soon as practical.

For the CCA, EPA is not specifying the parameters to be monitored in the final rule since the types of equipment that would be used in the CCA are not known at this time. Consequently, the final rule specifies that owners or operators choosing to use the CCA must conduct an initial performance test to determine the appropriate parameters and corresponding parameter values to be monitored continuously. Rationale for the parameter selection must also be provided for the Administrator's approval.

m. Reporting and Recordkeeping Provisions. Sources subject to the NESHAP are required to comply with recordkeeping and reporting provisions in the part 63 General Provisions, and other specified requirements in the NESHAP.

Sources subject to the rule are required to keep readily accessible records of monitored parameters. The monitoring records must be maintained for five years (two years on-site, three years off-site). For each enclosure opening, closed-vent system, and pulping process condensate storage tank, the owner or operator must record the equipment type and identification; results of negative pressure tests and leak detection tests; and specific information on the nature of the defect and repairs. The position of bypass line valves, the condition of valve seals, and the duration of the use of bypass valves on computer controlled valves must also be recorded.

Sources subject to the NESHAP are required to submit the following types of reports: (1) Initial Notification, (2) Notification of Performance Tests, (3) Exceedance Reports, and (4) Semi-annual Summary Reports. Exceedance and summary reports are not required

to a control device. Positive-pressure portions of the closed-vent system must be designed and operated with no detectable leaks. The rule provides three control device options, as follows: (1) Reduce the HAP content by 98 percent by weight (or, for thermal oxidizers, to a level of 20 ppmv of total HAP, corrected to 10 percent oxygen on a dry basis); (2) reduce HAPs by using a properly operated thermal oxidizer (operated at a minimum temperature of 1,600 °F and a minimum residence time of 0.75 seconds); or (3) reduce HAPs by using a boiler, lime kiln, or recovery furnace that introduces all emission streams to be controlled with the primary fuel or into the flame zone.

h. Soda Pulping Standards. For existing sources, the soda pulping standards apply to the LVHC vent system. For new sources, the soda pulping standards apply to the LVHC system and the pulp washing system.

Sources subject to the soda pulping standards must enclose open process equipment and route all emissions through a closed-vent system to a control device. Positive pressure portions of the closed-vent system must be designed and operated with no detectable leaks. The rule provides three control device options, as follows: (1) Reduce the HAP content by 98 percent by weight (or, for thermal oxidizers, to a level of 20 ppmv of total HAP, corrected to 10 percent oxygen on a dry basis); (2) reduce HAPs by using a properly operated thermal oxidizer (operated at a minimum temperature of 1,600 °F and a minimum residence time of 0.75 seconds); or (3) reduce HAPs by using a boiler, lime kiln, or recovery furnace that introduces all emission streams to be controlled with the primary fuel or into the flame zone.

i. Bleaching System Standards. The bleaching provisions apply to bleaching systems that use elemental chlorine to bleach pulp. At kraft, sulfite, and soda pulping processes, the bleaching system provisions also apply to bleaching systems that use chlorinated compounds to bleach pulp. At mechanical pulping, non-wood fiber pulping, and secondary fiber pulping mills, only bleaching systems that use elemental chlorine or chlorine dioxide to bleach pulp are subject to the NESHAP. Bleaching systems that do not use chlorine or chlorinated compounds are considered to be in compliance with the bleaching system requirements. For the applicable systems (i.e., bleaching or brightening in the different subcategories), the chlorinated HAP emissions from bleaching systems that use elemental chlorine or chlorinated compounds must be controlled. Existing source and new source requirements are the same.

Sources subject to the bleaching system standards must enclose process equipment in the bleaching stages and route all emissions through a closed-vent system to a control device that achieves either a 99 percent reduction of chlorinated HAP's (other than chloroform), an outlet concentration at or below 10 ppmv total chlorinated HAP (other than chloroform), or a mass emission limit at or below 0.001 kg of total chlorinated HAP (other than chloroform) per Mg ODP produced. Chlorine may be used as a surrogate for measuring total chlorinated HAP. The closed-vent system must be designed and operated with no detectable leaks.

With respect to chloroform emissions from bleaching systems, EPA is closely correlating the air and water standards. This is because EPA is relying on the same process change technology basis to control both chloroform emissions to air and pollutant discharges to water. Thus, MACT to control chloroform for bleaching systems requires a mill either to meet the applicable baseline effluent limitations guidelines and standards for all pollutants being promulgated today under the Clean Water Act or to certify that chlorine and hypochlorite are not used in the bleaching system.

However, EPA at present lacks sufficient information to establish new effluent limitations guidelines and standards for dissolving grade mills, and also lacks information to reliably ascertain what a MACT standard for chloroform air emissions would be for this unit operation. (It is not appropriate to set MACT standards for chloroform based on the control technology in use today to comply with current effluent limitations guidelines and standards for dissolving grade mills because these technologies are at the wastewater treatment system, rather than in the bleaching process where the chloroform-emitting vents are located.) EPA intends to set new effluent limitations guidelines and standards for dissolving grade mills after analyses currently underway by EPA are complete, and is deferring establishing MACT standards for chloroform until these effluent limitations guidelines and standards are established. Therefore, dissolving grade mills will be required to control chloroform air emissions three years after the new effluent limitations guidelines and standards are promulgated.

In a related action, EPA is also deferring establishing MACT for chlorinated HAPs other than chloroform from dissolving grade bleaching operations until three years after promulgation of new effluent limitations guidelines and standards for mills performing those operations. The Agency is doing so in order to avoid imposition of CAA requirements which would be inconsistent with, or superseded by, forthcoming CWA regulations.

EPA is not aware of any control presently in place or any available control technology for reducing chloroform air emissions at mechanical, secondary fiber, and non-wood pulping mills. Therefore, MACT for chloroform at these mills is no control. Today's water rule does not set new effluent limitations guidelines and standards for control of chloroform at mechanical, secondary fiber, and non-wood pulping mills, but EPA will evaluate whether it is appropriate to do so at a later time. At that time, EPA will also determine whether it is appropriate to revise MACT (pursuant to CAA section 112(d)(6)) in order to control chloroform emissions at those mills.

In addition, EPA is establishing MACT in two phases for bleach plant emissions from existing source papergrade kraft and soda bleaching plants which elect, under the Voluntary Advanced Technology Incentives Program, to control wastewater discharges to levels surpassing the baseline BAT limitations being promulgated today under the CWA. Phase one represents the present MACT floor for existing sources, i.e., no backsliding from existing controls during the initial period when a mill is working toward meeting its Voluntary Advanced Technology BAT requirements; phase two requires the mill either to meet baseline BAT requirements for all pollutants for bleached papergrade kraft and soda mills or to certify that chlorine and hypochlorite are not used in the bleaching system. EPA is establishing MACT in two phases in order to avoid discouraging plants from electing environmentally superior levels of wastewater treatment represented by the Voluntary Advanced Technology Incentives Program. These points are discussed in detail in section VI.A.7.

j. Mechanical Pulping Mill, Secondary Fiber Pulping Mill, Non-wood Pulping Mill, and Papermaking System Standards. Mechanical pulping (groundwood, thermomechanical, pressurized) mills, secondary fiber pulping mills, and non-wood pulping mills must comply with the bleaching system standards described in section II.B.2.i. There are no control requirements for pulping systems or process condensates at these mills. For

furnace that introduces all emission streams to be controlled with the primary fuel or into the flame zone.

The kraft condensate standards apply to condensate streams generated in the following kraft pulping processes: Digester system, evaporator system, turpentine recovery system, LVHC collection system, and the high volume-low concentration (HVLC) collection system. The HAP mass loading in the condensates from these systems must be reduced by 92 percent, based upon performance of steam stripping. The NESHAP also includes the following four alternative ways to meet the kraft condensate standard: (1) Recycle applicable condensate streams to process equipment that is controlled in accordance with the kraft pulping standards; (2) reduce the concentration of HAP (measured as methanol) in the condensate to 330 ppmw for kraft mills with bleaching systems, or 210 ppmw for kraft mills without bleaching systems; (3) remove at least 5.1 kilograms of HAP (measured as methanol) per megagram of ODP produced for kraft mills with bleaching systems, or remove at least 3.3 kilogram of HAP per megagram of ODP produced for kraft mills without bleaching systems; or (4) discharge pulping process condensates to a biological treatment system achieving at least 92 percent destruction of total HAP.

The pulping process condensates must be conveyed to the treatment system in a closed collection system that is designed and operated to meet the individual drain system requirements specified in §§ 63.960, 63.961, 63.962, and 63.964 of subpart RR. These essentially require that the means of conveyance be leak-free. Air emissions of HAP from vents on any condensate treatment systems (except biological treatment systems) that are used to comply with the standards must be routed to a control device meeting the kraft pulping standards.

All the pulping process condensates from the LVHC and HVLC collection systems must be treated. However, the facility has the option of minimizing the condensate volume sent to treatment from the digester system, turpentine recovery system, and weak liquor feed stages in the evaporator system (i.e., condensate segregation). If sufficient segregation is not achieved, then the entire volume of condensate from the digester system, turpentine recovery system, and weak liquor feed stages in the evaporator system and the LVHC and HVLC collection systems must be treated.

Two options are provided in the rule for determining if sufficient segregation has been achieved. The first option is to isolate at least 65 percent of the total HAP mass in the total of all condensates from the digester system, turpentine recovery system, and weak liquor feed stages in the evaporator system.

The second option requires that a minimum total HAP mass from the high HAP-concentrated condensates from the digester system, turpentine recovery system, and weak liquor feed stages in the evaporator system and the LVHC and HVLC collection system condensates be sent to treatment.

e. Clean Condensate Alternative Standards for Kraft Pulping. The final rule provides an alternative compliance option to the kraft pulping standards for subject equipment in the HVLC systems. This alternative compliance option is referred to as the clean condensate alternative (CCA). The CCA focuses on reducing the HAP concentration in process water (such as from the digestion and liquor evaporation areas) that is introduced into process equipment throughout the mill. By reducing the amount of HAP in the process water, reductions in HAP emissions will also be achieved since less HAP will be available to volatilize off the process to the atmosphere. To demonstrate compliance, the mass emission reduction of HAPs achieved by the alternative technology must equal or exceed that which would have been achieved by implementing the kraft pulping vent controls.

Eligibility for this compliance alternative is determined on a case-by-case basis during the permitting process.

For purposes of developing a compliance strategy, sources may use either emission test data or engineering assessment to determine the baseline HAP emission reductions that would be achieved by complying with the kraft pulping vent standard. To demonstrate that the alternative technology complies with the emission reduction requirements of the standards, emission test data must be used. Two conditions must be met for a CCA compliance demonstration: (1) Owners and operators that choose this alternative must first comply with pulping process condensate standards before implementing the alternative technology; and (2) the HAP emission reductions cannot include reductions associated with any control equipment required by local, state, or Federal agencies' regulations or statutes or with emission reductions attributed to equipment installed prior to December 17, 1993 (i.e., the date of publication of the proposed rule).

For purposes of the CCA, the rule provides an alternative definition of the affected source. The alternative definition allows for the CCA to apply to process systems outside of the kraft pulping system. The expanded source includes the causticizing system and the papermaking system. The mill must specify the process equipment within the expanded source with which to generate the required HAP emissions reductions using the CCA. The mass emission reduction of HAPs must equal or exceed the reduction that would have been achieved through application of the kraft pulping vent standards. The final determination of equivalency shall be made by the permitting authority based on an evaluation of the HAP emission reductions.

f. Sulfite Pulping Standards. For existing sources, the sulfite pulping standards apply to the digester system vents, evaporator system vents, and the pulp washing system. The sulfite pulping standards also apply to air emissions from the effluent from any equipment used to reduce HAP emissions to comply with the standards (e.g., acid plant scrubber and nuisance scrubber). For new sources, the sulfite pulping standards apply to the equipment systems listed for existing sources, plus weak liquor tanks, strong liquor storage tanks, and acid condensate storage tanks.

Sources subject to the sulfite pulping standards for equipment systems must enclose open process equipment and route all HAP emissions through a closed-vent system to a control device. The closed-vent system must be designed and operated with no detectable leaks. The total HAP emissions from the equipment systems and from the effluent from any control device used to reduce HAP emissions must meet a mass emission limit or a percent reduction requirement. Calcium- and sodium-based sulfite pulping mills must meet an emission limit of 0.44 kilograms of methanol per megagram of ODP or achieve a 92 percent methanol reduction. Ammonium- and magnesium-based sulfite pulping mills must meet an emission limit of 1.1 kilograms of methanol per megagram of ODP limit or achieve an 87 percent methanol removal.

g. Semi-Chemical Pulping Standards. For existing sources, the semi-chemical pulping standards apply to the LVHC vent system. For new sources, semi-chemical pulping standards apply to the LVHC system and the pulp washing system.

Sources subject to the semi-chemical pulping standards must enclose open process equipment and route all emissions through a closed-vent system

or 25 tons per year of all HAPs (one ton is equal to 0.908 megagrams). Potential to emit is based on the total of all HAP emissions from all activities at the mill.

The NESHAP specifies emission standards for pulping processes and bleaching processes. The emission standards for pulping and bleaching processes provide several options for compliance, including an alternative pollution prevention option (the "clean condensate alternative") for the kraft pulping process. The standards specify compliance dates for new and existing sources, require control devices to be properly operated and maintained at all times, and clarify the applicability of the NESHAP General Provisions (40 CFR part 63, subpart A) to sources subject to this rule.

The rule subcategorizes the industry to specify different emission standards based on the type of pulping process (kraft, sulfite, semi-chemical, soda, mechanical wood pulping, secondary fiber pulping, or non-wood pulping) and bleaching process (papergrade or dissolving grade). Mills that chemically pulp wood using kraft, semi-chemical, sulfite, or soda processes are referred to in later sections as MACT I mills. Mills that mechanically pulp wood, or that pulp secondary fiber or non-wood fibers, or that produce paper or paperboard from purchased pulp are referred to in later sections as MACT III mills.

The emission control requirements for new and existing sources within each subcategory are the same, except that more emission points are covered for sources subject to the new source provisions. Where two or more subcategories are located at the same mill site and share a piece of equipment, that piece of equipment would be considered a part of the subcategory with the more stringent MACT requirements for that piece of equipment. For example, the foul condensates from an evaporation set processing both kraft weak black liquor and spent liquor from a semi-chemical process would have to comply with the kraft subcategory requirements for foul condensate. This more stringent requirement is appropriate because there is no way to isolate the emissions for each pulping source to determine compliance separately.

These standards do not address emissions from recovery area combustion sources (referred to in later sections as MACT II). These sources are being regulated under a separate NESHAP, which is proposed elsewhere in today's **Federal Register**. A summary of the specific provisions that apply to each of the subcategories is given in the later parts of this section.

a. Definition of Affected Source. At chemical wood pulping mills, the affected source is all emission points in the pulping and bleaching systems. At mills that mechanically pulp wood, secondary fibers, or non-wood materials, the affected source is all emission points in the bleaching system. For kraft mills complying with the clean condensate alternative, the affected source is the pulping system, bleaching system, causticizing system, and papermaking system.

b. New Source MACT. New source MACT applies to: (1) An affected source that commenced construction or reconstruction after initial proposal; (2) pulping or bleaching systems that are reconstructed after initial proposal; and (3) new pulping systems, pulping lines, bleaching systems, and bleaching lines that are added to existing sources after initial proposal. The initial proposal date for mills that chemically pulp wood is December 17, 1993. The initial proposal date for mills that mechanically pulp wood, pulp secondary fibers, or pulp non-wood materials is March 8, 1996.

Descriptions of equipment in each subcategory subject to new source MACT requirements are presented in later sections of this preamble.

c. Compliance Times. The rule requires existing sources to comply with the NESHAP no later than April 16, 2001, except for the following cases. Existing kraft sources are required to control all the equipment in the HVLC collection system no later than April 17, 2006. Dissolving-grade mills are required to comply with bleaching system standards no later than three years after publication of the wastewater effluent limitations guidelines and standards under 40 CFR part 430, subparts A and D.

In addition, the NESHAP sets out a two-phased standard for existing source papergrade kraft and soda bleach mills that elect, under the Voluntary Advanced Technology Incentives Program, to control wastewater discharges to levels surpassing today's BAT baseline. The first phase for existing source MACT requires no increase in the existing HAP emission levels from the papergrade bleaching system—i.e., no backsliding—during the initial period when the mill is working toward meeting its Voluntary Advanced Technology BAT requirements. EPA has determined that immediate compliance with this requirement is practicable because the requirement reflects, for each mill, the performance level it is presently achieving. Therefore, the effective date of the first phase requirements is June 15, 1998. The second phase of existing source MACT requires the mill either to comply with BAT for all pollutant parameters at the baseline level for the Bleached Papergrade Kraft and Soda subcategory, or to certify that chlorine and hypochlorite are not used in the bleach plant, in order to achieve the MACT standard for chloroform emission reduction; it also requires the mill to apply controls for other chlorinated HAPs. All such mills that enroll in the Voluntary Advanced Technology Incentives Program must comply with the second phase of existing source MACT no later than April 15, 2004.

Once today's rules take effect on June 15, 1998, new sources must comply with applicable MACT requirements upon start-up.

d. Kraft Pulping Standards. For existing sources, the kraft pulping standards promulgated today apply to the following equipment systems: The low volume high concentration (LVHC) system, the pulp washing system, the oxygen delignification system, decker systems that do not use fresh water or whitewater from papermaking systems or that use process water with HAP concentrations greater than or equal to 400 parts per million by weight (ppmw), and knotter systems and screening systems that have total system emissions greater than or equal to 0.05 and 0.10 kilograms of HAP per megagram of oven-dried pulp (ODP) produced, respectively (or have total [i.e., knotter and screening] system emissions greater than or equal to 0.15 kilograms of HAP per megagram of ODP produced combined). For new sources, the kraft pulping standards apply to the equipment systems listed above for existing sources, plus weak liquor storage tanks, all knotter systems, all screening systems, and all decker systems.

Sources subject to the kraft pulping standards must enclose open process equipment and route all emissions through a closed-vent system to a control device. The closed-vent system must be designed and operated with no detectable leaks. The rule provides three control device options, as follows: (1) Reduce the HAP content by 98 percent by weight (or, for thermal oxidizers, to a level of 20 parts per million volume [ppmv] of total HAP, corrected to 10 percent oxygen on a dry basis); (2) reduce HAPs by using a properly operated design thermal oxidizer (operated at a minimum temperature of 1,600 °F and a minimum residence time of 0.75 seconds); or (3) reduce HAPs by using a boiler, lime kiln, or recovery

underlying the rules promulgated today. This summary section highlights the technology bases and other key aspects of the final rules. More detailed descriptions are included in the supporting documents listed in section XI.

In addition, the Agency is today codifying the subcategorization scheme that was proposed for 40 CFR parts 430 and 431, see 58 FR 66078, 66098–100 (Dec. 17, 1993) and is redesignating the section and subpart numbers in 40 CFR part 430 accordingly.

A. EPA's Long-Term Environmental Goals

EPA has integrated the development of the regulations discussed today to provide greater protection of human health and the environment, reduce the cost of complying with the wastewater regulations and air emissions controls, promote and facilitate coordinated compliance planning by industry, promote and facilitate pollution prevention, and emphasize the multimedia nature of pollution control.

The Agency envisions a long-term approach to environmental improvement that is consistent with sound capital expenditures. This approach, which is presented in today's notice, stems from extensive discussions with a range of stakeholders. The effluent limitations guidelines and standards and air emissions standards are only one component of the framework to achieve long-term environmental goals. The overall regulatory framework also includes incentives to reward and encourage mills that implement pollution prevention beyond regulatory requirements. The Agency will continue to encourage mill-specific solutions to remaining environmental problems through water quality-based requirements in permits and enforcement of those requirements. In addition, continuing research on minimum impact technologies, such as closed-loop and totally chlorine-free bleaching processes, will help to identify economical ways of furthering environmental improvement in this industry.

EPA's long-term goals include improved air quality, improved water quality, the elimination of fish consumption advisories downstream of mills, and the elimination of ecologically significant bioaccumulation. An integral part of these goals is an industry committed to continuous environmental improvement—an industry that aggressively pursues research and pilot projects to identify technologies that will reduce, and ultimately eliminate, pollutant discharges from existing and new sources. A holistic approach to implementing these pollution prevention technologies would contribute to the long-term goal of minimizing impacts of mills in all environmental media by moving mills toward closed-loop process operations. Effective implementation of these technologies is capable of increasing reuse of recoverable materials and energy while concurrently reducing consumption of raw materials (e.g., process water, unrecoverable chemicals, etc.), and reducing air emissions and generation of hazardous and non-hazardous wastes. EPA expects that this combination of regulation, research, pilot projects, and incentives will foster continuous environmental improvement with each mill investment cycle. For this reason, EPA is including an incentives program as part of the effluent limitations guidelines and standards being promulgated today for bleached papergrade kraft and soda mills that accept enforceable permit limits requiring effluent reductions well beyond the rule's regulatory baseline (see Section IX). To ensure that today's air emission standards do not present barriers or disincentives to mills in choosing technologies beyond baseline BAT, EPA is providing additional time to comply with MACT beyond the three-year compliance time for certain process units. See Sections VI.A.3.b and VI.A.7 for details on MACT compliance times.

B. National Emission Standards for Hazardous Air Pollutants (NESHAP)

1. Purpose of the NESHAP

The main purposes of the Clean Air Act (CAA) are to protect and enhance the quality of our Nation's air resources, and to promote the public health and welfare and the productive capacity of the population. See CAA, section 101(b)(1). To this end, section 112(d) of the CAA directs EPA to set standards for stationary sources emitting greater than ten tons of any one HAP or 25 tons of total HAPs annually (one ton is equal to 0.908 megagrams). EPA is promulgating this NESHAP because pulp and paper mills are major sources of HAP emissions. Individual mills are capable of emitting as much as several hundred tons per year (tpy) of HAPs. The HAPs emitted may adversely affect air quality and public health. The HAPs controlled by this rule are associated with a variety of adverse health effects including cancer; a number of other toxic health effects such as headaches, nausea, and respiratory distress; and possible reproductive effects.

a. Hazardous Air Pollutants. Table II–1 lists the 14 HAPs emitted in the largest quantities from pulp and paper mills. A few HAPs emitted from pulp and paper mills have been classified as possible, probable, or known human carcinogens. These include acetaldehyde, benzene, carbon tetrachloride, chloroform, formaldehyde, and methylene chloride. The total reduction in national HAP emissions by compliance with the NESHAP is estimated to be 139,000 megagrams per year (Mg/yr).

TABLE II–1.—HIGHEST EMITTED HAZARDOUS AIR POLLUTANTS FROM PULP AND PAPER MILLS

Hazardous Air Pollutants	
Acrolein	Methanol.
Acetaldehyde	Methylene chloride.
o-Cresol	Methyl ethyl ketone.
Carbon tetrachloride	Phenol.
Chloroform	Propionaldehyde.
Cumene	1,2,4-Trichlorobenzene.
Formaldehyde	o-Xylene.

b. Volatile Organic Compounds. Emissions of volatile organic compounds (VOC) have been associated with a variety of health and welfare impacts. Volatile organic compound emissions, together with nitrogen oxides (NO_X), are precursors to the formation of tropospheric ozone. Exposure to ozone is responsible for a series of health impacts, such as alterations in lung capacity; eye, nose, and throat irritation; malaise and nausea; and aggravation of existing respiratory disease. Among the welfare impacts from exposure to ozone include damage to selected commercial timber species and economic losses for commercially valuable crops, such as soybeans and cotton. The total reduction in national VOC emissions by compliance with the NESHAP is estimated to be 409,000 Mg/yr.

c. Total Reduced Sulfur Compounds. Total reduced sulfur (TRS) compound emissions are responsible for the malodors often associated with pulp and paper production. The total reduction in TRS compound emissions estimated as a result of compliance with this NESHAP is 79,000 Mg/yr. Surveys of odor pollution caused by pulp mills have supported a link between odor and health symptoms such as headaches, watery eyes, nasal problems, and breathing difficulties.

2. Summary of the NESHAP

The MACT standards apply to pulp and paper mills that have the potential to emit ten tons per year of any one HAP

Except as provided in today's BMP regulation, new direct and indirect discharging sources must comply with applicable treatment standards on the date the new source begins operation. For purposes of new source performance standards (NSPS), a source is a new source if it meets the definition of "new source" in 40 CFR 430.01(j) and if it commences construction after June 15, 1998. For purposes of pretreatment standards for new sources (PSNS), a source is a new source if it meets the definition of "new source" in 40 CFR 430.01(j) and if it commenced construction after December 17, 1993.

The following compliance dates apply to the Voluntary Advanced Technology Incentives Program being codified today as part of the water regulations for Subpart B. Each existing direct discharging mill that enrolls in the Voluntary Advanced Technology Incentives Program must comply immediately with limitations based on the mill's existing effluent quality or its current technology-based permit limits for the baseline BAT parameters, whichever are more stringent. Participating mills must also comply with mill-specific interim milestones by the dates specified in their NPDES permits. They must also achieve the baseline BAT effluent limitations for dioxin, furan, chloroform, 12 specified chlorinated organic pollutants and, for mills enrolled at the Tier II or Tier III level, AOX no later than April 15, 2004. Finally, participating mills must achieve BAT limitations corresponding to the most stringent phase of the Voluntary Advanced Technology Incentives Program by the dates specified below:

Voluntary BAT limitations for Tier I must be achieved by April 15, 2004.

Voluntary BAT limitations for Tier II must be achieved by April 15, 2009.

Voluntary BAT limitations for Tier III must be achieved by April 15, 2014.

For new direct discharging mills in Subpart B, EPA is promulgating Voluntary NSPS at the Tier II and Tier III levels. Participating new sources must achieve NSPS at the selected level upon commencing operation.

Compliance dates for the NESHAP are as follows: Existing sources must comply with the NESHAP no later than April 16, 2001 except for the following cases. Equipment in the high volume low concentration (HVLC) system at existing sources at kraft mills (e.g., pulp washer systems, oxygen delignification systems) must comply no later than April 17, 2006. Bleach plants at existing source kraft and soda mills participating in the effluent limitations guidelines Voluntary Advanced Technology Incentives Program must comply with the first stage of the NESHAP no later June 15, 1998 and with the second stage no later than April 15, 2004.

Once today's rules take effect on June 15, 1998, new sources must comply with applicable MACT requirements upon start-up. For a discussion of the circumstances under which a source becomes a new source for compliance with new source air emissions standards, see Sections II.B.2.b. and VI.A.1.

Technology Transfer Network

The Technology Transfer Network (TTN) is one of EPA's electronic bulletin boards. The TTN provides information and technology exchange in various areas of air pollution control. New air regulations are now being posted on the TTN through the world wide web at "http://www.epa.gov/ttn." For more information on the TTN, call the HELP line at (919) 591–5384.

Information on the water regulations may be accessed through the world wide web at http://www.epa.gov/OST/Rules/#final.

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I. Legal Authority

These regulations are being promulgated under the authority of sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, 33 U.S.C. sections 1311, 1314, 1316, 1317, 1318, 1342, and 1361, and sections 112, 114, and 301 of the Clean Air Act, 42 U.S.C. sections 7412, 7414, and 7601.

II. Scope of This Rulemaking

Today's Cluster Rules consist of effluent limitations guidelines and standards for the control of wastewater pollutants and national emission standards for hazardous air pollutants. The final rules issued today are based on extensive information gathered by the Agency and on comments received from interested parties during the development of these regulations.

Section VI of this notice discusses the major changes since proposal and the rationale for the regulatory decisions

M Street SW, Washington, DC 20460. For access to Docket materials, call (202) 260–3027. The Docket staff requests that interested parties call between 9:00 am and 3:30 pm for an appointment before visiting the docket

For additional information about the dockets, see section X.A below.

Background and support documents containing technical, cost, economic, and health information, as well as EPA's response to public comments, are available for public use. A listing and how to obtain these background documents is provided in section XI in this notice.

FOR FURTHER INFORMATION CONTACT: For questions regarding air emissions standards for chemical wood pulping mills, contact Ms. Penny Lassiter, Emissions Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541–5396; or Mr. Stephen Shedd, at the same address, telephone number (919) 541–5397. For information concerning the final air standards for mechanical pulping processes, secondary fiber pulping processes, and nonwood fiber pulping processes, contact Ms. Elaine Manning, at the same Research Triangle Park address, telephone number (919) 541–5499. For questions on compliance, enforcement and applicability determinations, contact Ms. Maria Eisemann, Office of Enforcement and Compliance Assurance (2223A), U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460, telephone number (202) 564–7106.

For questions regarding wastewater standards, contact Mr. Donald Anderson at the following address: Engineering and Analysis Division (4303), EPA, 401 M Street, S.W., Washington, D.C. 20460, telephone number (202) 260–7189; or Ms. Wendy D. Smith at the same address, telephone number (202) 260–7184.

For additional information on the economic impact analyses, contact Dr. William Wheeler, Office of Water, Engineering and Analysis Division (4303), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC, 20460, (202) 260–7905.

SUPPLEMENTARY INFORMATION:

Overview

The preamble summarizes the legal authority for these rules, background information, the technical and economic methodologies used by the Agency to develop these rules, the impacts of the rules, regulatory implementation, and the availability of supporting documents.

Regulated Entities

Entities regulated by today's action are those operations that chemically pulp and nonchemically pulp wood and nonwood fibers for pulp and paper production. EPA projects that approximately 490 mills are subject to the air regulations promulgated today. Of these mills, 155 will be affected by MACT standards for mills that chemically pulp wood. Within that group, 96 are subject to the effluent limitations guidelines and standards promulgated today. Regulated categories and entities include:

Category	Rule	Examples of regulated entities
Industry	NESHAP	Pulp mills and integrated mills (mills that manufacture pulp and paper/paperboard) that: chemically pulp wood fiber (using kraft, sulfite, soda, or semi-chemical methods); pulp secondary fiber; pulp nonwood fiber; and mechanically pulp wood fiber.
	Effluent Guidelines	Subset of mills subject to the NESHAP that chemically pulp wood fiber using kraft, sulfite, or soda methods to produce bleached papergrade pulp and/or bleached paper/paperboard.

The foregoing table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the NESHAP and effluent limitations guidelines and standards promulgated today. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility or company is regulated by this NESHAP, you should carefully examine the applicability criteria in § 63.440 of the air rule and the applicability criteria in part 63, Subpart A of Title 40 of the Code of Federal Regulations. To determine whether your facility is regulated by the effluent limitations guidelines and standards, you should carefully examine the applicability criteria in § 430.20 and § 430.50 of Title 40 of the Code of Federal Regulations.

If you have questions regarding the applicability of the NESHAP or the effluent limitations guidelines and standards, see the section entitled **FOR FURTHER INFORMATION CONTACT.**

Judicial Review

In accordance with 40 CFR § 23.2, the water portion of today's rule shall be considered promulgated for the purposes of judicial review at 1 pm Eastern time on April 29, 1998. Under section 509(b)(1) of the Clean Water Act (CWA), judicial review of today's effluent limitations guidelines and standards is available in the United States Court of Appeals by filing a petition for review within 120 days from the date of promulgation of those guidelines and standards. Under section 307(b)(1) of the CAA, judicial review of the NESHAP is available only by petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this NESHAP. Under section 509(b)(2) of the CWA and section 307(b)(2) of the CAA, the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

Compliance Dates

Existing direct dischargers must comply with limitations based on the best available technology economically achievable (BAT) as soon as such requirements are imposed in their National Pollutant Discharge Elimination System (NPDES) permits. The water regulation also establishes specific deadlines for compliance with best management practices (BMPs), which apply to all sources. The new reporting and recordkeeping requirements promulgated today are not effective until the Office of Management and Budget approves Information Collection Requests for those requirements.

Except as provided in today's BMP regulation, existing indirect dischargers subject to today's water regulations must comply with the pretreatment standards for existing sources being promulgated today by April 16, 2001. In addition, these dischargers must continue to comply with the pretreatment standards for existing sources for pentachlorophenol and trichlorophenol.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 63, 261, and 430

[FRL–5924–8]

RIN 2040–AB53

National Emission Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rules.

SUMMARY: This action promulgates effluent limitations guidelines and standards under the Clean Water Act (CWA) for a portion of the pulp, paper, and paperboard industry, and national emission standards for hazardous air pollutants (NESHAP) under the Clean Air Act (CAA) as amended in 1990 for the pulp and paper production source category.

EPA is also promulgating best management practices under the CWA for a portion of the pulp, paper, and paperboard industry, and new analytical methods for 12 chlorinated phenolic pollutants and for adsorbable organic halides (AOX). This action consolidates into 12 subcategories what had once been 26 subcategories of effluent limitations guidelines and standards for the pulp, paper, and paperboard industry, and revises the existing effluent limitations guidelines and standards for the Bleached Papergrade Kraft and Soda subcategory and the Papergrade Sulfite subcategory. The revised effluent limitations guidelines and standards require existing and new facilities within these two subcategories to limit the discharge of pollutants into navigable waters of the United States and to limit the introduction of pollutants into publicly owned treatment works. The NESHAP requires existing and new major sources within the pulp and paper production source category to control emissions using the maximum achievable control technology (MACT) to control hazardous air pollutants (HAP).

EPA is revising the effluent limitations guidelines and standards for the Bleached Papergrade Kraft and Soda subcategory and the Papergrade Sulfite subcategory primarily to reduce the discharge of toxic and nonconventional chemical compounds found in the effluents from these mills. Discharge of these pollutants into the freshwater, estuarine, and marine ecosystems may alter aquatic habitats, affect aquatic life, and adversely impact human health. Discharges of chlorinated organic compounds from chlorine bleaching, particularly dioxins and furans, are human carcinogens and human system toxicants and are extremely toxic to aquatic life. The final effluent limitations guidelines and standards for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategory are estimated to reduce the discharge of adsorbable organic halides (AOX) by 28,210 kkg/year; chloroform by 45 kkg/year; chlorinated phenolics by 47 kkg/year; and 2,3,7,8-TCDD (dioxin) and 2,3,7,8-TCDF (furan) by 125 gm/year. These reductions will permit all 19 dioxin/furan-related fish consumption advisories downstream of pulp and paper mills to be lifted.

EPA is revising the subcategorization scheme for the effluent limitations guidelines and standards because the new scheme better defines the processes typically found in U.S. mills and thus results in what ultimately will be a streamlined regulation that can be implemented more easily by the permit writer. With the exception of the new effluent limitations guidelines and standards for the Bleached Papergrade Kraft and Soda and Papergrade Sulfite subcategories, EPA is making no substantive changes to the limitations and standards applicable to the newly reorganized subcategories. Those portions of the existing pulp, paper, and paperboard effluent limitations guidelines and standards that are not substantively amended by this action are not subject to judicial review; nor is their effective date affected by this reorganization.

The HAPs emitted by facilities covered by the NESHAP include such compounds as methanol, chlorinated compounds, formaldehyde, benzene, and xylene. The health effects of exposure to these and other HAPs at pulp and paper mills can include cancer, respiratory irritation, and damage to the nervous system. The final NESHAP is expected to reduce baseline emissions of HAP by 65 percent or 139,000 Mg/yr.

The pollutant reductions resulting from these rules will achieve the primary goals of both the CAA and CWA, which are to "enhance the quality of the Nation's air resources so as to promote the public health and welfare and productive capacity of its population" and to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," respectively. These rules will result in continued environmental improvement at reasonable cost by providing flexibility in when and how results are achieved and, for certain mills, by providing incentives to surpass baseline requirements.

Elsewhere in today's **Federal Register**, EPA is concurrently proposing NESHAP to control hazardous air pollutants from chemical recovery combustion sources at kraft, soda, sulfite, and stand-alone semi-chemical pulp mills.

In another proposed rule published in today's **Federal Register**, EPA is also proposing a regulation that would require mills enrolled in the Voluntary Advanced Technology Incentives Program being promulgated for the Bleached Papergrade Kraft and Soda subcategory to submit a plan specifying research, construction, and other activities leading to achievement of the Voluntary Advanced Technology effluent limitations, with accompanying dates for achieving these milestones. Second, EPA proposes to authorize Bleached Papergrade Kraft and Soda subcategory mills under certain circumstances to submit a certification based on process changes in lieu of monitoring for chloroform. Third, although not proposing totally chlorine-free (TCF) technologies for new source performance standards under the CWA for Bleached Papergrade Kraft and Soda subcategory at this time, EPA is requesting comments and data regarding the feasibility of TCF processes for this subcategory, especially the range of products made and their specifications. In that proposal EPA is also requesting comments and data regarding the effluent reduction performance of TCF processes for this subcategory.

DATES: In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the regulations shall become effective June 15, 1998. For compliance dates, see the **SUPPLEMENTARY INFORMATION** section under the heading "Compliance Dates."

ADDRESSES: *Air Dockets.* The Air Dockets are available for public inspection between 8 a.m. and 4 p.m., Monday through Friday except for Federal holidays, at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (MC–6102), 401 M Street SW, Washington, DC 20460, Room M–1500, Waterside Mall; telephone: (202) 260–7548.

Water Docket. The complete public record for the effluent limitations guidelines and standards rulemaking is available for review, Monday through Friday except for federal holidays, at EPA's Water Docket, Room M2616, 401

Wednesday
April 15, 1998

Part II

Environmental Protection Agency

40 CFR Parts 63, 261, and 430 National Emissions Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category; Final Rule

ACTION: Final Rule; correction of effective date under CRA.

SUMMARY: On July 3, 1997 (62 FR 35972), the Environmental Protection Agency published in the **Federal Register** a direct final action to correct entries to the table in § 81.331 of Title 40 of the Code of Federal Regulations (CFR) for "New Jersey-Carbon Monoxide," which established an effective date of July 3, 1997. This document corrects the effective date of the rule to May 4, 1998 to be consistent with sections 801 and 808 of the Congressional Review Act (CRA), enacted as part of the Small Business Regulatory Enforcement Fairness Act, 5 U.S.C. 801 and 808.

EFFECTIVE DATE: This rule is effective on May 4, 1998.

FOR FURTHER INFORMATION CONTACT: Tom Eagles, Office of Air at (202) 250–5585.

SUPPLEMENTARY INFORMATION:

I. Background

Section 801 of the CRA precludes a rule from taking effect until the agency promulgating the rule submits a rule report, which includes a copy of the rule, to each House of Congress and to the Comptroller General of the General Accounting Office (GAO) EPA recently discovered that it had inadvertently failed to submit the above rule as required; thus, although the rule was promulgated on the date stated in the July 3, 1997, **Federal Register** document, by operation of law, the rule did not take effect on July 3, 1997, as stated therein. Now that EPA has discovered its error, the rule has been submitted to both Houses of Congress and the GAO. This document amends the effective date the rule consistent with the provisions of the CRA.

Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, an agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for making today's rule final without prior proposal and opportunity for comment because EPA merely is correcting the effective date of the promulgated rule to be consistent with the congressional review requirements of the Congressional Review Act as a matter of law and has no discretion in this matter. Thus, notice and public procedure are unnecessary. The Agency finds that this constitutes good cause under 5 U.S.C. 553(b)(B). Moreover, since today's action does not create any new regulatory requirements and affected parties have known of the underlying rule since July 3, 1997, EPA finds that good cause exists to provide for an immediate effective date pursuant to 5 U.S.C. 553(d)(3) and 808(2).

II. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), or require prior consultation with State officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the July 3, 1997, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on May 4, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended effective date.

Dated: April 22, 1998.

Carol Browner,

Administrator.

[FR Doc. 98–11546 Filed 5–1–98; 8:45 am]

BILLING CODE 6560–60–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[FRL–5999–7]

Amendments to the Test Procedures for Heavy-Duty Engines, and Light-Duty Vehicles and Trucks and Amendments to the Emission Standard Provisions for Gaseous Fueled Vehicles and Engines

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: On September 5, 1997, EPA promulgated a direct final rulemaking that amended several sections of the heavy-duty engine test procedure regulations. These changes were needed in order to accommodate the use of new testing equipment, to provide greater flexibility in the type of testing equipment used and to ensure uniform calibration and use of the testing equipment. EPA stated that it would withdraw any provisions that received adverse or critical comments. EPA also published a notice of proposed rulemaking at that time proposing the same amendments. Due to adverse comments that were received regarding three provisions of the final rule, EPA is removing those three provisions in this action. The Agency intends to issue in the near future a final rule addressing these provisions.

EFFECTIVE DATE: June 3, 1998.

ADDRESSES: Materials relevant to this rulemaking are contained in Docket No. A–96–07, and are available for public inspection and photocopying between 8 a.m. and 5:30 p.m. Monday through Friday. EPA may charge a reasonable fee for copying docket materials.

FOR FURTHER INFORMATION CONTACT: Mr. Jaime Pagán, U.S. EPA, Engine Programs and Compliance Division, 2565 Plymouth Road, Ann Arbor, MI 48105. Telephone (734) 668–4574.

SUPPLEMENTARY INFORMATION:

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I. Introduction

On September 5, 1997, EPA published a direct final rule (62 FR 47114) and accompanying notice of proposed rule

C_i=Concentration of sample component i in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946–77 (incorporated by reference as specified in § 63.14).

H_i=Net heat of combustion of sample component i, kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated.

n=Number of sample components.

* * * * *

(8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity V_{max}. The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation:

$V_{max}=8.71 + 0.708(H_T)$

Where:

V_{max}=Maximum permitted velocity, m/sec.

8.71=Constant.

0.708=Constant.

H_T=The net heating value as determined in paragraph (b)(6)(ii) of this section.

* * * * *

[FR Doc. 98–11262 Filed 5–1–98; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[FRL–598–6]

Technical Amendments to Designation of Areas for Air Quality Planning Purposes; Texas; Revised Geographical Designation of Certain Air Quality Control Regions; Correction of Effective Date Under Congressional Review Act (CRA)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule; correction of effective date under CRA.

SUMMARY: On June 3, 1997 (62 FR 30270), the Environmental Protection Agency published in the **Federal Register** a direct final rule approving a July 2, 1993, request by the Governor of Texas to revise the geographical boundaries of seven Air Quality Control Regions (AQCRs) in the State of Texas to conform with the Texas Natural Resource Conservation Commission (TNRCC) regional boundaries, which established an effective date of August 4, 1997. This document corrects the effective date of the rule to May 4, 1998 to be consistent with sections 801 and 808 of the Congressional Review Act (CRA), enacted as part of the Small Business Regulatory Enforcement Fairness Act, 5 U.S.C. 801 and 808.

EFFECTIVE DATE: This rule is effective on May 4, 1998.

FOR FURTHER INFORMATION CONTACT: Tom Eagles, Office of Air, at (202) 260–5585.

SUPPLEMENTARY INFORMATION:

I. Background

Section 801 of the CRA precludes a rule from taking effect until the agency promulgating the rule submits a rule report, which includes a copy of the rule, to each House of Congress and to the Comptroller General of the General Accounting Office (GAO). EPA recently discovered that it had inadvertently failed to submit the above rule as required; thus, although the rule was promulgated on the date stated in the June 3, 1997, **Federal Register** document, by operation of law, the rule did not take effect on August 4, 1997, as stated therein. Now that EPA has discovered its error, the rule has been submitted both Houses of Congress and the GAO. This document amends the effective date of the rule consistent with the provisions of the CRA.

Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, an agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for making today's rule final without prior proposal and opportunity for comment because EPA merely is correcting the effective date of the promulgated rule to be consistent with the congressional review requirements of the Congressional Review Act as a matter of law and has no discretion in this matter. Thus, notice and public procedure are unnecessary. The Agency finds that this constitutes good cause under 5 U.S.C. 553(b)(B). Moreover, since today's action does not create any new regulatory requirements and affected parties have known of the underlying rule since June 3 1997, EPA finds that good cause exists to provide for an immediate effective date pursuant to 5 U.S.C. 553(d)(3) and 808(2).

II. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), or require prior consultation with State officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). EPA's compliance with these statutes and Executives Orders for the underlying rule is discussed in the June 3, 1997, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on May 4, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended effective date.

Dated: April 22, 1998.

Carol Browner,

Administrator.

[FR Doc. 98–11544 Filed 5–1–98; 8:45 am]

BILLING CODE 6560–50–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[FRL–5987–9]

Technical Amendments to Designation of Areas for Air Quality Planning Purposes; State of New Jersey; Correction of Effective Date Under Congressional Review Act (CRA)

AGENCY: Environmental Protection Agency (EPA).

of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 60

Environmental protection, Air pollution control, Incorporation by reference.

40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference.

Dated: April 17, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, 7411, 7414, 7416, 7429, 7601 and 7607.

Subpart A—General Provisions

2. Section 60.17 is amended by revising paragraph (a)(6) to read as follows:

§ 60.17 Incorporation by reference.

* * * * *

(a) * * *

(6) ASTM D1946–77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.45(f)(5)(i), 60.18(c)(3)(i), 60.18(f), 60.614(d)(2)(ii), 60.614(d)(4), 60.664(d)(2)(ii), 60.664(d)(4), 60.564(f), 60.704(d)(2)(ii) and 60.704(d)(4).

* * * * *

3. Section 60.18 is amended by revising paragraphs (c)(3) and (c)(4)(i), and by adding paragraphs (c)(3)(i) and (c)(3)(ii) to read as follows:

§ 60.18 General control device requirements.

* * * * *

(c) * * *

(3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation:

$V_{max}=(X_{H2}-K_1)* K_2$

Where:

V_{max}=Maximum permitted velocity, m/sec.

K_1=Constant, 6.0 volume-percent hydrogen.

K_2=Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2}=The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77. (Incorporated by reference as specified in § 60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4)(ii) and (iii) of this section.

* * * * *

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, 7411, 7412, 7414, 7416, 7429, 7601 and 7607.

Subpart A—General Provisions

2. Section 63.11 is amended by revising paragraphs (b)(6) and (b)(8), and by adding paragraphs (b)(6)(i) and (b)(6)(ii) to read as follows:

§ 63.11 Control device requirements.

* * * * *

(b) * * *

(6) An owner/operator has the choice of adhering to the heat content specifications in paragraph (b)(6)(ii) of this section, and the maximum tip velocity specifications in paragraph (b)(7) or (b)(8) of this section, or adhering to the requirements in paragraph (b)(6)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity V_{max}, as determined by the following equation:

$V_{max}=(X_{H2}-K_1)* K_2$

Where:

V_{max}=Maximum permitted velocity, m/sec.

K_1=Constant, 6.0 volume-percent hydrogen.

K_2=Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2}=The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77. (Incorporated by reference as specified in § 63.14).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(7)(i) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K\sum_{i=1}^{n} C_i H_i$$

Where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K=Constant=

$$1.740\times10^{-7}\left(\frac{1}{\text{ppmv}}\right)\left(\frac{\text{g-mole}}{\text{scm}}\right)\left(\frac{\text{MJ}}{\text{kcal}}\right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

impacts for other hydrogen-fueled flares in the United States. Therefore, the following estimates are limited to these six DuPont flares.

A. Primary Air Impacts

The amended flare specifications will reduce emissions by the same amount (i.e., 98 percent or greater) as emissions would be reduced by using flares meeting the existing flare specifications.

B. Other Environmental Impacts

The Agency estimates that these amendments to the flare specifications will reduce secondary emissions of pollutants since the combustion of supplemental organic fuel will no longer be required; therefore, there will be no emissions resulting from the combustion of a supplemental fuel. It is estimated that these flare specification amendments will reduce annual emissions from the six affected DuPont flares by 147 megagrams (161 tons per year) of criteria pollutants (i.e., 124 megagrams (136 tons per year) of carbon monoxide, and 22.7 megagrams (25 tons per year) of nitrogen oxides) and 39,900 megagrams (44,000 tons per year) of carbon dioxide.

In addition to these secondary emission reductions, there may also be State regulations that require owners/operators to follow the existing flare specifications, and by allowing the owners/operators to meet the specifications in these amendments, there may be further reductions in secondary air emissions. Therefore, these impacts are a minimal estimate of the potential secondary air emission reductions.

C. Energy Impacts

These amendments to the flare specifications are expected to decrease the amount of energy used by DuPont's six hydrogen-fueled flares since these flares will no longer be required to combust secondary fuel. The expected energy savings is estimated to be 7.75×10^8 cubic feet of natural gas annually (7.75×10^{11} Btu/yr) .

D. Cost and Economic Impacts

Cost savings will be realized due to these amendments by not requiring the combustion of supplemental fuel (to comply with the original heat content requirements), and by not requiring the subsequent resizing of the existing flares that would result from a requirement to combust supplemental fuel in order to accommodate the additional flow of supplemental fuel. The cost of natural gas as supplemental fuel for the six affected flares is estimated to be $2.8 million per year. The capital investment to replace a smaller flare tip with a larger one is estimated to be approximately $667,000 per flare or $4 million for all six flares. The total annual savings achieved by allowing hydrogen-fueled flares that fulfill the specifications of these amendments are the sum of the annual fuel cost savings, and the annualization of the capital savings (calculated to be $280,000 per year). Therefore, total annual savings for the six affected DuPont flares are estimated to be $3.08 million per year. Since sources using these hydrogen-fueled flare specifications will experience savings, no adverse economic impacts will result from this action.

E. Summary of Impacts

This section discussed the cost savings, emission reduction of secondary pollutants, and energy savings from only the six DuPont flares subject to current or pending regulations. These flare specification amendments have the potential to reduce emissions and save money and fuel from hydrogen-fueled flares of which the EPA is not yet aware.

VI. Administrative

A. Paperwork Reduction Act

This rule does not contain any information collection subject to the Office of Management and Budget (OMB) approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*

B. Executive Order 12866 Review

Under Executive Order 12866, (58 FR 51735 (October 4, 1993) the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that these amendments are not a "significant regulatory action" under the terms of Executive Order 12866 and, therefore, are not subject to review by the Office of Management and Budget.

C. Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities, because this rule imposes no additional regulatory requirements, but merely expands the types of flares that may be used to meet the requirements of 40 CFR 60 and 40 CFR 63.

D. Unfunded Mandates Reform Act

Under section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act"), signed into law on March 22, 1995, the EPA must prepare a budgetary impact statement to accompany any proposed or final standards that include a Federal mandate that may result in estimated costs to State, local, or tribal governments, or to the private sector, of, in the aggregate, $100 million or more. Under section 205, the EPA must select the most cost effective and least burdensome alternative that achieves the objectives of the standard and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the standards.

The EPA has determined that the final standards do not include a Federal mandate that may result in estimated costs of, in the aggregate, $100 million or more to either State, local, or tribal governments, or to the private sector, nor do the standards significantly or uniquely impact small governments, because they contain no requirements that apply to such governments or impose obligations upon them. Therefore, the requirements of the Unfunded Mandates Act do not apply to this final rule.

E. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General

results from comparisons of stability ratios at different tip velocities. For this test program the ratio of the hydrogen content at lift off to the hydrogen content at blow out with a pilot was used as an analogous ratio to the previously mentioned stability ratio. Further, the value of hydrogen at blow out was used as the minimum hydrogen content, since at essentially this level of hydrogen, the destruction efficiencies were above 98 percent for tip velocities of 100 and 120 ft/sec. The DuPont test program's data revealed a trend where the hydrogen ratios were lower at higher velocities compared to lower tip velocities, 1.15 to 1.17 versus 1.3, respectively. Since the test programs in the 1980's demonstrated that the destruction efficiency is directly proportional to the stability ratio, then it could be expected that the same or higher destruction efficiencies would be experienced at lower tip velocities where the hydrogen ratios are larger.

C. Selection of the Specifications for Hydrogen-Fueled Flares

The operating specification for hydrogen-fueled flares in these amendments is the maximum tip velocity for a given hydrogen content, from the equation of the line fitting the data from the stability testing at lift off conditions as seen in Figure 1. The equation in these amendments comes directly from the test report. This equation is presented in the appropriate form in Section IV of this preamble with the units changed to metric.

There are safety requirements that must be carefully considered for all flare installations, and this is the case for the user of these hydrogen-fueled flare amendments. As an example, if the discharge velocity is too low under certain conditions, the flame could propagate back into the process with potentially catastrophic results. These amendments only specify a maximum discharge velocity for the purpose of assuring efficient destruction of pollutants in waste streams and do not address any aspect of safe operation. The user of any EPA flare specifications should carefully consider all features of this application, not just the limitation on maximum discharge velocity, and implement all necessary measures to assure a safe operation. Safe operating conditions are always the responsibility of the owner/operator at each facility to assure that all applicable safety requirements are adhered to whether they are company, consensus and/or governmental requirements.

The EPA did not think that extrapolating the data outside the range of values tested to be prudent; therefore, the hydrogen-fueled flare specifications have been restricted to the confines of the conditions used for the test program. The following restrictions are included in the hydrogen-fueled flare specifications:

1. Nonassisted Flares

The amendments are applicable to only nonassisted flares because that is the only type of flare tested for these amendments.

2. Continuous Flame

The existing flare specifications require the presence of a continuous flame where reliable ignition is obtained by continuous pilot burners designed for stability. To ensure that the pilot is continuously lit, a flame detection device is required. These amendments incorporate the same requirements for the same reason, to ensure flame stability.

3. Minimum Flare Diameter

The testing was conducted on 3-inch flares, therefore this is the minimum flare diameter for the amendments.

4. Minimum Hydrogen Content

The minimum hydrogen content in the gas streams tested was rounded to the nearest whole number, 8.0 volume percent, and set as the defining minimum hydrogen concentration cutoff for a hydrogen-fueled flare.

5. Maximum Tip Velocity

The maximum tip velocity was set at 37.2 m/sec (122 ft/s), because that was the highest tip velocity tested.

6. Flame Stabilizers

Flame stabilizers (often called flame holders) are allowed because stability and destruction efficiency testing was conducted without them, so if these tabs stabilize the flame even better mixing, and potentially greater destruction efficiencies can be achieved.

7. Minimum Flare Tip Velocity

A minimum flare tip velocity was not listed since evidence indicates that performance will not be diminished due to lower tip velocities (See the preceding discussion concerning safety responsibilities).

D. Decision To Proceed With Direct Final Rulemaking

This notice is being published as a direct final notice since the EPA does not anticipate relevant adverse comments. For the reasons discussed in this notice, the EPA believes that hydrogen-fueled flares meeting the operating specification in this amendment will achieve the same control efficiency, i.e., 98 percent or greater, as flares complying with the existing flare specifications. Further, these specifications will result in reduced emissions of carbon monoxide, nitrogen oxides, and carbon dioxide formed during the combustion of supplemental fuel necessary for hydrogen-fueled flares to comply with existing regulations. By promulgating these amendments some companies using hydrogen-fueled flares can, as of the effective date of this amendment, reduce supplemental fuel use resulting in cost savings and reduced emissions.

IV. Summary of the Amendments to the Flare Specifications

The amendments to the flare specifications add requirements for nonassisted flares that combust 8.0 percent (by volume) or greater of hydrogen in the stream and have a 3-inch or greater diameter. The amendments present an equation that calculates the maximum allowable flare tip velocity for a given volume percent of hydrogen. This equation format is similar to the one used for air-assisted flares in the existing flare specifications. The specific equation for the maximum tip velocity for hydrogen-fueled flares is:

$V_{max}=(X_{H2}—K_1)* K_2$

Where:

V_{max}=Maximum permitted velocity, m/sec.

K_1=Constant, 6.0 volume-percent hydrogen.

K_2=Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2}=The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77.

This direct final rule adds specifications for hydrogen-fueled flares to both 40 CFR 60.18 and 63.11. The amendments to the General Provisions for NSPS are contained in 40 CFR 60.18. In addition, 40 CFR 60.18 (c)(4)(i) was revised to correct an earlier published typographical error. The amendments to the General Provisions for NESHAP are contained in 40 CFR 63.11(b)(9). 40 CFR 63.11(b)(8) was also revised to make the number of significant figures consistent throughout the specifications.

IV. Impacts

The impacts discussed in this section are only for six DuPont flares that are required by current or pending EPA regulations to meet the existing flare specifications. The EPA does not have information, and cannot estimate

3. The Size of the Test Flare

Another reason for using the 3-inch flare for these tests is because a 3-inch flare is small, relative to the size of flares in industry (as a point of reference, the DuPont flares are 16 to 48 inches in diameter). Research indicates that smaller flares are less stable than larger flares (Docket No. A–97–48, Item No. II–I–1, Sec 4, page 6). Specifically, the physical parameter known as the velocity gradient can be used to predict when a flame will blow out by plotting the velocity gradient versus the volume-percent hydrogen. The larger the boundary velocity gradient, the more unstable the flame. Further, the velocity gradient is inversely proportional to the diameter of the pipe. Therefore, at a given velocity, the larger the pipe, the smaller the boundary velocity, and the more stable the flame. The EPA concludes that if a stable flame can be maintained with a smaller flare pipe, then a larger flare would be expected to be stable at lower hydrogen concentrations and higher velocities. Therefore, the EPA believes that 3-inch or larger flares that meet these specifications will have destruction efficiencies as high or higher than those obtained from the 3-inch pipe flares.

4. The Selection of the Size of the Pilot Burner

The amount of heat input from the pilots on DuPont's full-scale hydrogen-fueled flares are in the range from 0.05 to 0.6 percent of the total heat input to the flares. A venturi burner turned down to approximately one third of its 9,000 Btu/hr capacity was used for the tests described in this document, and the heat input was equal to 0.3 to 0.6 percent of the pilot flare's total heat input during the stability and destruction efficiency tests. Therefore, the heat input from the pilot during the tests was comparable to the heat input for the full-scale flares operated by DuPont.

The relatively small proportion of heat input from the venturi burner compared to the total heat input to the test flare would not be expected to have a significant effect on either the stability or destruction efficiency results, because this amount of heat is insignificant compared to the flare's total heat content. Also, the use of a pilot burner is consistent with EPA's flare specification which requires that the pilot flame be present at all times.

5. The Selection of Ethylene as the Surrogate for HAP to be used in the testing

For this study it was desired to select a surrogate for HAP that was more difficult to destroy than the volatile HAP present in the large scale flare waste streams, and which could be measured at a concentration of 10 parts per billion by volume and higher. In general, the difficulty of destruction for organics increases as the molecular weight decreases, but the limit of detection decreases as the molecular weight decreases. It is obvious then that there may be some compromise necessary in selecting a surrogate for HAP.

In order to compare the relative difficulty to destroy various species, a linear multiple regression model was used that calculates a destruction temperature using parameters describing the molecular structure, autoignition temperature, and residence time as inputs to the model. The destruction temperatures obtained are theoretical temperatures for plug flow reactors to achieve specified destruction allowing a comparison to be made among various chemical species to estimate relative destructibility (Docket No. A–97–48, Item No. II–I–14). As a first step the destruction temperatures were calculated for all the chemical species that were identified as present in DuPont's full-scale flare waste streams. The next step was to calculate destruction temperatures for the surrogates for HAP under consideration. (The results from this analysis are presented in Tables 4–3 and Table 4–4 of Docket Item II–I–14).

In comparing the model's destruction temperature estimates for candidate surrogates for HAP present in DuPont's flare streams, the best choice as a surrogate was methane, but the detection limit was too high to be accepted for the field study. The next choice was methanol but not only is the detection limit high, it is a HAP and it is also a liquid at ambient temperatures, presenting handling difficulties. The next candidate considered was ethylene which was selected for the study. It has a higher destruction temperature than all the organic HAP in the study, except methanol, and has an acceptable limit of detection. Therefore, the most difficult to destroy substance was chosen for the study that was feasible to use.

6. The Criteria for a Stable Flame

The hydrogen content reported when lift off was first observed was selected as the criterion for a stable flame, because it was easy and precise to identify. The EPA concluded that this was a conservative estimate for the stability limit because destruction efficiencies greater than 98 percent were noted even for hydrogen contents below the lift off level.

Another reason wh[illegible] EPA concluded that lift o[illegible] conservative criterio[illegible] a[illegible] was based on a corr[illegible]betw[illegible] stability ratio and th[illegible]estructio[illegible] efficiency observed [illegible]lier flar[illegible] testing conducted in [illegible] No. A–97–48, Item [illegible] time it was demonstrated that de[illegible] destruction efficiencies [illegible]e directly proportional to the ratio [illegible]the fl[illegible]gas heating value to the mi[illegible]m he[illegible]ing value for flame stabili[illegible] ratio). Regardless of [illegible] combusted, it was observed that the destruction efficiency [illegible] greater than 98 perc[illegible]ruct[illegible] when the stability r[illegible] approximately 1.2. [illegible] program, the destru[illegible] versus the ratio of actual hydrogen [illegible] hydrogen at lift off (a[illegible]logous with the stability ratio, and ref[illegible]red [illegible] hydrogen ratio) was p[illegible]t[illegible]test program. The curve of [illegible] similar to those obtained [illegible] test programs in the 1980's. These dat[illegible] points demonstrated [illegible] ratios below 1.0, wit[illegible] stability ratio of 0.95 [illegible] efficiencies greater th[illegible] achieved. Since the a[illegible] these flare specifications require a stability ratio of 1.0 or greater, [illegible] assumed that a 98 percent or greater destruction efficiency will be achieved

7. The Operating Pa[illegible]r Testing the Destructi[illegible]e., Hydrogen Content an[illegible] Velocity)

The destruction effic[illegible]ncy of [illegible]ylene for the hydrogen-fu[illegible]fla[illegible]ste[illegible] at high tip velocitie[illegible]pp[illegible]ely 100 to 120 ft/sec) be[illegible]this[illegible] velocity range expecte[illegible]prod[illegible] lower destruction effi[illegible]ncies. Therefore, if acceptable destruct[illegible] efficiencies are obse[illegible] velocities, then at le[illegible]m higher destructio[illegible] expected at lower tip[illegible]

The expectation fo[illegible] destruction efficiency[illegible] velocities is explai[illegible] phenomena. The f[illegible] due to the increase[illegible]low increased volume o[illegible]flow[illegible]s more air, and more edd[illegible]s[illegible]d[illegible] the boundary between [illegible]he air. These eddies tend t[illegible]ne of the gases' flow, [illegible]n[illegible] is able to combust t[illegible] uncombusted or in[illegible] combusted substa[illegible] ambient air.

Another phen[illegible] expectation of dec[illegible] efficiency at incre[illegible]

2. Destruction Efficiency

The measured mean destruction efficiencies and destruction efficiencies at the 95 percent confidence level are shown in Figure 1. All the measurements of destruction efficiencies at conditions more stable than lift off were above 99 percent. Further, control efficiencies greater than 98 percent were found at hydrogen contents below the lift off curve.

III. Rationale

A. The Need for Specifications for Hydrogen-Fueled Flares

The EPA is taking this action to amend 40 CFR 60.18 and 40 CFR 63.11 since the EPA sees the need to permit the use of hydrogen-fueled flares to meet the EPA control requirements. As discussed below, hydrogen has a lower heat content than organics commonly combusted in flares meeting the existing flare specifications and cannot, therefore, be used to satisfy current control requirements. However, since the combustion of hydrogen is different than the combustion of organics, and the test report demonstrates a destruction efficiency greater than 98 percent, the EPA believes that hydrogen-fueled flares meeting the specifications outlined in the amendments will achieve a control efficiency of 98 percent or greater. This level of control is equivalent to the level of control achieved by flares meeting the existing specifications. In addition to achieving the same destruction efficiency of VOC or organic HAP, the adoption of these amendments has the added advantage of reducing the formation of secondary pollutants; since the combustion of supplemental fuel would not be required by hydrogen-fueled flares to meet the existing flare specifications.

1. The Heat Content of Hydrogen

The heat content of a substance is a measure of the amount of energy stored within the bonds between atoms in each molecule of the substance. Hydrogen is a simple molecule consisting of two hydrogen atoms held together by weak, hydrogen bonds, thus resulting in a low heat content. In comparison, organic chemicals are larger chains (or rings) of carbons with hydrogens and other atoms attached to them. These molecules are held together with a combination of ionic, covalent and hydrogen bonds, which contain substantially more energy (i.e., higher heat content) than the hydrogen bond in the hydrogen molecule.

2. The Difference in Combustion Between Hydrogen and Organics

The first phenomenon to explain the difference in combustion between hydrogen and organics is related to the thermodynamics of the combustion reaction. In order for the hydrogen atom to react in the combustion/oxidation reaction, the weak hydrogen bond between the two hydrogen atoms must first be broken. Because there is less energy holding the hydrogen atoms together, less energy (heat) is required to separate them. Once the hydrogen bonds are broken, the hydrogen atoms are free to react in the combustion reaction.

The second phenomenon explaining the difference in combustion between hydrogen and organics is due to hydrogen's upper and lower flammability limits. The flammability limits are the minimum (lower) and maximum (upper) percentages of the fuel in a fuel-air mixture that can propagate a self-sustaining flame. The lower and upper flammability limits of hydrogen are 4.0 and 74.2 percent, respectively, which is the second widest range of lower and upper limits of substances typically combusted in flares (Docket No. A–97–48, Item No. II–I–2).

The third phenomenon explaining the difference in combustion between hydrogen and organics is the relative difference in diffusivity between hydrogen and organics in air. Diffusivity refers to how easily molecules of one substance mix with molecules of another. Further, the quicker the fuel and air in a flare mix, the quicker the combustion reaction occurs. The measure of how quickly a substance mixes with another substances is expressed in terms of the diffusivity coefficient. The larger the diffusivity coefficient, the quicker the mixing. The diffusivity coefficient for the mixture of hydrogen and air is an order of magnitude higher than those for the mixture of air and volatile HAP with readily available diffusivity coefficients. Therefore, hydrogen is more diffuse in air compared to organics and more quickly enters the flammability range than organics.

B. Use of DuPont Test Results as the Basis for Hydrogen-Fueled Flare Specifications

These tests were conducted by DuPont primarily for their flaring conditions. However, after reviewing the test plan, observing the testing, and thoroughly reviewing the test report supplied by DuPont, the EPA concluded that the test results were applicable to all nonassisted flares with a hydrogen content of 8.0 percent (by volume) or greater, and a diameter of 3 inches or greater. The EPA believes that the test results are universally applicable since all the effective data points demonstrated a destruction efficiency greater than 98 percent, with the majority achieving greater than 99 percent destruction. Therefore, if the test flare can achieve these destruction efficiencies, then the EPA expects industrial flares meeting the flare specifications in these amendments to achieve a destruction efficiency of 98 percent or greater.

In selecting the conditions under which the pilot flare testing was to be conducted and interpreting the results of the testing, a "conservative" decision was made for each choice, that is the condition that would most likely assure that a full-scale flare would achieve at least as high and possibly higher destruction efficiency was chosen. This approach applied to the selection of flare tip design, flare tip diameter, pilot burner heat input, and characteristics of the surrogate for HAP for destruction testing. It also applied to the evaluation of stability testing and destruction efficiency results, as well as the selection of operating limits applying to hydrogen concentration and tip discharge velocity.

1. The Selection of the Flare Type

A nonassisted, plain-tip flare was used in the testing program because all of DuPont's flares are nonassisted. A nonassisted flare is a flare tip without any auxiliary provision for enhancing the mixing of air into its flame. The plain-tip means no tabs or other devices to redistribute flow were added to the rim of the flare. Because the presence of tabs improves the stability of the flare by channeling the flare's flow and improving mixing of fuel and air, it was concluded that the lack of tabs (i.e., plain tip) would result in the least stable test conditions.

2. The Comparison of the Selected Flare with the Existing Flare Specifications

A 3-inch flare was selected for the emission test since this was the same size flare used for the testing to establish the basis for the existing flare specifications in 40 CFR 60.18 and 40 CFR 63.11. Stability tests were conducted using propane to determine if the flare was operating properly and could meet the existing flare specifications. Test results demonstrated that this flare was stable when it was expected to be stable and not stable when it was not expected to be (i.e., as indicated by the existing flare specifications).

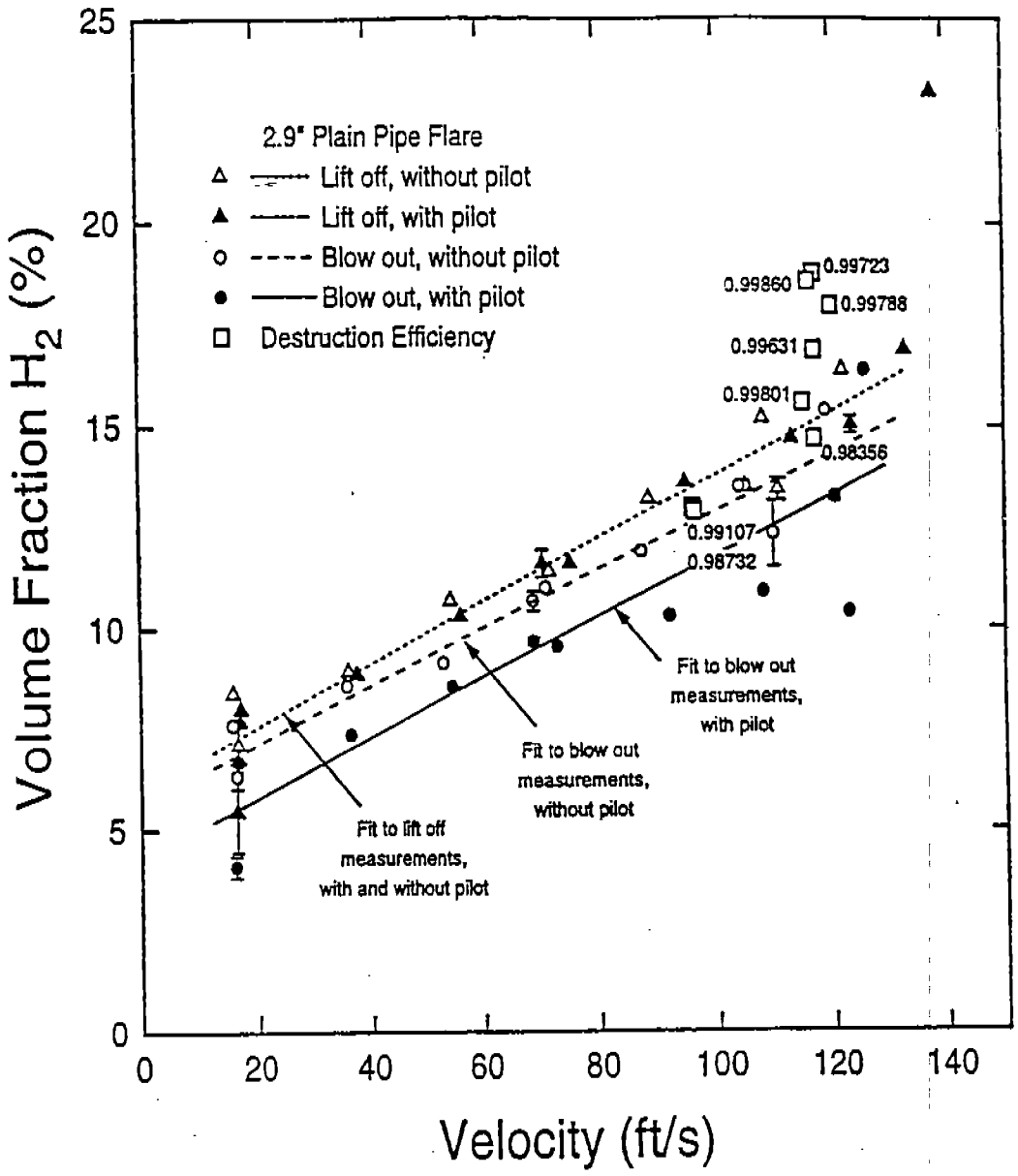


Figure 1. Hydrogen volume fractions measured at lift off and blow out on the nominal 3-inch plain pipe flare, with and without pilot flame (Docket No. A-97-48, II-I-1).

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II. DuPont Test Program for Hydrogen-Fueled Flares

A. Summary of Earlier Relevant Hydrogen-Fueled Flares Tests

There has been previous testing of hydrogen-fueled flares. In 1970, a study was conducted to evaluate the stability of hydrogen-fueled flares (Docket No. A–97–48, Item No. II–I–6). In this study the velocity gradient and the volume percent hydrogen were correlated with the observation of blow out (i.e., when the flame is completely extinguished) for diffusion flares with hydrogen concentrations in the 50 to 100 volume-percent range. The velocity gradient is defined as the change in velocity at the boundary of the fuel and air. A critical velocity gradient for a given volume-percent of hydrogen was identified, above which the flame was unstable. The significance of this study was that the stability of hydrogen-rich flares (i.e., 50 to 100 volume-percent) was able to be predicted by calculating the velocity gradient. Another study was conducted in 1984 (Docket No. A–97–48, Item No. II–I–9), where the velocity gradient and predictions of flame stability were investigated, but in the range of hydrogen concentrations from 4 to 75 volume-percent hydrogen. However, data were not collected in these tests sufficient to determine destruction efficiencies.

B. Objectives of the DuPont Test Program

The primary objective of DuPont's hydrogen-fueled flare testing program was to demonstrate that the hydrogen-fueled flares used at their facilities were achieving a volatile HAP and VOC destruction efficiency equal to or greater than that of flares meeting the existing flare specifications. Specific technical objectives to support this primary objective were:

(1) To determine the limits of velocity and hydrogen content within which hydrogen-fueled flares are stable, and;

(2) To measure the destruction efficiencies of a surrogate for HAP under conditions corresponding to those in industrial hydrogen-fueled flares.

C. Design and Implementation of DuPont Test Program

The results of the testing program form the basis of these flare specification amendments. The testing program used a nominal 3-inch pipe flare with a hood and a stack suspended over the flare to capture the plume. Stability and destruction efficiency tests were performed on the test flare.

The first portion of the testing consisted of stability testing. To determine the flare's stability limit, a stable flame was first established, then the hydrogen flow rate was slowly reduced while holding the tip velocity constant. Hydrogen readings were recorded when the flame lifted off, and again when the flame completely blew out. This procedure was repeated at different tip velocities in the 16 to 130 ft/s range, for flares with and without pilot burners.

The destruction efficiency of the flare was tested at high gas velocities and hydrogen contents in the stable range. The gases in the waste gas stream and in the hood stack were sampled and analyzed for concentrations of the compound chosen as a surrogate for HAP. Since the surrogate is a VOC this destruction efficiency also demonstrates the destruction efficiency of VOC. Destruction efficiencies were then calculated from these results.

D. Results of the Test Program

1. *Flare Stability*

The measurements of the hydrogen volume percent at lift off and blow out for the piloted and unpiloted nominal 3-inch (2.9 inch inner diameter) pipe flare are shown in Figure 1 as a function of velocity. Because the hydrogen content at lift off was essentially the same for flares with and without a pilot burner, a single line was fit to the data sets of lift off measurements for piloted and unpiloted flares, this is represented by the upper curve in Figure 1. The data point in the far upper right corner of the figure is an unexplained outlier that is inconsistent with all other data points and was excluded from the linear regression analysis of the lift off data set. The middle and lower curves in Figure 1 are the blow out curves without and with a pilot, respectively.

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C. Selection of Specifications for Hydrogen-Fueled Flares
D. Decision to Proceed With Direct Final Rulemaking
IV. Summary of the Amendments to the Flare Specifications
V. Impacts
A. Primary Air Impacts
B. Other Environmental Impacts
C. Energy Impacts
D. Cost and Economic Impacts
E. Summary of Impacts
VI. Administrative
A. Paperwork Reduction Act
B. Executive Order 12866
C. Regulatory Flexibility Act
D. Unfunded Mandates Reform Act
E. Submission to Congress and the Comptroller General

I. Background

The General Control Device Requirements of 40 CFR 60.18 were issued as a final rule on January 21, 1986 and are applicable to control devices complying with New Source Performance Standards (NSPS) promulgated by the Agency under Section 111 of the Clean Air Act (CAA), and National Emission Standards for Hazardous Air Pollutants (NESHAP) issued under the authority of Section 112 prior to the CAA Amendments of 1990. The Control Device Requirements of 40 CFR 63.11 were issued as a final rule on March 16, 1994 and are applicable to control devices used to comply with NESHAP issued under the authority of the CAA Amendments of 1990, for the control of hazardous air pollutants (HAP). These existing control device requirements contain specifications defining required operating conditions of control devices generally. Specifically, 40 CFR 60.18(b) through (d), and 40 CFR 63.11(b) contain the operating conditions for flares (i.e., existing flare specifications). Flares operating in accordance with these specifications destroy volatile organic compounds (VOC) or volatile HAP with a destruction efficiency of 98 percent or greater. These existing flare specifications were written for flares combusting organic emission streams. The current regulations do not permit the use of flares not meeting these specifications to satisfy control requirements under the CAA.

E.I. du Pont de Nemours and Company (DuPont) representatives requested that the EPA either add specific limits for hydrogen-fueled flares to the existing flare specifications or approve their hydrogen-fueled flares as alternate means of emission limitation under 40 CFR 61.484, 40 CFR 61.12(d) and 40 CFR 63.6(g) (Docket No. A–97–48, Item No. II–D–2). DuPont subsequently sponsored a testing program to demonstrate that hydrogen-fueled flares in use at DuPont destroy emissions with greater than 98 percent efficiency. The test program demonstrated that these hydrogen-fueled flares achieved greater than 98 percent destruction efficiency. Further, the EPA judged the conditions of the test program to be universally applicable under the specifications contained in these amendments. Therefore, this notice provides the background and rationale for this action to add specifications for hydrogen-fueled flares to the existing flare specifications.

This notice is being published as a direct final notice since the EPA does not anticipate relevant adverse comments. For the reasons discussed in this notice, the EPA believes that hydrogen-fueled flares meeting the operating specification in this amendment will achieve the same control efficiency, i.e., 98 percent or greater, as flares complying with the existing flare specifications. Further, these specifications will result in reduced emissions of carbon monoxide, nitrogen oxides, and carbon dioxide formed during the combustion of supplemental fuel necessary for hydrogen-fueled flares to comply with existing regulations. By promulgating these amendments some companies using hydrogen-fueled flares can, as of the effective date of this amendment, reduce supplemental fuel use resulting in cost savings and reduced emissions.

A. Existing Flare Specifications

Flares are commonly used in industry to safely combust VOC and volatile HAP. Flares can accommodate fluctuations in VOC or volatile HAP concentrations, flow rate, heating value, and inerts content. Further, flares are appropriate for continuous and intermittent flow applications. Some organic emission streams can be flared without the need for supplemental fuel. However, the use of supplemental organic fuel such as natural gas to ensure the complete combustion of emissions is common.

The EPA determined the destruction efficiency of flares combusting organic emissions in the early 1980's and developed the existing flare specifications as a result of this work. The testing was conducted with a nominal 8-inch diameter flare head furnished by a vendor (Docket No. A–97–48, Item No. I–II–12) and pilot-scale flares (Docket No. A–97–48, Item No. I–II–5). From destruction efficiency testing under a wide variety of velocities, gas compositions, tip diameters, air and steam assistance, and the presence or absence of a pilot burner, it was concluded that the destruction efficiency of flares was above 96 percent when operated within the conditions of the flare specifications. These specifications list the minimum heat content of the flame (British thermal units per standard cubic feet of gas, or Btu/scf), and the tip velocity (feet per second, or ft/s) allowed for steam-assisted, air-assisted and nonassisted flares.

B. DuPont's Request for Specifications for Hydrogen-Fueled Flares

DuPont operates six flares at three facilities which are used to combust waste gases containing hydrogen (from 13 to 22 mol percent), VOC and volatile HAP. These waste streams also contain other combustible waste gases, inerts, and oxygen. All of DuPont's hydrogen-fueled flares are nonassisted and use pilot burners.

The concentrations of the combustible gases are low, and since the heating value of hydrogen per unit of volume is low, the DuPont emission streams have lower volumetric heat contents than the streams of flares meeting the existing flare specifications. Because DuPont's six flares do not meet the existing flare specifications, and three of these flares are used to control emissions for HAP sources currently subject to NESHAP, DuPont initiated a process to demonstrate that their hydrogen-fueled flares achieve the same destruction efficiency as flares complying with the existing flare specifications. DuPont began the process by investigating the literature on hydrogen-fueled flares (Docket No. A–97–48, Item No. II–I–2). The objective of this investigation was to find any data that may exist in earlier hydrogen-fueled flare test reports that would support their assertion that hydrogen-fueled flares achieve a control efficiency for VOC and volatile HAP of 98 percent or greater. The investigation concluded that no such historical data exist.

At this point, DuPont wrote a letter to the EPA, discussed in the introduction to this section, asking the EPA to consider either adding specific limits for hydrogen-fueled flares to the existing specifications, or approving their hydrogen-fueled flares as an alternate means of emission limitation. DuPont stated that they would provide testing to support this request, and the EPA's Office of Air Quality Planning and Standards (OAQPS) and Office of Research and Development (ORD) agreed to review their test plan, the testing and review the test report.

justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the July 22, 1997, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on May 4, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended effective date.

Dated: April 22, 1998.

Carol Browner,

Administrator.

[FR Doc. 98–11542 Filed 5–1–98; 8:45 am]

BILLING CODE 6560–50–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60 and 63

[AD–FRL–6003–7]

RIN 2060–AH94

Standards of Performance for New Stationary Sources: General Provisions; National Emission Standards for Hazardous Air Pollutants for Source Categories: General Provisions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: This action amends the General Control Device Requirements applicable to flares in 40 CFR Part 60 which were issued as a final rule on January 21, 1986, and the Control Device Requirements applicable to flares in 40 CFR Part 63 which were issued as a final rule on March 16, 1994. This action amends existing specifications to permit the use of hydrogen-fueled flares. For additional information concerning comments, see the parallel proposal found in the Proposed Rules Section of this **Federal Register**.

DATES: This direct final rule is effective June 23, 1998 without further notice unless the Agency receives relevant adverse comments by June 3, 1998. Should the Agency receive such comments, it will publish a document withdrawing this rule. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of June 23, 1998.

ADDRESSES: *Comments.* Comments should be submitted (in duplicate, if possible) to: Air and Radiation Docket and Information Center (6102), Attention Docket No. A–97–48 (see docket section below), Room M–1500, U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460. The EPA requests that a separate copy also be sent to Mr. Robert Rosensteel (see **FOR FURTHER INFORMATION CONTACT** section for address). Comments may also be submitted electronically by following the instructions provided in the **SUPPLEMENTARY INFORMATION** section. No Confidential Business Information (CBI) should be submitted through electronic mail.

Docket. The official record for these amendments has been established under docket number A–97–48. A public version of this record, including printed, paper versions of electronic comments and data, which does not include any information claimed as CBI, is available for inspection between 8 a.m. and 4 p.m., Monday through Friday, excluding legal holidays. The official rulemaking record is located at the address in the **ADDRESS** section. Alternatively, a docket index, as well as individual items contained within the docket, may be obtained by calling (202) 260–7548 or (202) 260–7549. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Rosensteel, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5608.

SUPPLEMENTARY INFORMATION:

Electronic Filing

Electronic comments and data can be sent directly to EPA at: a-and-r-docket@epamail.epa.gov. Electronic comments and data must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on diskette in Word Perfect 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number A–97–48. Electronic comments may be filed online at many Federal Depository Libraries.

Electronic Availability

This document is available in Docket No. A–97–48, or by request from the EPA's Air and Radiation Docket and Information Center (see **ADDRESSES**), and is available for downloading from the Technology Transfer Network (TTN), the EPA's electronic bulletin board system. The TTN provides information and technology exchange in various areas of emissions control. The service is free, except for the cost of a telephone call. Dial (919) 541–5742 for up to a 14,000 baud per second modem. For further information, contact the TTN HELP line at (919) 541–5384, from 1:00 p.m. to 5:00 p.m., Monday through Friday, or access the TTN web site at: www.epa.gov/ttn/oarpg/rules.html.

Regulated Entities

Entities affected by this direct final rule include:

Category	Examples of regulated entities
Industry	Synthetic Organic Chemical Manufacturing Industries; and Petroleum Refining Industries.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists the types of entities that the EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected. If you have any questions regarding the applicability of this direct final rule to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

The information presented in this preamble is organized as follows:

I. Background
  A. Existing Flare Specifications
  B. DuPont's Request for Specifications for Hydrogen-Fueled Flares
II. DuPont Test Program For Hydrogen-Fueled Flares
  A. Summary of Earlier Relevant Hydrogen-Fueled Flares Tests
  B. Objectives of the DuPont Test Program
  C. Design and Implementation of DuPont Test Program
  D. Results of the Test Program
III. Rationale
  A. The Need for Specifications for Hydrogen-Fueled Flares
  B. Use of DuPont Test Results as the Basis for Hydrogen-Fueled Flare Specifications

may be significantly or uniquely impacted by the rule.

EPA has determined that the approval action promulgated does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This Federal action approves pre-existing requirements under State or local law, and imposes no new Federal requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

D. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a "major" rule as defined by 5 U.S.C. § 804(2).

E. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by July 6, 1998. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2)).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, *Hydrocarbons, Carbon monoxide, Particulate matter,* Incorporation by reference, Intergovernmental relations, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Note: Incorporation by reference of the State Implementation Plan for the State of Arizona was approved by the Director of the Federal Register on July 1, 1982.

Dated: March 20, 1998.

Felicia Marcus,

Regional Administrator, Region IX.

40 CFR part 52 is amended as follows:

PART 52—[AMENDED]

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart D—Arizona

2. Section 52.120 by adding paragraph (c)(82)(i)(E) to read as follows:

§ 52.120 Identification of plan.

* * * * *

(c) * * *

(82) * * *

(i) * * *

(E) Maricopa County.

(*1*) Ordinance P--7, Maricopa County Trip Reduction Ordinance, adopted May 26, 1994.

* * * * *

[FR Doc. 98--11759 Filed 5--1--98; 8:45 am]

BILLING CODE 6560--50--P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[FRL--5980--9]

Technical Amendments to Approval and Promulgation of Implementation Plans; Minnesota; Correction of Effective Date Under Congressional Review Act (CRA)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule; correction of effective date under CRA.

SUMMARY: On July 22, 1997 (62 FR 39120), the Environmental Protection Agency published in the **Federal Register** a direct final rule approving a revision to the Minnesota State Implementation Plan (SIP) for the Saint Paul particulate matter (PM) nonattainment area located in Ramsey County, Minnesota, which established an effective date of September 22, 1997. This document corrects the effective date of the rule to May 4, 1998 to be consistent with sections 801 and 808 of the Congressional Review Act (CRA), enacted as part of the Small Business Regulatory Enforcement Fairness Act, 5 U.S.C. 801 and 808.

EFFECTIVE DATE: This rule is effective on May 4, 1998.

FOR FURTHER INFORMATION CONTACT: Tom Eagles, Office of Air at (202) 260--5585.

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CRA.

Section 553 of the
Procedure Act, 5 U.S.
provides that, when a
cause finds that notice
procedure are impracti
unnecessary or contrary
interest, an agency may i
without providing notice
opportunity for public com
has determined that there i
for making today's rule fina
prior proposal and opportur
comment because EPA mere
correcting the effective date c
promulgated rule to be consis
the congressional review requi
of the Congressional Review Ac
matter of law and has no discret
this matter. Thus, notice and pu
procedure are unnecessary. The
finds that this constitutes good ca
under 5 U.S.C. 553(b)(B). Moreove
since today's action does not create
new regulatory requirements and
affected parties have known of the
underlying rule since July 22, 199
finds that good cause exists to provide
for an immediate effective date pursua
to 5 U.S.C. 553(d)(3) and 808(2).

II. Administrative Requirements

Under Executive Order 12866
51735, October 4, 1993), this actio
not a "significant regulatory action"
is therefore not subject to review by the
Office of Management and Budget. In
addition, this action does not impose
any enforceable duty or contain any
unfunded mandate as describe
Unfunded Mandates Reform Act
(Pub. L. 104--4), or require
consultation with State officials
specified by Executive Ord
FR 58093, October 28, 199
special consideration of

Preservation of the Halibut Fishery of the North Pacific Ocean and the Bering Sea (Convention) to promulgate regulations for the conservation and management of the Pacific halibut fishery. Section 5 of the Halibut Act also provides that the Secretary of Commerce (Secretary) shall have the general responsibility for carrying out the Convention, and that the Secretary shall adopt such regulations as may be necessary to carry out the purposes and objectives of the Convention and the Halibut Act. The Secretary's authority has been delegated to the Assistant Administrator for Fisheries, NOAA (AA).

In 1996, the Council was requested by Alaska Native tribal organizations to review the prohibition on retaining undersized halibut caught with authorized commercial gear. This request was made on behalf of Alaska Native fishermen of Yupik descent who were retaining undersized halibut harvested along with CDQ halibut of commercial length in Regulatory Area 4E. Traditionally, fishermen of Yupik descent have kept all fish caught and have endeavored to utilize that fish to the fullest extent possible. This practice is in keeping with traditional Yupik belief that a fish, as well as the stock of fish to which a captured fish is returned, is irreparably harmed by its capture and release.

In June 1997, the Council recommended that regulations be developed that would allow the retention of undersized halibut caught with authorized commercial gear in Regulatory Area 4E for personal use. The IPHC, at its annual meeting during the week of January 26, 1998, relaxed its existing regulation on the minimum size retention limit to allow CDQ fishermen in Regulatory Area 4E to land undersized halibut caught with authorized commercial gear for personal use. NMFS published a proposed rule consistent with the IPHC regulation on March 9, 1998 (63 FR 11401), that would revise its current fishing regulations to allow the retention of undersized halibut caught with authorized commercial gear in Regulatory Area 4E for personal use. The public comment period for this proposed rule ended on March 24, 1998. No public comments were received concerning this action.

This final rule revises regulations that were in conflict with the customary and traditional fishing practices of the fishermen of Yupik descent. Three changes are made to the final rule to make it consistent with the IPHC annual management measures, published on March 17, 1998 (63 FR 13000). These changes are not considered substantive in nature. First, the term "setline" is added to the final rule. This term is added to confirm that undersized halibut could be retained while commercial fishing with setline gear, the only gear that is authorized for commercial fishing. Second, the final rule is made effective only through December 31, 1999, because the IPHC anticipates that a comprehensive solution to the subsistence issue for the halibut fishery will be developed by that date. Finally, minor editorial changes are made to the final rule to make it conform more closely to the text of the IPHC annual management measures.

Classification

The Council prepared an EA/RIR for this action that describes the management background, the purpose and need for action, the management action alternatives, and the environmental and the socio-economic impacts of the alternatives. The AA has concluded that this action is not likely to significantly affect the quality of the human environment, or expected to have significant impacts on endangered or threatened species, or marine mammals. A copy of the EA/RIR can be obtained from NMFS (see **ADDRESSES**).

The Assistant General Counsel for Legislation and Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this rule would not have a significant economic impact on a substantial number of small entities. No comments were received regarding this certification. As a result, a regulatory flexibility analysis was not prepared.

This final rule has been determined to be not significant for purposes of E.O. 12866.

List of Subjects in 50 CFR Part 300

Fisheries, Fishing, Reporting and recordkeeping requirements, Treaties.

Dated: April 29, 1998.

Rolland A. Schmitten,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For reasons set out in the preamble, 50 CFR part 300 is amended to read as follows:

PART 300—INTERNATIONAL FISHERIES REGULATIONS

1. The authority citation for 50 CFR part 300, subpart E continues to read as follows:

Authority: 16 U.S.C. 773–773k.

2. In § 300.63, paragraph (c) is added to read as follows:

§ 300.63 Catch sharing plans and domestic management measures.

* * * * *

(c) (Applicable through December 31, 1999). A person may retain halibut taken with setline gear in Area 4E that are smaller than the size limit specified in the annual management measures published pursuant to § 300.62, provided that no person may sell or barter such halibut.

[FR Doc. 98–11894 Filed 5–4–98; 8:45 am]

BILLING CODE 3510–22–F

will not have a significant economic impact on a substantial number of small business entities because the requirements of the rule are being stayed for continuous web cleaning machines.

E. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, the EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and tribal governments, in aggregate, or by the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires the EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before the EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments or impose obligations upon them. Therefore, today's rule is not subject to the requirements of section 203 of the UMRA.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: April 27, 1998.

Carol M. Browner,

Administrator.

Title 40 chapter I of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart T—[Amended]

2. Section 63.461 is amended by adding in alphabetical order the definition for "continuous web cleaning machine" and by revising the definition for "part" to read as follows:

§ 63.461 Definitions.

* * * * *

Continuous web cleaning machine means a solvent cleaning machine in which parts such as film, coils, wire, and metal strips are cleaned at speeds in excess of 11 feet per minute. Parts are generally uncoiled, cleaned such that the same part is simultaneously entering and exiting the solvent cleaning machine, and then recoiled or cut.

* * * * *

Part means any object that is cleaned in a solvent cleaning machine. Parts include, but are not limited to, discrete parts, assemblies, sets of parts, and parts cleaned in a continuous web cleaning machine (i.e., continuous sheets of metal, film).

* * * * *

3. Section 63.470 is added to Subpart T to read as follows:

§ 63.470 Stay of effective date.

Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.460 thru 63.469 of subpart T is stayed until August 3, 1998 as applied to continuous web cleaning machines using halogenated HAP solvents.

[FR Doc. 98–11753 Filed 5–4–98; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 300

[Docket No. 980225048–8099–03; I.D. 021898B]

RIN 0648–AK58

Pacific Halibut Fisheries; Retention of Undersized Halibut in Regulatory Area 4E

AGENCY: National Marine Fisheries Service (NMFS); National Oceanic and Atmospheric Administration (NOAA); Commerce.

ACTION: Final rule.

SUMMARY: NMFS issues a final rule that would allow the retention of halibut less than 32 inches (81.3 cm) with the head on, or less than 24 inches (61 cm) with the head off (undersized halibut) caught with setline gear in International Pacific Halibut Commission (IPHC) Regulatory Area 4E for personal use. Commercial sale of undersized halibut would remain prohibited. This action is necessary to implement the recommendation of the North Pacific Fishery Management Council (Council) to allow the legal harvest of undersized halibut by persons using Community Development Quota (CDQ) in Regulatory Area 4E. This action is intended to provide for the continued existence of the customary and traditional food practices of indigenous inhabitants by allowing them to retain all halibut caught with setline gear in Regulatory Area 4E.

DATES: This final rule is effective June 4, 1998.

ADDRESSES: The final Environmental Assessment/Regulatory Impact Review (EA/RIR) prepared for this action may be obtained from the Sustainable Fisheries Division, Alaska Region, NMFS, 709 West 9th Street, Room 453, Juneau, AK 99801, or P.O. Box 21668, Juneau, AK 99802, Attention: Lori J. Gravel.

FOR FURTHER INFORMATION CONTACT: John Lepore, 907–586–7228

SUPPLEMENTARY INFORMATION: The Northern Pacific Halibut Act (Halibut Act, 16 U.S.C. 773–773k), in section 5, provides that the Regional Fishery Management Council having authority for the geographical area concerned may recommend management measures governing Pacific halibut catch in U.S. Convention waters that are in addition to, but not in conflict with, regulations of the IPHC. The IPHC is the body authorized by the Convention between the United States and Canada for the

61801). These standards were codified as subpart T in 40 CFR part 63. These standards established equipment and work practice standards for individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machines using any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1 trichloroethane, carbon tetrachloride, or chloroform, or any combination of these halogenated HAP solvents in a concentration greater than 5 percent by weight, as a cleaning or drying agent.

Since promulgation of the halogenated solvent cleaning NESHAP on December 2, 1994, the EPA has become aware of the existence of various sources cleaning parts such as film, coils, wire, and metal strips at speeds in excess of the 11 feet per minute limit in the NESHAP using halogenated cleaning solvents. Parts are generally uncoiled, cleaned such that the same part is simultaneously entering and exiting the solvent cleaning machine, and then recoiled or cut. These solvent cleaning machines are typically referred to as continuous web cleaning machines. The design and operation, and therefore, the emission characteristics of these machines are different from the solvent cleaning machines (e.g., batch cold cleaners, in-line cleaners) that the EPA analyzed during the NESHAP rule development process. Therefore, in order for the EPA to properly address emission characteristics and controls, and to better regulate HAP emissions from continuous web cleaning machines, the Agency is staying the effectiveness of the provisions of the NESHAP for continuous web cleaning machines using halogenated HAP solvents. The EPA will take this time to further evaluate these types of operations, their emission characteristics, and the effectiveness of various control measures in order to determine equivalent methods of control for them.

In addition, the EPA is also revising the definition of the term "part" and adding a definition for continuous web cleaning machine to § 63.461.

II. Issuance of Stay

The EPA hereby issues a 3-month stay of the effectiveness of the NESHAP for halogenated solvent cleaning machines applicable to continuous web cleaning machines using halogenated HAP. The EPA will also reconsider the compliance dates in the rule and, following the notice and comment procedures of section 307(d) of the Clean Air Act, will take appropriate action.

III. Authority for Stay

The stay announced by this notice is being issued pursuant to section 553(b)(3)(B) of the Administrative Procedure Act.

The grounds for staying the requirements of this rule for continuous web cleaning machines arose after the public comment period and close to the compliance date for this rule. The impracticality of requiring compliance by continuous web cleaning machines with the provisions of the NESHAP became apparent after the final rule had been promulgated. Therefore, the EPA is staying the effectiveness of the rule for 3 months in order to allow time to evaluate equivalent methods of control for continuous web cleaning machines using halogenated HAP solvents.

Because the need for a stay was only realized recently, and the compliance date for the rule was December 2, 1997, it is both impracticable and contrary to the public interest to provide an opportunity for comment before issuing the stay. The EPA, therefore, finds that there is good cause in accordance with section 553(b)(3)(B) of the Administrative Procedures Act to publish this temporary stay without prior opportunity for public comment.

IV. Proposed Compliance Extension

The EPA may not be able to complete the equivalent methods of control determination for continuous web cleaning machines within the 3-month period expressly provided for in this action. Therefore, EPA is proposing to temporarily extend the applicable compliance dates. In the Proposed Rule Section of today's **Federal Register**, the EPA proposes a temporary extension of the compliance dates beyond 3 months in order to complete the equivalent methods of control determinations and revisions of the rules in question.

V. Administrative Requirements

A. Paperwork Reduction Act

There are no additional information collection requirements associated with this temporary stay. Therefore, approval under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.*, is not required. b. Executive Order 12866

B. Executive Order 12866

Under Executive Order 12866, the EPA is required to determine whether a regulation is "significant," and therefore, subject to Office of Management and Budget review and the requirements of this Executive Order to prepare a regulatory impact analysis. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may (1) have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this action is not a "significant regulatory action" within the meaning of the Executive Order because this action provides a temporary stay of the effectiveness of the rule to allow time to evaluate equivalent methods of control for continuous web cleaning machines using halogenated HAP solvents.

C. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801, *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. However, section 808 provides that any rule for which the issuing agency for good cause finds (and incorporates the finding and a brief statement of reasons therefore in the rule) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest, shall take effect at such time as the agency promulgating the rule determines. 5 U.S.C. 808(2). As stated previously, the EPA has made such a good cause finding, including the reasons therefore, and established an effective date of May 5, 1998. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

D. Regulatory Flexibility

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this action

the effective date of the rule consistent with the provisions of the CRA.

Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, an agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for making today's rule final without prior proposal and opportunity for comment because EPA merely is correcting the effective date of the promulgated rule to be consistent with the congressional review requirements of the Congressional Review Act as a matter of law and has no discretion in this matter. Thus, notice and public procedure are unnecessary. The Agency finds that this constitutes good cause under 5 U.S.C. 553(b)(B). Moreover, since today's action does not create any new regulatory requirements and affected parties have known of the underlying rule since July 23, 1997, EPA finds that good cause exists to provide for an immediate effective date pursuant to 5 U.S.C. 553(d)(3) and 808(2).

II. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), or require prior consultation with State officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the July 23, 1997, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on May 5, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended effective date.

Dated: April 22, 1998.

Carol Browner,

Administrator.

[FR Doc. 98–11541 Filed 5–4–98; 8:45 am]

BILLING CODE 6560–50–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–6007–5]

RIN 2060–A104

National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; Notice of temporary stay.

SUMMARY: Today's action announces a 3-month stay of certain national emission standards for hazardous air pollutants (NESHAP) for certain sources. The effectiveness of the provisions for "National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning," December 2, 1994) for continuous web cleaning machines using halogenated hazardous air pollutant (HAP) solvents is stayed for 3 months for good cause pursuant to section 553(b)(3)(B) of the Administrative Procedure Act. Since the compliance date for existing affected sources covered by this NESHAP was December 2, 1997, it is not practical to propose and take public comment on this 3-month stay.

This action also revises the definition of the term "part" and adds a definition for continuous web cleaning machine to § 63.461. A continuous web cleaning machine is one that cleans parts such as film, coils, wire, and metal strips at speeds in excess of 11 feet per minute. Parts are generally uncoiled, cleaned such that the same part is simultaneously entering and exiting the solvent cleaning machine, and then recoiled or cut.

Elsewhere in the Proposed Rules Section of today's **Federal Register**, the EPA proposes to extend the compliance date for sources affected by today's stay for 1 year in order to complete the rulemaking pertaining to control of emissions from continuous web cleaning machines.

This stay affects only those sources which meet the criteria describing a continuous web cleaning machine using halogenated HAP solvents.

EFFECTIVE DATE: May 5, 1998.

FOR FURTHER INFORMATION CONTACT: Mr. Paul Almodóvar at (919) 541–0283, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. For information regarding the applicability of this action to a particular entity, contact Mrs. Tracy Back, Manufacturing Branch, Office of Compliance (2223A), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; telephone (202) 564–7076.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are owners or operators of continuous web cleaning machines using any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1 trichloroethane, carbon tetrachloride, or chloroform, or any combination of these halogenated HAP solvents, in a concentration greater than 5 percent by weight, as a cleaning or drying agent. Regulated categories include:

Category	Examples of regulated entities
Industry	Facilities engaging in cleaning operations using halogenated solvent cleaning machines.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities that the EPA is now aware of that potentially could be regulated by this action. Other types of entities not listed in the table also could be regulated. To determine whether your facility [company, business, organization, etc.] is regulated by this action, you should carefully examine the applicability criteria in § 63.460 of the NESHAP for halogenated solvent cleaning operations that was promulgated in the **Federal Register** on December 2, 1994 (59 FR 61801) and codified at 40 CFR part 63, subpart T. If you have questions regarding the applicability of this action to a particular entity, consult Mrs. Tracy Back at the address listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

I. Background

On December 2, 1994, the EPA promulgated NESHAP for halogenated solvent cleaning operations (59 FR

section, the applicability shall be based on the utilization that occurred during the year preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding May 12, 1998.

* * * * *

(k) Except as provided in paragraphs (l), (m), and (p) of this section, sources subject to subparts F, G, or H of this part are required to achieve compliance on or before the dates specified in paragraphs (k)(1) through (k)(8) of this section.

* * * * *

(l)(1) * * *

(ii)(A) Such construction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart;

(B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section; and

* * * * *

(2) * * *

(ii)(A) Such reconstruction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart; and

(B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section.

* * * * *

(p) *Compliance dates for chemical manufacturing process units that produce crotonaldehyde or tetrahydrobenzaldehyde.* Notwithstanding the provisions of paragraph (k) of this section, chemical manufacturing process units that meet the criteria in paragraphs (b)(1)(ii), (b)(2), and (b)(3) of this section shall be in compliance with this subpart and subparts G and H of this part by the dates specified in paragraphs (p)(1) and (p)(2) of this section, as applicable.

(1) If the source consists only of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section, new sources shall comply by the date specified in paragraph (p)(1)(i) of this section and existing sources shall comply by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.

(i) Upon initial start-up or May 12, 1998, whichever is later.

(ii) This subpart and subpart G of this part by May 14, 2001, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in this subpart and subpart G of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in this subpart and subpart G of this part, August 22, 1997 shall be used as the applicable date for that provision.

(iii) Subpart H of this part by May 12, 1999, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in subpart H of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in subpart H of this part, August 22, 1997 shall be used as the applicable date for that provision.

(2) If the source consists of a combination of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) and (b)(1)(ii) of this section, new chemical manufacturing process units that meet the criteria in paragraph (b)(1)(ii) of this section shall comply by the date specified in paragraph (p)(1)(i) of this section and existing chemical manufacturing process units producing crotonaldehyde and/or tetrahydrobenzaldehyde shall comply by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.

3. Section 63.103 is amended by adding paragraph (b)(6) to read as follows:

§ 63.103 General compliance, reporting, and recordkeeping provisions.

* * * * *

(b) * * *

(6) The owner or operator of a flexible operation unit shall conduct all required compliance demonstrations during production of the primary product. The owner or operator is not required to conduct compliance demonstrations for operating conditions during production of a product other than the primary product. Except as otherwise provided in this subpart or in subpart G or subpart H of this part, as applicable, the owner or operator shall operate each control device, recovery device, and/or recapture device that is required or used for compliance, and associated monitoring systems, without regard for whether the product that is being produced is the primary product or a different product. Except as otherwise provided in this subpart, subpart G and/or subpart H of this part, as applicable, operation of a control device, recapture device and/or recovery device required or used for compliance such that the daily average of monitored parameter values is outside the parameter range established pursuant to § 63.152(b)(2), or such that the monitoring data show operation inconsistent with the monitoring plan established pursuant to § 63.120(d)(2) or § 63.181(g)(1)(iv), shall constitute a violation of the required operating conditions.

* * * * *

Table 1 of Subpart F [Amended]

4. Table 1 of subpart F is amended by removing the entry for acetaldol and its associated CAS number and group number.

[FR Doc. 98–12579 Filed 5–11–98; 8:45 am]
BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–300648; FRL–5787–8]

RIN 2070–AB78

Azoxystrobin; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes a time-limited tolerance for combined residues of azoxystrobin or methyl (*E*)-2-[2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl]-3-methoxyacrylate) and its Z isomer in or on cucurbits and watercress . This action is in response to EPA's granting of an emergency exemption under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) authorizing use of the pesticide on cucurbits and watercress in several states. This regulation establishes a maximum permissible level for residues of azoxystrobin in this food commodity pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), as amended by the Food Quality Protection Act (FQPA) of 1996.

statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate or to the private sector, of $100 million or more. Under Section 205, the EPA must select the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that today's action does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: May 1, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart F—National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry

2. Section 63.100 is amended as follows:

a. By revising paragraphs (b)(1), (d) introductory text, (d)(3) introductory text, the first sentence of paragraph (g)(2)(iii), the first sentence of paragraph (h)(2)(iv), the first sentence of paragraph (i)(2)(iv), (k) introductory text, (l)(1)(ii), (l)(2)(ii);

b. By adding paragraphs (b)(1)(i), (b)(1)(ii), (d)(4), (g)(2)(iii)(A), (g)(2)(iii)(B), (h)(2)(iv)(A), (h)(2)(iv)(B), (i)(2)(iv)(A), (i)(2)(iv)(B), and (p).

The revisions and additions read as follows:

§ 63.100 Applicability and designation of source.

* * * * *

(b) * * *

(1) Manufacture as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) or (b)(1)(ii) of this section.

(i) One or more of the chemicals listed in table 1 of this subpart; or

(ii) One or more of the chemicals listed in paragraphs (b)(1)(ii)(A) or (b)(1)(ii)(B) of this section:

(A) Tetrahydrobenzaldehyde (CAS Number 100–50–5); or

(B) Crotonaldehyde (CAS Number 123–73–9).

* * * * *

(d) The primary product of a chemical manufacturing process unit shall be determined according to the procedures specified in paragraphs (d)(1), (d)(2), (d)(3), and (d)(4) of this section.

* * * * *

(3) For chemical manufacturing process units that are designed and operated as flexible operation units producing one or more chemicals listed in table 1 of this subpart, the primary product shall be determined for existing sources based on the expected utilization for the five years following April 22, 1994 and for new sources based on the expected utilization for the first five years after initial start-up.

* * * * *

(4) Notwithstanding the provisions of paragraph (d)(3) of this section, for chemical manufacturing process units that are designed and operated as flexible operation units producing a chemical listed in paragraph (b)(1)(ii) of this section, the primary product shall be determined for existing sources based on the expected utilization for the five years following May 12, 1998 and for new sources based on the expected utilization for the first five years after initial start-up.

(i) The predominant use of the flexible operation unit shall be determined according to paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section. If the predominant use is to produce one of the chemicals listed in paragraph (b)(1)(ii) of this section, then the flexible operation unit shall be subject to the provisions of this subpart and subparts G and H of this part.

(ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

* * * * *

(g) * * *

(2) * * *

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (g)(2)(iii)(A) and (g)(2)(iii)(B) of this section, as applicable. * * *

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding May 12, 1998.

* * * * *

(h) * * *

(2) * * *

(iv) If the predominant use of a loading arm or loading hose varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (h)(2)(iv)(A) and (h)(2)(iv)(B) of this section, as applicable. * * *

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding May 12, 1998.

* * * * *

(i) * * *

(2) * * *

(iv) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (i)(2)(iv)(A) and (i)(2)(iv)(B), as applicable. * * *

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this

recently learned that there are questions whether the rule requires owners or operators to develop parameter monitoring ranges appropriate for each product produced by a flexible operation unit or to develop parameter monitoring ranges for operating conditions during production of the primary product of the flexible operation unit. The need for clarification of these aspects of compliance demonstration became apparent as facilities were completing compliance planning and demonstration activities for the April 1997 compliance deadline. This revision will make the rule consistent with the assumptions that EPA used in deriving the cost (including the recordkeeping and reporting burden) estimates used in support of the April 1994 rule. Based on conversations with several industry representatives, EPA believes that today's action is generally consistent with industry's understanding of the rule. Today's clarification is not expected to increase the cost or burden of demonstrating compliance with the HON.

D. Public Comment on the August 22, 1997 Proposal

Three comment letters were received on the August 22, 1997 **Federal Register** document that proposed changes to this rule. All comments received were from industry representatives. While the comments received were supportive of the proposed amendments they expressed concern with the applicability of the rule and clarity of the proposed changes. The EPA has considered these comments and has made one minor change to the final rule, and added additional language to the preamble to clarify the compliance demonstration procedures for flexible operation units. The response to these comments may be obtained over the Internet at http://www.epa.gov/ttn or from the EPA's Technology Transfer Network (TTN). The TTN is a network of electronic bulletin boards operated by the Office of Air Quality Planning and Standards. The service is free, except for the cost of a phone call. Dial (919) 541–5742 for up to a 14,400 bits per second modem. Select TTN Bulletin Board: Clean Air Act Amendments and select menu item Recently Signed Rules. If more information on TTN is needed, contact the systems operator at (919) 541–5384.

III. Administrative

A. Paperwork Reduction Act

The Office of Management and Budget (OMB) has approved the information collection requirements contained in the rule under the Provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060–0282. An Information Collection Request (ICR) document was prepared by the EPA (ICR No. 1414.03) and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington DC 20460 or by calling (202) 260–2740.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15.

Today's action neither adds new respondents nor is it anticipated to increase the number of responses. The increase in the number of effected processing units is less than ½ percent. Since this action does not substantially change the information collection, the ICR has not been revised.

B. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether a regulatory action is "significant" and, therefore, subject to OMB review and the requirements of the Executive Order. The Order defines "significant" regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The HON rule promulgated on April 22, 1994 was considered "significant" under Executive Order 12866, and a regulatory impact analysis was prepared. The amendments issued today apply to one additional process unit at two facilities. These facilities are already well controlled. It is not certain what additional control will be required as a result of this action. Regardless of the final assessment of additional controls at these two facilities, the EPA believes that application of the HON to these facilities will have a negligible impact. The clarification of the compliance demonstration requirements for flexible operation units is believed to be consistent with industry understanding of the rule, and is not believed to create additional impacts. For these reasons, the regulatory action is considered "not significant."

C. Regulatory Flexibility

The EPA has determined it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. The EPA has also determined that this rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small government jurisdictions. See the April 22, 1994 **Federal Register** (59 FR 19449) for the basis for this determination. This amendment to the rule will not have a significant impact on a substantial number of small entities. This rule will apply the requirements of the HON rule to an additional process unit at two facilities and only imposes negligible recordkeeping costs on those facilities. The additional recordkeeping costs are not expected to create a burden for either of the regulated entities. Furthermore, neither of these regulated entities is a small business. The amendment to § 63.103(b)(6) is a clarification of an existing requirement, and this clarification is not expected to increase control requirements or burden of the rule.

D. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a major rule as defined by 5 U.S.C. 804(2).

E. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995 (Unfunded Mandates Act), the EPA must prepare a budgetary impact

and are emitted during the production process. At this time, only one facility in the nation manufactures THBA, and it is not expected that additional facilities will begin producing THBA. The THBA production unit is co-located with other SOCMI production units to which the HON is applicable. In addition, the emissions points and air pollution control measures applied are identical to those encountered in these co-located SOCMI units.

THBA is used in the manufacture of paint additives. The product is similar to other SOCMI products on the list of HON-affected chemicals in that it is an intermediate organic chemical used in the manufacture of other organic chemicals. The production of THBA was not included in the HON initially, because EPA was unaware of THBA's similarities to other SOCMI chemicals. Had EPA been aware of these similarities THBA would have been included in the list of affected HON chemicals in the initial HON rulemaking and subject to the requirements in the HON.

The EPA considers THBA production to be a batch process for purposes of equipment leaks since, the process operates over only a short operating cycle before experiencing significant fouling (plugging) in the reaction system, requiring the system to be shutdown and the equipment cleaned. Due to the frequent shutdown and equipment cleaning cycle, the process is classified as a batch process for purposes of subpart H.

The effect of today's action is twofold. First, it subjects facilities manufacturing THBA to the provisions of 40 CFR part 63, subparts F, G, and H. Although an assessment of the impacts (environmental, cost, economic, or other) associated with this action has not been conducted, the EPA believes that the impact on the THBA production unit will be no more or less severe than those imposed on the other SOCMI production processes already affected. Second, it overrides the need to write a separate regulation for the THBA production source category. Consequently, the THBA production source category is being removed from the list of HAP-emitting source categories published pursuant to Section 112(c) of the Act because it is being subsumed under the HON rule. The EPA does not believe that the development of a separate rule for this source category is justified or would result in a different control level than that required under the HON. Today's action is consistent with the source category schedule, which requires regulation of THBA production (originally listed as butadiene dimers production) by November 1997.

With respect to the issue of whether the addition of the THBA production source category to the population of SOCMI sources regulated by the HON would alter the maximum achievable control technology (MACT) determinations made for the HON rule, it has been concluded that since the emission points and air pollution control measures at the only facility known to manufacture THBA are similar to those at other SOCMI sources, the HON MACT floor determination would be unaffected.

This action establishes compliance dates for THBA production units of 1 year from the date this action is published for subpart H of this part and 3 years from the date this action is published for subparts F and G of this part. The compliance date of three years from the date of this action for compliance with subparts F and G of this part is to allow time for retrofitting of controls and evaluation of control requirements in the one known facility. A facility has one year from today for compliance with subpart H of this part. One year is believed to provide sufficient time to establish the equipment leak monitoring program and recordkeeping system. These time periods are consistent with the compliance times provided for sources originally subject to the HON rule.

B. Addition of Crotonaldehyde Production and Removal of Acetaldol Production

Today's action adds crotonaldehyde production to the chemical production processes subject to the HON and establishes a new compliance date for crotonaldehyde chemical manufacturing process units. In addition, today's action removes acetaldol production processes from the applicability of the HON by removing this chemical from table 1 of subpart F.

In the April 22, 1994 rule, EPA made several changes to the proposed lists of chemical products to correct errors and to remove chemicals no longer commercially produced in the United States. One of the chemical products removed from the list of SOCMI chemicals in the April 1994 notice, based upon the belief that it was no longer commercially produced in the United States, was crotonaldehyde. Since April 1994, EPA has learned that this removal was an error because crotonaldehyde is produced by at least one facility in the United States. The EPA has also learned that acetaldol, which was retained on table 1 of subpart F in the April 1994 rule, is an unstable intermediate which is used to produce either crotonaldehyde or 1,3-butylene glycol, and is therefore not itself a product appropriate for inclusion on table 1 of subpart F. Based on the January 17, 1997 amendments to the HON (62 FR 2721), EPA believes that acetaldol production operations are more appropriately considered unit operations part of crotonaldehyde or 1,3-butylene glycol chemical manufacturing process units. Therefore, the EPA is revising table 1 of subpart F by removing acetaldol. Crotonaldehyde production is being added to subpart F as a regulated process. No action is needed for 1,3-butylene glycol because that chemical is already listed in table 1 of subpart F.

This action creates a new compliance date for crotonaldehyde chemical production process units because of the confusion caused by listing a nonisolated intermediate chemical product instead of the correct final product. The new compliance date is 3 years from today for compliance with subparts F and G of this part to allow time for retrofitting of controls and evaluation of control requirements in the one known facility. A compliance date of 1 year from today is being used for compliance with subpart H of this part. One year is believed to provide sufficient time to establish the equipment leak monitoring program and recordkeeping system. These time periods are consistent with the compliance times provided for sources originally subject to the HON rule.

C. Clarification of Compliance Demonstration Requirements for Flexible Operation Units

In today's action, EPA is adding a new paragraph (b)(6) to § 63.103 of subpart F to clarify the compliance demonstration requirements for flexible operation units. This amendment revises the rule to clarify that performance tests and monitoring parameter ranges are to be based on operating conditions present during production of the primary product. The April 1994 rule was not clear on this point due to a drafting oversight. This change is being added because some owners and operators have expressed concerns that the rule could be interpreted as requiring installation of additional controls for periods when the flexible operation unit is producing a product other than the primary product. It is not the EPA's intent that the rule be interpreted in this manner. Therefore, for the purposes of compliance with this rule, additional controls are not required when producing products other than the primary product. The EPA has also

18. Part 804 is amended by revising the heading to read as set forth above.

19. Section 804.1 is amended by revising paragraph (a) to read as follows:

§ 804.1 Scope.

(a) FDA is requiring distributors of cigarettes or smokeless tobacco to report deaths, serious illnesses, and serious injuries that are attributed to contamination of a cigarette or smokeless tobacco product. Distributors of cigarettes or smokeless tobacco are also required to submit a report to FDA annually certifying the number of medical device reports filed during the preceding year, or that no reports were filed. These reports enable FDA to protect the public health by helping to ensure that these products are not adulterated or misbranded and are otherwise safe and effective for their intended use. In addition, distributors of cigarettes or smokeless tobacco are required to establish and maintain complaint files or incident files as described in § 804.35, and to permit any authorized FDA employee at all reasonable times to have access to, and to copy and verify, the records contained in this file. This part supplements, and does not supersede, other provisions of this subchapter, including the provisions of part 820 of this chapter.

* * * * *

20. Section 804.3 is amended by revising paragraph (d), and in paragraphs (m)(1) and (m)(2) by adding the phrase "related to the contamination of cigarettes or smokeless tobacco" after the word "event" to read as follows:

§ 804.3 Definitions.

* * * * *

(d) *Distributor* means, for the purpose of this part, any person who furthers the distribution of cigarettes or smokeless tobacco, whether domestic or imported, at any point from the original place of manufacture to the person who sells or distributes the product to individuals for personal consumption, but who does not repackage or otherwise change the container, wrapper, or labeling of the product package. Common carriers are not considered distributors for the purposes of this part.

* * * * *

§ 804.25 [Amended]

21. Section 804.25 *Reports by distributors* is amended in paragraph (a)(1) by removing the words "a device" and adding in their place the phrase "contamination of a cigarette or smokeless tobacco product"; in paragraph (a)(2) by removing the phrase "one of its marketed devices" and adding in its place the phrase "contamination of one of its cigarette or smokeless tobacco products"; and by removing paragraph (c).

Dated: May 1, 1998.

William B. Schultz,

Deputy Commissioner for Policy.

[FR Doc. 98–12614 Filed 5–11–98; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 1240

[Docket No. 97P–0418]

Revocation of Lather Brushes Regulation

AGENCY: Food and Drug Administration, HHS.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is revoking its regulation pertaining to the treatment, sterilization, handling, storage, marking, and inspection of lather brushes. FDA is revoking this regulation because the regulation is no longer necessary to protect the public health.

FOR FURTHER INFORMATION CONTACT: Philip L. Chao, Policy Development and Coordination Staff (HF–23), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301–827–3380.

DATES: This final rule is effective June 11, 1998.

SUPPLEMENTARY INFORMATION:

I. Background

In the **Federal Register** of October 20, 1997 (62 FR 54398), FDA proposed to revoke a regulation pertaining to the treatment, sterilization, handling, storage, marking, and inspection of lather brushes. The preamble to the proposal explained that the lather brush regulation was originally published in 1949 by the Federal Security Agency and was intended to prevent cases of cutaneous anthrax through lather brushes made from animal hair or bristles. A Government reorganization transferred the Federal Security Agency's functions to the then-Department of Health, Education, and Welfare (now known as the Department of Health and Human Services), and responsibility for the rule was later assigned, in 1975, to FDA. The rule was codified at § 1240.70 (21 CFR 1240.70).

FDA proposed to revoke the regulation because it was unaware of any reliance on the lather brush requirements or of any current concerns associated with lather brushes and because the regulation was no longer necessary to protect the public health. The proposal also noted that the then-Center for Disease Control (now the Centers for Disease Control and Prevention) revoked a similar lather brush regulation in 1985 on the grounds that no case of cutaneous anthrax in the United States had been associated with lather brushes since 1930.

FDA received no comments on the proposal. Consequently, this final rule revokes § 1240.70.

II. Analysis of Impacts

FDA has examined the impacts of the final rule under Executive Order 12866 and the Regulatory Flexibility Act (5 U.S.C. 601–612). Executive Order 12866 directs agencies to assess all costs and benefits of available regulatory alternatives and, when regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity). The agency believes that this final rule is consistent with the regulatory philosophy and principles identified in the Executive Order. In addition, the final rule is not a significant regulatory action as defined by the Executive Order and so is not subject to review under the Executive Order.

The Regulatory Flexibility Act requires agencies to analyze regulatory options that would minimize any significant impact of a rule on small entities. Because the final rule eliminates certain manufacturing requirements for lather brushes, the agency certifies that the final rule will not have a significant economic impact on a substantial number of small entities. Therefore, under the Regulatory Flexibility Act, no further analysis is required.

III. Environmental Impact

The agency has determined under 21 CFR 25.30(h) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

IV. Paperwork Reduction Act of 1995

This final rule contains no collections of information. Therefore, clearance by the Office of Management and Budget under the Paperwork Reduction Act of 1995 is not required.

List of Subjects in 21 CFR Part 1240

Communicable diseases, Public health, Travel restrictions, Water supply.

Therefore, under the Public Health Service Act and under the authority delegated to the Commissioner of Food and Drugs, 21 CFR part 1240 is amended as follows:

PART 1240—CONTROL OF COMMUNICABLE DISEASES

1. The authority citation for part 1240 continues to read as follows:

Authority: 42 U.S.C. 216, 243, 264, 271.

§ 1240.70 [Removed]

2. Section 1240.70 *Lather brushes* is removed.

Dated: May 4, 1998.

William K. Hubbard,

Associate Commissioner for Policy Coordination.

[FR Doc. 98–12450 Filed 5–11–98; 8:45 am]

BILLING CODE 4160–01–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[AD–FRL–6011–6]

RIN 2060–AC19

National Emission Standards for Hazardous Air Pollutants for Source Categories; Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule: Amendments.

SUMMARY: This action promulgates final amendments to the National Emission Standards for Hazardous Air Pollutants for Source Categories; Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) by adding tetrahydrobenzaldehyde (THBA) and crotonaldehyde to, and removing acetaldol from, the list of chemical production processes. The amendment also establishes a separate compliance date of 3 years from final action for subparts F and G of part 63 and 1 year from final action for subpart H of part 63 for the THBA and crotonaldehyde production processes. The EPA is also making a change to clarify compliance demonstration requirements for flexible operation units.

This action implements section 112(d) of the Clean Air Act as amended in 1990 (the Act), which requires the Administrator to regulate emissions of hazardous air pollutants (HAP) listed in section 112(b) of the Act. The intended effect of this rule is to protect the public by requiring new and existing major sources to control emissions of HAP to the level reflecting application of the maximum achievable control technology. This action also amends the initial list of source categories of HAP required by section 112(c) of the Act by removing THBA production from the list of categories of major sources.

EFFECTIVE DATE: May 12, 1998.

FOR FURTHER INFORMATION CONTACT: For information concerning this action contact Mr. John Schaefer at (919) 541–0296, Organic Chemicals Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION:

I. Regulated Entities and Background Information

A. Regulated Entities

The regulated category and entities affected by this action include:

Category	Regulated entities
Industry ..	Facilities that produce tetrahydrobenzaldehyde; facilities that produce crotonaldehyde. Synthetic organic chemical manufacturing industry (SOCMI) units, e.g., producers of benzene, toluene, or any other chemical listed in Table 1 of 40 CFR part 63, subpart F.

This table is not intended to be exhaustive but, rather, provides a guide for readers regarding entities likely to be interested in the revisions to the regulation affected by this action. Entities potentially regulated by the HON are those which produce as primary intended products any of the chemicals listed in table 1 of 40 CFR part 63, subpart F or facilities producing THBA or crotonaldehyde and that are located at facilities that are major sources as defined in section 112 of the Clean Air Act (CAA). To determine whether your facility is regulated by this action, you should carefully examine all of the applicability criteria in 40 CFR 63.100. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

With today's action, EPA is making production of THBA and crotonaldehyde subject to subparts F, G, and H of 40 CFR Part 63. Subparts F, G, and H of 40 CFR Part 63 establish National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Synthetic Organic Chemical Manufacturing Industry (SOCMI) (57 FR 62607). This rule is commonly referred to as the hazardous organic NESHAP or the HON. The HON rule applies to SOCMI facilities located at major sources and affects approximately 310 facilities nationwide. These SOCMI facilities include those that produce one or more of the synthetic organic chemicals listed in Table 1 of Subpart F and that either (1) use an organic HAP as a reactant or (2) produce an organic HAP in the process. Emission points within these facilities affected by the rule are process vents, storage vessels, transfer operations, equipment leaks, and wastewater collection systems. Processes producing THBA were not included on the list of SOCMI processes to be regulated under the HON. Crotonaldehyde production was removed from the list of SOCMI processes to be regulated by the HON when the rule was issued in April 1994. Crotonaldehyde production was deleted because available information indicated that this chemical was no longer produced in the United States. Because EPA has since learned that crotonaldehyde is still produced in the United States, in today's action EPA is adding crotonaldehyde production to the HON.

II. Summary of Changes to Rule

A. Addition of THBA Production

Tetrahydrobenzaldehyde production was included as a source of HAP emissions under the source category of butadiene dimers production on the initial list of source categories selected for regulation under Section 112(c) of the Act published on July 16, 1992 (57 FR 31576) and was scheduled for control by November 1997 on the section 112(e) source category schedule (58 FR 63941). Although the initial source category list clearly identified THBA production as being included in the butadiene dimers production source category, the butadiene dimers name was a misnomer. Consequently, the butadiene dimers production source category was changed to tetrahydrobenzaldehyde production by a source category list maintenance action finalized on June 4, 1996 (61 FR 28197). Today's action will add THBA production to the list of HON-affected chemicals.

THBA is produced by reacting 1,3-butadiene and acrolein together. Both 1,3-butadiene and acrolein are HAPs

NOTICE OF PUBLIC HEARING AND PUBLIC COMMENT PERIOD

On Tuesday, July 21, 1998 beginning at 6:00 p.m., the West Virginia Division of Environmental Protection, Office of Air Quality will hold a public hearing on the following legislative rules:

45CSR8	"Ambient Air Quality Standards for Sulfur Oxides and Particulate Matter"
45CSR9	"Rules Pertaining to Ambient Air Quality Standards for Carbon Monoxide and Ozone"
45CSR16	"Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60"
45CSR24	"To Prevent and Control Emissions from Hospital/Medical/Infectious Waste Incinerators"
45CSR25	"To Prevent and Control Air Pollution from Hazardous Waste Treatment, Storage, or Disposal Facilities"
45CSR33	"Acid Rain Provisions and Permits"
45CSR34	"Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"
45CSR36	"Requirements for Determining Conformity of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or The Federal Transit Laws, to Applicable Air Quality Implementation Plans (Transportation Conformity)"

Upon authorization and promulgation of revisions to 45CSR8, 45CSR9, and 45CSR36, the Office of Air Quality will seek federal approval of the rule change by the U.S. Environmental Protection Agency for inclusion in the State Implementation Plan for the Federal Clean Air Act.

Upon authorization and promulgation of 45CSR24, the rule will be submitted to the U.S. Environmental Protection Agency as part of the State Plan for Municipal Solid Waste (MSW) Landfills. Upon authorization and promulgation of revisions to 45CSR25, the rule will be submitted to the U. S. Environmental Protection Agency as part of the State Hazardous Waste Management Program.

Upon authorization and promulgation of revisions to 45CSR16, 45CSR33 and 45CSR34, the Office of Air Quality will seek federal delegation of authority from the U.S. Environmental

Protection Agency to implement and enforce the revised standards.

The hearing will be held in the Office of Air Quality's Conference Room located at 1558 Washington Street East, Charleston, West Virginia. The hearing is open to the public. Written and oral comments by the public will be accepted during the hearing on July 21st and will be made a part of the rulemaking record. The public may also submit written comments by mail or other delivery to the Office of Air Quality through July 21st for inclusion in the rulemaking record at the following address:

John H. Johnston, Chief
Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

Copies of the proposed legislative rules will be available for public review on or before June 18, 1998 at the Office of Air Quality's Charleston office at the above address.

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/18	LEGF	DM	PUBLIC HEARING 543351001	L409965	1X1038 10.38	6.19	64.~~26~~ 25	128.~~52~~ 51
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45CSR16 "Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60"

45CSR24 "To Prevent and Control Emissions from Hospital/ Medical/ Infectious Waste Incinerators"

45CSR25 "To Prevent and Control Air Pollution from Hazardous Waste Treatment, Storage, or Disposal Facilities"

45CSR33 "Acid Rain Provisions and Permits"

45CSR34 "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

45CSR36 "Requirements for Determining Conformity of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or The Federal Transit Laws, to Applicable Air Quality Implementation Plans (Transportation Conformity)"

Upon authorization and promulgation of revisions to 45CSR8, 45CSR9, and 45CSR36, the Office of Air Quality will seek federal approval of the rule change by the U.S. Environmental Protection Agency for inclusion in the State Implementation Plan for the Federal Clean Air Act.

Upon authorization and promulgation of 45CSR24, the rule will be submitted to the U.S. Environmental Protection Agency as part of the State Plan for Municipal Solid Waste (MSW) Landfills. Upon authorization and promulgation of revisions of 45CSR25, the rule will be submitted to the U.S. Environmental Protection Agency as part of the State Hazardous Waste Management Program.

Upon authorization and promulgation of revisions to 45CSR16, 45CSR33 and 45CSR34, the Office of Air Quality will seek federal delegation of authority from the U.S. Environmental Protection Agency to implement and enforce the revised standards.

The hearing will be held in the Office of Air Quality's Conference Room located at 1558 Washington Street East, Charleston, West Virginia. The hearing is open to the public. Written and oral comments by the public will be accepted during the hearing on July 21st and will be made a part of the rulemaking record. The public may also submit written comment by mail or other delivery to the Office of Air Quality through July 21st for inclusion in the rulemaking record at the following address:

John H. Johnston, Chief
Office of Air Quality
1558 Washington St., E.
Charleston, WV 25311-2599

Copies of the proposed legislative rules will be available for public review on or before June 18, 1998 at the Office of Air Quality's Charleston office at the above address.

(409965)

July 21, 1998

DEP Division of Environmental Protection

Public Hearing on
45CSR8, 45CSR9, 45CSR 14, 45 CSR 24, 45CSR25,
45CSR 33, 45CSR 34, 45CSR 36

Sign-In

	Name	Address	I would like to comment YES	NO
1.	James D. Elliott	Robinson & McElwee		✓
2.	Karen Watson	OAQ - 1615 Washington		✓
3.	Lucy Pontiveros	OAQ - 1615 Washington St. E		✓
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				



WEST VIRGINIA REGISTER

Published by Ken Hechler, Secretary of State

Volume XV

Issue 25

June 18, 1998

Pages 1030-1077

A Weekly Publication

Administrative Law Division

Judy Cooper
Director

Lisa Blake
Leah Powell
Administrative Assistants

Secretary of State
Administrative Law Division
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Charleston, WV 25305-0770

(304)558-6000

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VI. Legislative Interims

VII. Orders

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X. Attorney General Opinions

XI. Other Documents or Information Filed

XII. Publication Deadlines and Publication Dates

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

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JUL 10 10 33 AM '98

OFFICE OF SECRETARY OF STATE

FORM #1

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 8

TITLE OF RULE BEING AMENDED: "Ambient Air Quality Standards for Sulfur Oxides and Particulate Matter"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

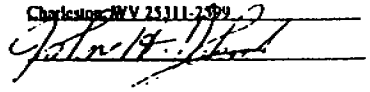
COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
Office Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

ATTACH A BRIEF SUMMARY OF YOUR PROPOSAL



WEST VIRGINIA
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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 9

TITLE OF RULE BEING AMENDED: "Rules Pertaining to Ambient Air Quality Standards for Carbon Monoxide and Ozone"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

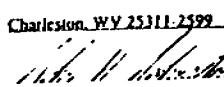
LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 16

TITLE OF RULE BEING AMENDED: "Standards of Performance for New Stationary Sources"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
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Charleston, WV 25311-2599

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13:40

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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES ___ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: ___

TITLE OF RULE BEING AMENDED: ___

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 24

TITLE OF RULE BEING PROPOSED: "To Prevent and Control Emissions From Hospital/Medical/Infectious Waste Incinerators"

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
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Charleston, WV 25311-2599

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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ; CITE AUTHORITY W. Va. Code §§22-5-1et seq. & §§22-18-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 25

TITLE OF RULE BEING AMENDED: "To Prevent and Control Air Pollution from Hazardous Waste Treatment, Storage, or Disposal Facilities"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED:

TITLE OF RULE BEING PROPOSED:

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL , WRITTEN , BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
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1558 Washington Street East
Charleston, WV 25311-2599

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The issues to be heard shall be limited to the proposed rule.

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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 34

TITLE OF RULE BEING AMENDED: "Emission Standards for Hazardous Air Pollutants Pursuant to 40 CFR Part 63"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED:

TITLE OF RULE BEING PROPOSED:

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL , WRITTEN , BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
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1558 Washington Street East
Charleston, WV 25311-2599

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ADMINISTRATIVE LAW DIVISION

FORM #1

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'98 JUL 31 AM 11 34

OFFICE SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 36

TITLE OF RULE BEING AMENDED: "Requirements for Determining Conformity of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or The Federal Transit Laws, to Applicable Air Quality Implementation Plans (Transportation Conformity)"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ___, WRITTEN ___, BOTH X

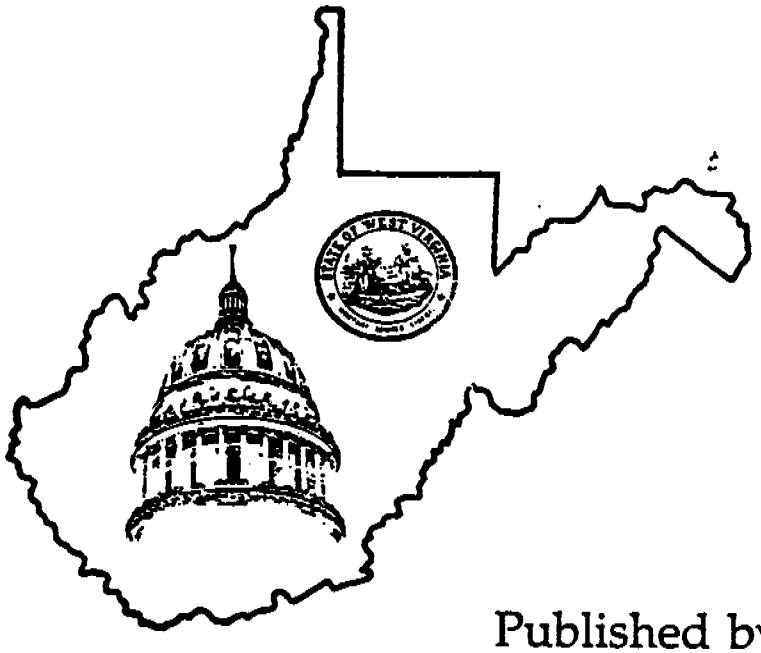
COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
Office Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

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1.50 w/o attachment
6.50 w/ attachment



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Published by Ken Hechler, Secretary of State

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Issue 26

June 26, 1998

Pages 1078-1127

A Weekly Publication

Administrative Law Division

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WEST VIRGINIA
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'98 JUL 31 AM 8:38
OFFICE OF SECRETARY OF STATE

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AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

RULE TYPE: Legislative ;CITE AUTHORITY W. Va. Code §§22-5-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES X NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 33

TITLE OF RULE BEING AMENDED: "Acid Rain Provisions and Permits"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: ____

TITLE OF RULE BEING PROPOSED: ____

DATE OF PUBLIC HEARING: July 21, 1998 TIME: 6:00 p.m.

LOCATION OF PUBLIC HEARING: Office of Air Quality
1558 Washington Street East
Charleston, WV 25311-2599

COMMENTS LIMITED TO: ORAL ____, WRITTEN ____, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: John H. Johnston, Chief
Office Air Quality
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Charleston, WV 25311-2599

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The issues to be heard shall be limited to the proposed rule.

ATTACH A BRIEF SUMMARY OF YOUR PROPOSAL.

LEGISLATIVE

CECIL H. UNDERWOOD
GOVERNOR

DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

John H. Johnston, Chief

MICHAEL P. MIANO
DIRECTOR

August 4, 1998

FILED
AUG 4 2 36 PM '98
OFFICE OF WEST VIRGINIA SECRETARY OF STATE

Honorable Mike Ross, Co-Chair
Legislative Rule-Making Review Committee
Room MB49 - State Capitol
Charleston, WV 25305

Honorable Mark Hunt, Co-Chair
Ledgsilative Rule-Making Review Committee
Room MB49-State Capitol
Charleston, WV 25305

RE: 45CSR34--"Emissions Standards for Hazardous Air Pollutants Pusuant to 40 CFR Part 63"

Dear Gentlemen:

The Office of Air Quality ("OAQ") recently filed an agency-approved rule relating to the above-referenced rule with the Secretary of State and the Legislative Rule-Making Review Committee ("LRMRC"). As the OAQ explained in the Briefing Document which accompanied the filing, the Environmental Protection Advisory Council met on July 22, 1998, and recommended that a clarification be made to 45CSR34 (a copy of the minutes of the Council's meeting are attached for your information).

The Council's recommendations were not received within the 30-day public comment period, and were consequently not addressed by the OAQ prior to its filing the agency-approved rule with the LRMRC. The OAQ has considered the Council's recommendations and has revised the rule accordingly. The agency's proposed revision to section 4.1.b. is included herein for the Committee's consideration.

If you or the Committee members have any questions regarding this matter, please contact Karen G. Watson at (304) 558-1213.

Sincerely,

Karen G. Watson

Karen G. Watson, Attorney

cc: Committee Members
Debra A. Graham, Counsel
Attachments

TITLE 45
LEGISLATIVE RULE
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

SERIES 34
EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS PURSUANT TO 40 CAR PART 63

§45-34-1. General.

1.1. Scope. - This rule establishes general provisions for national emission standards for hazardous air pollutants (NESHAPS) and other regulatory requirements pursuant to section 112 of the federal Clean Air Act as amended in 1990 (CAA). This rule codifies general procedures and criteria to implement emission standards for stationary sources that emit (or have the potential to emit) one or more of the substances listed as hazardous air pollutants (HAP) in or pursuant to section 112(b) of the CAA. It is the intent of the Director to adopt these standards by reference. It is also the intent of the Director to adopt associated reference methods, performance specifications and other test methods which are appended to these standards.

1.2. Authority. - W.Va. Code §§22-5-1 et seq.

1.3. Filing Date. - ~~May 1, 1998~~

1.4. Effective Date. - ~~May 1, 1998~~

1.5. Incorporation by Reference - Federal Counterpart Regulation. The Director has determined that a federal counterpart regulation exists, and in accordance with the Director's recommendation, with limited exception, this rule incorporates by reference, 40 CFR Part 63, effective July 1, 1997, as amended by the Federal Register through June 1, 199~~7~~8.

§45-34-2. Requirements.

2.1. After the effective date of the state permit program under Title V of the CAA, no person may modify a major source of hazardous air pollutants, unless the Director determines that the maximum achievable control technology emission limitation under this rule for existing sources will be met.

2.2. After the effective date of the state permit program under Title V of the CAA, no person may construct or reconstruct any major source of hazardous air pollutants, unless the Director

determines that the maximum achievable control technology emission limitation under this rule for new sources will be met.

2.3. After the effective date of the state permit program under Title V of the CAA, the Director shall determine and apply case-by-case maximum achievable control technology standards to existing sources categorized by the Administrator pursuant to Section 112(c)(1) of the CAA for which the Administrator has not promulgated emission standards in accordance with Section 112(d) and 112(e) of the CAA.

2.4. Prior to constructing, reconstructing or modifying any facility subject to this rule, the owner or operator shall obtain a permit in accordance with the applicable requirements of 45CSR13, 45CSR14, 45CSR30 and this rule.

§45-34-3. Definitions.

3.1. "Administrator" means the Administrator of the United States Environmental Protection Agency or his or her designated representative.

3.2. "Director" means the Director of the West Virginia Division of Environmental Protection or such other person to whom the Director has delegated authority or duties pursuant to W. Va. Code §22-1-6 or §22-1-8.

3.3. "Hazardous air pollutant" means any air pollutant listed pursuant to §112(b) of the CAA as of June 1, 1997~~8~~.

§45-34-4. Adoption of Standards.

4.1. The Director hereby adopts and incorporates by reference the provisions of 40 CFR Part 63 including any reference methods, performance specifications and other test methods which are appended to such standards and contained in 40 CFR Part 63 ~~as in effect on~~ effective July 1, 1997, as amended by the Federal Register through June 1, 1997~~8~~, for the purposes of implementing a program for national emission standards for hazardous air pollutants for source categories, except as follows:

4.1.a. Section 63.15 is amended to provide that information shall be available to the public in accordance with W.Va. Code §§22-5-1 et seq., §§29B-1-1 et seq., and 45CSR31.

4.1.b. Any provision related to section 112(r) of the CAA, notwithstanding any requirements of 45CSR30.

§45-34-5. Director.

5.1. Any and all references in 40 CFR Part 63 to the "Administrator" are amended to be the "Director" except as follows:

5.1.a. where the federal regulations specifically provide that the Administrator shall retain authority and not transfer such authority to the State.

5.1.b. where provisions occur which refer to:

b.1. alternate means of emission limitations

b.2. alternate control technologies

b.3. innovative technology waivers

b.4. alternate test methods

b.5. alternate monitoring methods

b.6. waivers/adjustments to recordkeeping and reporting

b.7. emissions averaging

b.8. applicability determinations

5.1.c. where the context of the regulation clearly requires otherwise.

§45-34-6. Permits.

6.1. Nothing contained in this rule shall be construed or inferred to mean that permit requirements in accordance with applicable rules shall in any way be limited or inapplicable.

§45-34-7. Inconsistency Between Rules.

7.1. In the event of any inconsistency between this rule and any other existing rule of the West Virginia Division of Environmental Protection, such inconsistency shall be resolved by the determination of the Director and such determination shall be based upon the application of the more stringent provision, term, condition, method, rule or regulation.

MINUTES

DIVISION OF ENVIRONMENTAL PROTECTION ADVISORY COUNCIL

July 22, 1998, DIRECTOR'S CONFERENCE ROOM, NITRO HEADQUARTERS

The eleventh meeting of the DEP Advisory Council was held Wednesday, July 22, 1998, in the Director's Conference Room, Nitro Headquarters' Offices. The meeting was called to order at 1:00 p.m. by Chairman Mike Miano.

ATTENDING:

Advisory Council Members:

Michael P. Miano, Chairman
Jacqueline Hallinan
Larry Harris
William Raney
Rick Roberts
William Samples

Environmental Protection:

John Ailes	Jennifer Pauer
John Benedict	Pete Pitsenbarger
Dick Cooke	Ken Politan
Mike Dorsey	Cap Smith
Andy Gallagher	Barb Taylor
Randy Huffman	Karen Watson
Pat Park	Mike Zeto

1) Introduction of A. V. Gallagher, DEP's Chief Communications Officer.

Chairman Miano introduced DEP's new Chief Communications Officer, A. V. Gallagher. Council Members welcomed Mr. Gallagher and wished him well in his new job.

2) Review and Approval of Minutes of April 30, 1998.

The minutes of the April 30 meeting were approved with the correction of two typos. Mr. Roberts brought to everyone's attention the discussion in the April 30 minutes of AML funding issues in the last meeting, and the Council's desire to send letters to West Virginia's Congressional delegation to identify West Virginia's share of the AML funds that need to be

released by the US Congress. Separate letters would go to West Virginia's legislative leadership informing them of the problems created by not having the AML funds available, with a copy of the letters sent to the Congressional delegation attached to them.

Randy Huffman asked if the Council members would like to sign each letter individually. They each expressed their desire to do so. Pat Park, AML, distributed a copy of the draft letters to Council for their review. After several minutes of discussion, it was decided the draft letters would be edited and made available to the Council members for their signature before the end of the meeting.

Mr. Miano said that Pete Pitsenbarger would like a few minutes of the Council's time before they continued with the agenda.

Mr. Pitsenbarger informed the Council of his retirement plans for the end of August. He said he would like to express his heartfelt thanks to the Council for their letter of appreciation they had sent him thanking him for his many years of service to the State of West Virginia. Mr. Pitsenbarger said his years in state government had been a wonderful opportunity, and he will miss both the work and the people.

3) Review of Proposed DEP Rules in Accordance with WV Code §22-1-3(c).

Mr. Miano asked if there were any other issues to be discussed before continuing with the Agenda and the review of DEP proposed rules for the 1999 session.

Mr. Roberts said he would like to express his concern with the approach DEP has taken in involving the Council members in the rulemaking process -- not only this year, but in the past. He said the rules are not sent to the Council members until the last minute and they are not given adequate time to review and comment on them.

It was pointed out that the law [22-1-1(c)] specifically requires the Council to be consulted prior to the proposal of any new rule.

Mr. Raney said he would like to go on record wholeheartedly in agreement with the concerns of Mr. Roberts. He said he has great concerns with giving advice or recommendations to the Director on development of rules (or amendments to rules) the Council members were not involved in before they were filed with the Secretary of State's Office for Public Hearing and Comments. He said he believes there definitely needs to be improvement in this process in the future.

A discussion was then held on possible ways to bring the Council into the rulemaking process in an earlier stage of rule development. Several DEP staff members expressed their frustrations with the rulemaking process, and gave one example as the short period of time between the signature of bills by the Governor and the early filing date of the rules with the

Legislative Rulemaking Review Committee. Another example that was given was turnaround time with federal agencies, i.e., EPA and OSM, which are also involved in the process.

After several minutes of discussion, Mr. Huffman stated, with the Chairman's approval, that he would put together a committee to discuss the Council's concerns and get back to the Council with their recommendations by the first of September.

Mr. Miano also expressed his desire to improve the involvement of the Council in the rulemaking process, and assured the Council that everything possible would be done in the future to comply with the Council's recommendations.

[It should be noted that at this time Ms. Hallinan left the Advisory Council Meeting because of a previously-scheduled commitment].

Continuing with the agenda, Mr. Miano said that staff would be available from each program office to give a brief description of the proposed new rules or rule amendments and to answer any questions the Council members might have. If a question should come up that couldn't be answered during the meeting, we would make note of it and get back with an answer to the Council as soon as possible. The first rule on the agenda is 60CSR4, filed under the Director's Office.

60CSR4 -"AWARDING OF WEST VIRGINIA STREAM PARTNERS PROGRAM GRANTS RULE"

Jennifer Pauer, AML, said 60CSR4 is a new rule that is being proposed by the West Virginia Stream Partners Program to provide requirements and guidance concerning the awarding of grants to broad-based community organizations for watershed improvement projects. Ms. Pauer stated that the program is a joint effort of DEP, Forestry, Natural Resources, and the West Virginia Soil Conservation Agency.

A brief discussion was held concerning the source of the funding, availability of the funds, guidelines for criteria, and possible additional funding. Mr. Samples asked if there could also be additional funding sources, for example contributions from supplemental environmental projects used to offset proposed penalties. Ms. Pauer stated that as the rule now stands, it's only purpose is to distribute the funds, but she would check into the law and let the Council know if language could be added to also implement provisions for additional funding from penalty collections or other sources. Mr. Raney moved to recommend to the Chairman (in his capacity as Director of DEP) the filing of 60CSR4 with the condition that Mr. Samples' recommendation be considered. The motion was seconded and passed unanimously.

The following Air Quality rules were discussed by Karen Watson, OAQ, with assistance from John Benedict, also from the OAQ office:

45CSR33 - "ACID RAIN PROVISIONS AND PERMITS"

45CSR25 - "TO PREVENT AND CONTROL AIR POLLUTION FROM HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES"

45CSR34 - "EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS PURSUANT TO 40 CFR PART 63"

45CSR16 - "STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES PURSUANT TO 40 CFR PART 60"

45CSR24 - "TO PREVENT AND CONTROL EMISSIONS FROM HOSPITAL/MEDICAL/ INFECTIOUS WASTE INCINERATORS"

45CSR36 - "CONFORMITY TO STATE OR FEDERAL IMPLEMENTATION PLANS OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS DEVELOPED, FUNDED OR APPROVED UNDER TITLE 23 U.S.C. TO THE FEDERAL TRANSIT LAWS, TO APPLICABLE AIR QUALITY IMPLEMENTATION PLANS (TRANSPORTATION CONFORMITY)"

45CSR8 - "AMBIENT AIR QUALITY STANDARDS FOR SULFUR OXIDES AND PARTICULATE MATTER"

45CSR9 - " RULES PERTAINING TO AMBIENT AIR QUALITY STANDARDS FOR CARBON MONOXIDE AND OZONE"

Ms. Watson gave the Council a brief explanation of the proposed OAQ rules. She explained that seven rules (45CSR33, 25, 34, 16, 36, 8, and 9) were being amended to conform to federal regulations, and 45CSR24 is a proposed new rule to adopt federal New Source Performance Standards for new and existing hospital/medical/infectious waste incinerators. This rule also incorporates by reference the federal standards, with limited exception.

Mr. Raney said he had always questioned the validity of the Appendix B Fiscal Note that is attached to each rule that is filed; in particular the section that relates to the effect of the proposed rule which usually contains all zeros.

John Benedict explained that is a question that has come up several times in the past, and the agency has always taken the position that the numbers are reflective of the cost to the state of implementing the new rule or the proposed amendments to an existing rule.

After a brief question and answer session of the OAQ rules, Mr. Raney moved that recommendation be made to the Director that all eight (8) rules be filed, as proposed, with the exception that 45CSR34, subdivision 4.1.b, be revised to clarify that 45CSR30 includes certain requirements relating to Section 112(r) of the Clean Air Act. The motion was seconded and passed unanimously by the Council.

38CSR2 - "SURFACE MINING AND RECLAMATION RULE"

John Ailes, Chief of OMR, said the amendments to this year's submission of the Surface Mining and Reclamation rule were few in number. Two new definitions were added,

"mountaintop mining operation" and "area mining operation," and only minor cleanup to correct typographical errors and update and clarify other sections within the rule. Mr. Raney moved recommendation be made to the Chairman that the rule be filed as proposed. The motion was seconded and passed unanimously by the Council.

Mike Dorsey and Dick Cooke from the Office of Waste Management described the following Waste Management rules:

33CSR20 - "HAZARDOUS WASTE MANAGEMENT RULE"

33CSR1 - "SOLID WASTE MANAGEMENT RULE"

33CSR2 - "SEWAGE SLUDGE MANAGEMENT RULE"

Mike Dorsey explained the amendments to 33CSR20 - Hazardous Waste Management Rule. Along with other federally-required amendments to this rule, Section 11 contains a major rewrite to conform with the federal requirements of 40 CFR Part 124.

Mr. Samples asked why it takes up to 120 days to receive approval from the state to exclude a waste at a particular generating facility when EPA has already approved the petition - could the time be changed from 120 days to 60 days?

Cap Smith, Chief, OWM, said the time of 60 to 120 days is just a general number. He stated that he didn't see a problem with changing the time from 120 days to 60 days. He said it rarely takes anywhere close to that time to approve or deny the petition - it is usually taken care of in a matter of days.

There was some discussion as to whether this amendment should be proposed in this legislative session. The Council decided to wait until the rule is modified and filed in the 2000 Legislative Session to propose the amendment.

Dick Cooke, OWM, briefed the Council on 33CSR1. He said the revision is necessary to ensure consistency between the WV Code and 33CSR1. The emergency rule will establish criteria in determining a commercial solid waste facility's monthly tonnage limits, as required by Chapter 22, Article 15, as amended by Senate Bill No. 178.

Mike Zeto, Environmental Enforcement Office, then discussed 33CSR2 and explained the proposed emergency rule is necessary to update the Sewage Sludge Management rule to comply with mandates of Senate Bill 178. The revisions and inclusions are necessary to ensure consistency between the WV Code and 33CSR2. The emergency rule will also impose new requirements relating to the management of sewage sludge as required by Chapter 22, Article 15, as amended by Senate Bill 178, specifically as it relates to the control of off-site odors, and the protection of waters of the state.

After discussion was completed on the Waste Management rules, Mr. Raney moved to recommend that the Chairman file the Waste rules as proposed. The motion was seconded and passed unanimously.

The following Office of Water Resources rules were reviewed by Barb Taylor and Ken Politan.

47CSR31 - " STATE WATER POLLUTION CONTROL REVOLVING FUND"

47CSR33 - "STATE CONSTRUCTION GRANTS PROGRAM RULE"

47CSR3 - " POLLUTION PREVENTION AND COMPLIANCE ASSISTANCE"

47CSR4 - "STATE CERTIFICATION OF ACTIVITIES REQUIRING NATIONWIDE PERMITS NO. 21 AND NO. 26"

Barb Taylor, Chief, OWR, explained the amendments contained in 47CSR31, 33, and 3. She said 47CSR31 is being amended to comply with the latest revisions of the Clean Water Act and current design practices; 47CSR33 is a proposed new rule which allows DEP to make grants to communities to provide adequate wastewater collection and/or treatment services; and 47CSR3 is a new proposed rule to implement the provisions of HB 4693 passed during the 1998 Session to promote pollution prevention by encouraging reduction or elimination of pollutants at the source through process modification, material substitution, in-process recycling, reduction of raw material use or other source reduction opportunities.

Mr. Roberts asked if the proposed amendments to prohibit the use of closed-vessel ultraviolet disinfection and inverted siphons in "Appendix B" under "Design Standards for Collection Systems and Treatment Works" is one recommended by EPA or by the state.

Ms. Taylor replied that she would need to check with Bob Coontz in Water Resources' Construction Assistance Office who drafted the proposed rule amendments, and have Mr. Coontz get back with Mr. Roberts with an answer as soon as possible.

The last rule to be addressed by the Council, 47CSR4, was reviewed by Ken Politan from the Office of Mining and Reclamation. Ken stated that this is a new proposed rule that will establish a water certification program for surface mining operations and will implement the provisions of SB 145 passed during the 1998 Session.

Mr. Raney asked if implementation of this rule was specifically mandated in SB 145.

Mr. Politan said no, but the agency felt the proposed rule is needed to give some guidance in the implementation of the Senate bill.

Mr. Raney voiced his concern over the rule. He said he did not believe it was a workable

rule, and he had received several comments from others indicating the same concerns. He said that one of his biggest objections to the proposed rule was lack of input from outside DEP when the rule was written. Mr. Raney stated that SB 145 indicates the Director shall confer with representatives of the surface coal mining industry and representatives of environmental organizations who have an interest in water quality, before such a manual is developed and DEP staff did not do this.

After several minutes of discussion concerning 47CSR4, Mr. Raney made a motion to recommend that the Chairman file 47CSR3, 31, and 33 as proposed, with the condition that Mr. Roberts' questions are addressed in 47CSR31; that the comment period be extended after the end of the public hearing for 47CSR4, and any actions to implement the proposed rule be delayed until such time as a more workable rule can be drafted with the opportunity for input from interested parties. The motion was seconded and passed with a 3 to 1 vote.

Due to the length of time taken to review the proposed rules, there was no open discussion by the Council members. The meeting was adjourned at 5:15 p.m.

DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

CECIL H. UNDERWOOD
GOVERNOR

MICHAEL P. MIANO
DIRECTOR

John H. Johnston, Chief

August 5, 1998

Ms. Judy Cooper
Director Administrative Law
Secretary of State
Building 1, Suite 157-K
1900 Kanawha Blvd., East
Charleston, WV 25305-0770

RE: 45CSR8, 45CSR9, 45CSR16, 45CSR24, 45CSR25, 45CSR33, 45CSR34, 45CSR36
Agency-Approved Rules -- Office of Air Quality

Dear Ms. Cooper:

Pursuant to our telephone conversation last week, please find attached a copy of the public hearing transcript related to each of the above-referenced agency-approved rules. These rules were filed with your office and the Legislative Rule-Making Review Committee on July 31, 1998, and August 3, 1998. We would appreciate your appending the copy with the appropriate rule package previously filed.

As always, we appreciate your assistance and cooperation in this and other rule-making matters. If you have any questions, please call me at my office (304) 558-1213.

Sincerely,

Karen G. Watson

Karen G. Watson,
Attorney

KWG/mes
attachments

PERMITTING & PROGRAMS
1558 Washington Street East, Charleston, WV 25311-2599 Phone: (304) 558-0885 Fax: (304) 558-1222

PROCEEDINGS

MS. CHANDLER: This public hearing will now come to order on this 21st day of July, 1998, in the conference room of the West Virginia Division of Environmental Protection, Office of Air Quality, located at 1558 Washington Street, East, Charleston, West Virginia.

The purpose of the public hearing is to hear discussions on the proposed rules filed in the Secretary of State's Office on June 18, 1998 and noticed in the State Register on June 18, 1998. The legislative rules are 45CSR8, 45CSR9, 45CSR16, 45CSR24, 45CSR25, 45CSR22, 45CSR34 and 45CSR36. The rules were noticed in a Class I legal advertisement in both the Charleston Daily Mail and Charleston Gazette, and notice was also sent to various individuals and organizations.

This public hearing is being held pursuant to the provisions of 29A of the West Virginia Code and Section 110 of the Clean Air Act.

By way of introduction, my name is Jeanne Chandler of the Public Information Office of the West Virginia Division of Environmental Protection. I will be the moderator for these proceedings.

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of a federal standard under certain circumstances as required for permit program approval under Title V of the Clean Air Act.

The rule also establishes general provisions for emission standards for hazardous air pollutants, NESHAPs, and other regulatory requirements pursuant to Section 112 of the federal Clean Air Act. The rule codifies general procedures and criteria to implement emission standards for stationary sources that emit or have the potential to emit one or more of the hazardous air pollutants in or pursuant in Section 112(b) of the CAA.

This revised rule incorporates by reference additional provisions relating to petroleum refineries, organic hazardous air pollutants from the synthetic organic chemical and manufacturing industry, halogenated solvent cleaning, Group I and Group IV polymers and resins, pulp and paper production, aerospace manufacturing and rework facilities, secondary lead smelting, ethylene oxide commercial sterilization and fumigation operations, primary aluminum reduction plants and wood furniture manufacturing operations.

This rule, in conjunction with existing

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Rule 45CSR15, establishes general provisions for emission standards for hazardous air pollutants and other regulatory requirements promulgated by U. S. EPA as of June 1, 1998, pursuant to Section 112 of the federal Clean Air Act, as amended.

This rule codifies general procedures and emission standards for certain stationary sources that emit or have the potential to emit one or more of the substances listed as hazardous air pollutants in Section 112(b) of the Clean Air Act, as amended.

45CSR34 incorporates hazardous air pollutant standards codified by U. S. EPA under 40 CFR Part 63 whereas the earlier existing rule for hazardous air pollutants, 45CSR15, primarily incorporates hazardous air pollutant standards promulgated by U. S. EPA under 40 CFR Part 61 prior to amendment of the Clean Air Act. The Director intends to incorporate the additional federal counterpart rules by reference. Promulgation of this rule by the Legislature is necessary for the State to fulfill its responsibilities under the Clean Air Act, as amended.

A federal counterpart to this proposed rule exists. In accordance with the Director's recommendation, and with limited exception, the Office of

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BEFORE THE WEST VIRGINIA DIVISION OF
ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

STATE OF WEST VIRGINIA,

COUNTY OF KANAWHA, to-wit:

I, the undersigned, Missy L. Young, a Certified Court Reporter and Commissioner within and for the State of West Virginia, duly commissioned and qualified, do hereby certify that the foregoing is, to the best of my skill and ability, a true and accurate transcript of all the proceedings had in the aforementioned matter.

Given under my hand and official seal this 3rd day of August 1998.

Missy L. Young

Certified Court Reporter
Commissioner for the State of West Virginia

My commission expires April 15, 2008.

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