ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 268, 271, and 302

[RCRA–2003–0001; FRL–7875–8]

RIN 2050–AD80

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Dyes and/or Pigments Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; CERCLA Hazardous Substance Designation and Reportable Quantities; Designation of Five Chemicals as Appendix VIII Constituents; Addition of Four Chemicals to the Treatment Standards of F039 and the Universal Treatment Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is today listing as hazardous nonwastewaters generated from the production of certain dyes, pigments, and FD&C colorants. EPA is promulgating this regulation under the Resource Conservation and Recovery Act (RCRA), which directs EPA to determine whether these wastes pose a substantial present or potential hazard to human health or the environment when they are improperly treated, stored, transported, disposed of or otherwise managed. This listing sets annual mass loadings for constituents of concern, such that wastes would not be hazardous if the constituents are below the regulatory thresholds. If the wastes meet or exceed the regulatory levels for any constituents of concern, the wastes must be managed as listed hazardous wastes, unless the wastes are either disposed in a landfill unit that meets certain liner design criteria, or treated in a combustion unit as specified in the listing description. This rule also adds five toxic constituents to the list of hazardous constituents that serves as the basis for classifying wastes as hazardous. In addition, this rule establishes Land Disposal Restrictions (LDR) treatment standards for the wastes, and designates these wastes as hazardous substances subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This rule does not adjust the one pound statutory reportable quantity (RQ) for the waste.

DATES: This final rule is effective on August 23, 2005.

ADDRESSES: EPA has established a docket for this action under Docket ID No. RCRA–2003–0001. All documents in the docket are listed in the EDOCKET index at *http://www.epa.gov/edocket.* Although listed in the index, some information may not be publicly available, *e.g.*, Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in EDOCKET or in hard copy at the RCRA Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the RCRA Docket is (202) 566–0270. This Docket Facility is open from 8:30 a.m.–4:30 p.m., Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: For general information, review our website at *http://www.epa.gov/epaoswer/hazwaste/id/dyes/index.htm.* For information on specific aspects of the rule, contact Robert Kayser, Hazardous Waste Identification Division, Office of Solid Waste (5304W), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460; telephone number: (703) 308–7304; fax number: (703) 308–0514; e-mail address: *kayser.robert@epa.gov.* For technical information on the CERCLA aspects of this rule, contact Ms. Lynn Beasley, Office of Emergency Prevention, Preparedness, and Response, Emergency Response Center (5204G), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460; telephone number: (703) 603–9086; e-mail address: *beasley.lynn@epa.gov.*

SUPPLEMENTARY INFORMATION:

Readable Regulations

Today's preamble and regulations are written in ''readable regulations'' format. The authors tried to use active rather than passive voice, plain language, a question-and-answer format, the pronouns ''we'' for EPA and ''you'' for the owner/generator, and other techniques to make the information in today's rule easier to read and understand. This format is part of our efforts toward regulatory improvement. We believe this format helps readers understand the regulations, which should then increase compliance, make enforcement easier, and foster better relationships between EPA and the regulated community.

ACRONYMS USED IN THE RULE

Acronym	Definition
BDAT	Best Demonstrated Available Technology.
BIODG	Biodegradation.
CAA	Clean Air Act.
CARBN	Carbon absorption.
CAS	Chemical Abstract Services.
CBI	Confidential Business Information.
CCL	Compacted clay liner.
CERCLA	Comprehensive Environmental Response Compensation and Liability Act.
CFR	Code of Federal Regulations.
CHOXD	Chemical or electrolytic oxidation.
CMBST	Combustion.
CoC	Constituent of concern.
CI	Colour Index.
CPMA	Color Pigments Manufacturers Association.
CWA	Clean Water Act.
CWTP	Centralized wastewater treatment plant.
ED	Environmental Defense (previously the Environmental Defense Fund or EDF).
E.O.	Executive Order.
EP	Extraction Procedure.

ACRONYMS USED IN THE RULE—Continued

Acronym	Definition
EPA	Environmental Protection Agency.
EPACMTP	EPA's Composite Model for Leachate Migration with Transformation Products.
EPCRA	Emergency Planning and Community Right-To-Know Act.
ETAD	Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers.
EU	European Union.
fb	Followed by.
FDA	Food and Drug Administration.
FD&C	Food, Drug and Cosmetic.
FR	Federal Register.
GCL	Geosynthetic clay liner.
GC/MS	Gas Chromatography/Mass Spectroscopy.
GM	Geomembrane.
GSCM	General Soil Column Model.
HELP	Hydrologic Evaluation of Landfill Performance.
HGDB	Hydrogeologic Database.
HPLC	High Performance Liquid Chromatography.
HQ	Hazard Quotient.
HSWA	Hazardous and Solid Waste Amendments.
ICR	Information Collection Request.
kg/yr	Kilogram/year.
LDR	Land Disposal Restriction.
mg/kg	Milligram per kilogram.
mg/L	Milligram per liter.
MSW	Municipal Solid Waste.
MT	Metric ton.
NAICS	North American Industrial Classification System.
OMB	Office of Management and Budget.
OSW	Office of Solid Waste.
OSWER	Office of Solid Waste and Emergency Response.
POTW	Publicly owned treatment works.
ppm	Parts per million.
PRA	Paperwork Reduction Act.
QA	Quality Assurance.
QC	Quality Control.
RCRA	Resource Conservation and Recovery Act.
RFA	Regulatory Flexibility Act.
RFSA	Regulatory Flexibility Screening Analysis.
RQ	Reportable Quantity.
SAB	Science Advisory Board.
SBA	Small Business Administration.
SBREFA	Small Business Regulatory Enforcement Fairness Act.
SIC	Standard Industry Code.
SW–846	Test Methods for Evaluating Solid Wastes.
TRI	Toxic Release Inventory.
UCLM	Upper confidence limit of the mean.
UMRA	Unfunded Mandates Reform Act.
U.S.C.	United States Code.
UTS	Universal Treatment Standard.
WETOX	Wet air oxidation.

Contents of This Final Rule

I. Overview

A. Who Will Be Affected by This Final Rule?

Today's final action will affect those who handle the wastes that we are adding to EPA's list of hazardous wastes under the RCRA program. This regulation could directly impact businesses that generate and manage certain organic dyes and/or pigment production wastes. In addition, manufacturers that do not make dyes or pigments, but that generate wastes containing selected constituents of concern, may be indirectly impacted. This is because we are adding new treatment standards for four chemicals, and we are adding five new constituents to the list of hazardous constituents on Appendix VIII of part 261. Thus, these actions may result in indirect impacts on these manufacturers. In addition, landfill owners/operators who previously accepted these wastes may be indirectly impacted. This action may also affect entities that need to respond to releases of these wastes as CERCLA hazardous substances. Impacts on potentially affected entities, direct and indirect, are summarized in section VIII of this Preamble. The document, ''Economic Assessment for the Proposed Loadings-Based Listing of Non-Wastewaters from the Production of Selected Organic Dyes, Pigments, and Food, Drug, and Cosmetic Colorants,'' November 2003 (hereafter known as the Economic Assessment Document) presents a comprehensive analysis of potentially impacted entities. Further updated analysis is also presented in the ''Revised Impacts Assessment.'' [1] These documents are available in the docket for today's rule. A summary of potentially affected businesses is provided in the table below.

TABLE 1.—SUMMARY OF FACILITIES POTENTIALLY AFFECTED BY THE U.S. EPA'S 2005 DYES AND/OR PIGMENTS MANUFACTURING WASTE LISTING FINAL RULE

SIC code	NAICS code	Industry sector name	Estimated number of relevant facilities*
Directly Impacted:			
2865	325132–1	Synthetic Organic Dyes	31.
	325132–4	Synthetic Organic Pigments, Lakes, and Toners.	
Indirectly Impacted:			
2800 (except 2865)	325 (except 325132)	Chemical Manufacturing	Less than 50 facilities total.**
4953	562212	Solid Waste Landfills and Disposal Sites, Nonhazardous.	
5169	42269	Other Chemicals and Allied Products (wholesale).	

SIC—Standard Industrial Classification.
NAICS—North American Industry Classification System.
***Note:** The figures in this column represent individual facilities, not companies. A total of 22 companies are expected to be impacted under this NAICS.
**Estimate based on 13 expanded scope facilities plus no more than 37 separate solid waste landfills (562212) potentially receiving wastes of concern.

The list of potentially affected entities in the above table may not be exhaustive. Our aim is to provide a guide for readers regarding entities likely to be regulated by this action. This table lists those entities that we are aware of that potentially could be affected by this action. However, this action may affect other entities not listed in the table. To determine whether your facility is regulated by this action, you should examine 40 CFR parts 260 and 261 carefully in concert with the final rules amending these regulations that are found at the end of this **Federal Register** document. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding section entitled **FOR FURTHER INFORMATION CONTACT**.

B. What Are the Statutory Authorities for This Final Rule?

Today's hazardous waste regulations are promulgated under the authority of Sections 2002(a), 3001(b), 3001(e)(2), 3004(d)–(m) and 3007(a) of the Solid Waste Disposal Act, 42 U.S.C. 6912(a), 6921(b) and (e)(2), 6924(d)–(m) and 6927(a), as amended several times, most importantly by the Hazardous and Solid

[1] Memorandum from Lyn D. Luben to the RCRA Docket, July 21, 2004.

Waste Amendments of 1984 (HSWA). These statutes commonly are referred to as the Resource Conservation and Recovery Act (RCRA), are codified at Volume 42 of the United States Code (U.S.C.), Sections 6901 to 6992(k) (42 U.S.C. 6901–6992(k)).

Section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9602(a) is the authority under which the CERCLA aspects of this rule are promulgated.

C. How Does the ED v. Johnson Consent Decree Impact This Final Rule?

HSWA established deadlines for completion of a number of listing determinations, including for dyes and pigment production wastes (see RCRA section 3001(e)(2)). Due to competing demands for Agency resources and shifting priorities, these deadlines were not met. As a result, in 1989, the Environmental Defense Fund (EDF, currently Environmental Defense or ED) filed a lawsuit to enforce the statutory deadlines for listing decisions in RCRA section 3001(e)(2). (*Environmental Defense* v. *Johnson,* D.D.C. Civ. No. 89–0598, subsequently referred to in this notice as the ED consent decree.) To resolve most of the issues in the case, in 1991 ED and EPA entered into a consent decree which has been amended several times to revise the deadlines for EPA action. Paragraph 1.h.(i) (as amended in December 2002) of the consent decree addresses the organic dyes and pigment production industries:

> EPA shall promulgate final listing determinations for azo/benzidine, anthraquinone, and triarylmethane dye and pigment production wastes on or before February 16, 2005* * * These listing determinations shall be proposed for public comment on or before November 10, 2003.

Furthermore, paragraph 6.e. (as amended) stipulates that:

> On or before November 10, 2003, EPA's Administrator shall sign a notice of proposed rulemaking proposing land disposal restrictions for dye and pigment wastes proposed for listing under paragraph 1.h.(i). EPA shall promulgate a final rule establishing land disposal restrictions for dye and pigment wastes listed under paragraph 1.h.(i) on the same date that it promulgates a final listing determination for such wastes.

Today's final rule satisfies EPA's duty under paragraphs 1.h and 6.e of the ED consent decree to finalize listing determinations and land disposal restrictions for the specified organic dyes and/or pigment production wastes.

II. Summary of Today's Action

In today's notice, EPA is promulgating regulations that add one waste generated by the dyes and/or pigments manufacturing industries to the list of hazardous waste in 40 CFR 261.32:

> K181—Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) Disposed in a subtitle D landfill unit subject to the design criteria in § 258.40, (ii) disposed in a subtitle C landfill unit subject to either § 264.301 or § 265.301, (iii) disposed in other subtitle D landfill units that meet the design criteria in § 258.40, § 264.301, or § 265.301, or (iv) treated in a combustion unit that is permitted under subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§ 261.21–261.24 and 261.31–261.33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.

This listing provides a flexible approach that focuses the regulation on wastes that present a risk to human health and the environment. All quantities of wastes generated during a calendar year up to the mass loading limits are not listed hazardous waste. Only wastes subsequently generated that meet or exceed the annual limits would potentially become hazardous waste. However, the listing includes a conditional exemption for wastes that are disposed of in a subtitle D or subtitle C landfill unit that meet the design standards specified in the listing description and for wastes treated in certain combustion units with the specified permits. Therefore, wastes that are below the mass loading limits, or wastes that meet the conditional exemption as described in the regulation, are excluded from the listing from their point of generation, and would not be subject to any RCRA subtitle C management requirements for generation, storage, transport, treatment, or disposal (including the land disposal restrictions).

EPA is listing this waste as hazardous based on the criteria set out in 40 CFR 261.11. As described in the November 25, 2003 proposed rule (68 FR 66164), we assessed and considered these criteria to determine whether nonwastewaters and wastewaters from the manufacture of dyes and/or pigments warranted listing. We evaluated the risks potentially posed by these residuals using quantitative risk assessment techniques.

After assessing public comments submitted in response to our proposal, we are finalizing the K181 hazardous waste listing, with several modifications. The final rule continues to establish mass-loading limits for seven of the eight proposed constituents of concern (CoCs), and continues to allow for the contingent exemption of wastes that meet or exceed these limits but that are managed in landfill units that are subject to the design criteria of either § 258.40, § 264.301, or § 265.301. We revised the exemption to also include wastes that are disposed in other non-municipal landfills (industrial landfills) that meet the liner design requirements in § 258.40, § 264.301 or § 265.301. We also added an exemption for wastes that are treated in combustion units that are either permitted under subtitle C, or that are onsite units permitted under the Clean Air Act (CAA). We are not, however, finalizing the proposed mass-loading levels for toluene-2,4-diamine; neither are we adding this constituent to Appendix VII of part 261 or to part 268.20 or 268.40 of the Land Disposal Restriction (LDR) standards.

Upon the effective date of today's final rule, wastes meeting the K181 listing description will become hazardous wastes and must be managed in accordance with RCRA subtitle C requirements, unless the wastes are to be managed in a manner that complies with the contingent management exemptions contained in the listing description. Residuals from the treatment, storage, or disposal of this newly listed hazardous waste also will be classified as hazardous waste pursuant to the ''derived-from'' rule (40 CFR 261.3(c)(2)(i)). Also, any mixture of a listed hazardous waste and a solid waste is itself a RCRA hazardous waste (40 CFR 261.3(a)(2)(iii) and (iv), ''the mixture rule''). We are not promulgating any exemption for treatment residuals from the derived-from rule for the reasons set out in the proposed rule (68 FR 66199). The mass-based approach already builds in an exemption for wastes that are generated with constituent masses below the loading limit, are disposed of in landfills with liner design requirements, or are treated in certain combustion units. Once a waste meets the classification for K181, any treatment residuals remain hazardous wastes, unless delisted under § 260.22.

Today's rule also takes final action on our proposed decision not to list as hazardous, as discussed in the proposal, wastewaters from the production of dyes and/or pigments.

Descriptions of wastes from the production of dyes and/or pigments can be found in the document entitled ''Background Document for Identification and Listing of Wastes from the Production of Organic Dyes and Pigments,'' November 2003 (hereafter referred to as the Listing Background Document), available in the docket for the rulemaking. Responses to public comments submitted on the November 25, 2003 proposal can be found in the ''Response to Comments Background Document—Hazardous Waste Listing Determination for Dyes and/or Pigments Manufacturing Wastes (Final Rule),'' dated February 2005 (hereafter referred to as the ''Response to Comments Background Document''), also available in the docket. In addition, a number of commenters incorporated comments submitted in prior rulemakings into their 2003 public comments. Our responses to these ''incorporated'' comments are also available in the docket for today's final rule in a document entitled, ''Background Document—Responses to Incorporated Historical Comments on Prior Rulemakings,'' dated February 2005.

We are also promulgating other changes to the RCRA regulations as a result of this final listing determination. These changes include adding constituents to Appendices VII and VIII of part 261, and setting land disposal restrictions for the newly listed waste. We are adding the following seven constituents to Appendix VII of 40 part CFR 261 due to the fact that these constituents serve as the basis for the new listing: Aniline, o-anisidine, 4-chloroaniline, p-cresidine, 2,4-dimethylaniline, 1,2-phenylenediamine, and 1,3-phenylenediamine. We are adding the following five constituents to Appendix VIII of 40 CFR part 261 as ''hazardous constituents'' because scientific studies show the chemicals have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms (*see* § 261.11(a)(3)): o-anisidine, p-cresidine, 2,4-dimethylaniline, 1,2-phenylenediamine, and 1,3-phenylenediamine.[2] Section IV.D of today's rule describes the changes to the land disposal restrictions establishing treatment standards for the specific constituents in the newly-listed waste.

Also, as a result of this final rule, this listed waste becomes a hazardous substance under CERCLA. Therefore, in today's rule we are designating these wastes as CERCLA hazardous substances. These changes are described in section VII of today's final rule.

III. Summary of Proposed Rule

A. What Wastes Did EPA Propose To List as Hazardous?

In the November 25, 2003 proposed rule (68 FR 66164), EPA proposed to list one waste generated by the dyes and/or pigments manufacturing industry as hazardous waste under RCRA:

> K181: Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c)(1) of this section that are equal to or greater than the corresponding paragraph (c)(1) levels, as determined on a calendar year basis. These wastes would not be hazardous if: (i) The nonwastewaters do not contain annual mass loadings of the constituent identified in paragraph (c)(2) of this section at or above the corresponding paragraph (c)(2) level; and (ii) the nonwastewaters are disposed in a Subtitle D landfill cell subject to the design criteria in § 258.40 or in a Subtitle C landfill cell subject to either § 264.301 or § 265.301. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§ 261.21–24 and 261.31–33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.

A summary of the proposed listing determination is presented below. More detailed discussions are provided in the preamble to the proposed rule and in the Background Documents included in the docket for the proposed rule.

In connection with the proposed K181 listing, EPA proposed to amend Appendix VIII of 40 CFR part 261 to add o-anisidine, p-cresidine, 2,4-dimethylaniline, 1,2-phenylenediamine, and 1,3-phenylenediamine to the list of hazardous constituents.

We proposed to establish treatment standards for K181. We also proposed to add the following constituents to the Universal Treatment Standards (UTS) Table in 268.24 and to the F039 treatment standards applicable to hazardous waste landfill leachate: o-anisidine, p-cresidine, 2,4-dimethylaniline, toluene-2,4-diamine, and 1,3-phenylenediamine. The effect of adding these constituents to the UTS Table (in addition to the requirements for treatment of these constituents in K181 wastes) would be to require all characteristic hazardous wastes that contain any of these constituents as underlying hazardous constituents above their respective UTS levels to be treated for those constituents prior to land disposal.

We also proposed to add K181 to the list of CERCLA hazardous substances.

B. How Was This Proposal Different From Prior Hazardous Waste Listing Determinations?

In previous hazardous waste listings promulgated by EPA, we typically describe the scope of the listing in terms of the waste material and the industry or process generating the waste. However, we proposed to use a newly developed ''mass loadings-based'' approach for listing dyes and/or pigment production wastes. In a mass loadings-based listing, a waste would be hazardous once a determination is made that it contains any of the constituents of concern (CoC) at or above the specified mass-based levels of concern.

In the proposed rule, we identified CoCs likely to be present in nonwastewaters which may pose a risk above specified mass loading levels. Using risk assessment tools developed to support our hazardous waste identification program, we assessed the potential risks associated with the CoCs in plausible waste management scenarios. From this analysis, we developed ''listing loading limits'' for each of the CoCs.

We proposed that if you generate any dyes and/or pigment production nonwastewaters addressed by the proposed rule, you would be required either to determine whether or not your waste is hazardous or assume that it is hazardous as generated under the proposed K181 listing. (Note, we proposed that if wastes are otherwise hazardous due to an existing listing in §§ 261.31–261.33 or the hazardous waste characteristics in §§ 261.21–261.24, the listing under K181 would not apply.) We proposed a three-step determination process. The first step was a categorical determination where you would determine whether your waste falls within the categories of wastes covered by the listing (*e.g.*, nonwastewaters generated from the production of dyes and/or pigments that fall within the product classes of azo, triarylmethane, perylene or anthraquinone) and whether any of the regulated constituents could be in your waste. We proposed that if you

[2] For toxicity information, see section 7 of the ''Risk Assessment Technical Background Document for the Dye and Pigment Industries Listing Determination,'' November 2003 in the docket.

determine under this first step that your waste meets the categorical description of K181 and that your waste may contain any K181 constituent, you would then in the second step determine whether your waste meets the numerical standards for K181 (*e.g.*, compare the mass loadings of the regulated constituents in your waste to the numerical standards). Your waste would be a listed hazardous waste if it contains any of the CoCs at a mass loading equal to or greater than the annual hazardous mass limit identified for that constituent (unless the waste is eligible for a conditional exemption under step three). Under the proposed approach, all waste handlers could manage as nonhazardous all wastes generated up to the mass loading limit, even if the waste subsequently exceeds one or more annual mass loading limits. Finally, in the third step, we proposed that you would be able to determine whether your waste is eligible for a conditional exemption from the K181 listing. We proposed that you would need to demonstrate that your waste does not exceed a higher mass loading limit for one constituent and that it is being disposed of in a landfill subject to design standards set out in § 258.40, § 264.301, or § 265.301.

The 2003 proposal (and today's final rule) differs markedly from two prior proposed listing determinations for the dyes and/or pigment manufacturing wastes. On December 22, 1994, we previously proposed traditional listings of five specific wastes from these industries (59 FR 66072). On July 23, 1999, we subsequently proposed to list an additional two wastes using a concentration-based listing approach (64 FR 40192). The 2003 proposal, and the final rule promulgated today, completely supercede the prior 1994 and 1999 proposals. See 68 FR 66171 for further discussion of the early background of this listing determination.

C. Which Constituents Did EPA Propose To Add to Appendix VIII of 40 CFR Part 261?

EPA proposed to add five constituents to the list of hazardous constituents at 40 CFR part 261. These chemicals and their Chemical Abstract Services (CAS) numbers are:

o-anisidine (CAS No. 90–04–0),
p-cresidine (CAS No. 120–71–8),
2,4-dimethylaniline (CAS No. 95–68–1),
1,2-phenylenediamine (CAS No. 95–54–5), and
1,3-phenylenediamine (CAS No. 108–45–2).

We proposed these chemicals as CoCs for the proposed K181 listing. Based on our assessment of the available toxicity data, we believed that these chemicals met the § 261.11(a) criteria for inclusion on Appendix VIII. Therefore, we proposed to add them to Appendix VIII of 40 CFR part 261.

D. What Was the Proposed Status of Landfill Leachate From Previously Disposed Wastes?

We proposed to amend the existing exemption from the definition of hazardous waste for landfill leachate generated from certain previously disposed hazardous waste (40 CFR 261.4(b)(15)) to include leachate collected from non-hazardous waste landfills that previously accepted the proposed K181 waste. We proposed to temporarily defer the application of the proposed new waste code to such leachate to avoid disruption of ongoing leachate management activities.

The Agency proposed the deferral because information available to EPA at the time indicated that the wastes proposed to be listed as hazardous have been managed previously in non-hazardous waste landfills. Leachate derived from the treatment, storage, or disposal of listed hazardous wastes is classified as hazardous waste by the derived-from rule in 40 CFR 261.3(c)(2). Without such a deferral, we were concerned about forcing pretreatment of leachate even though pretreatment is neither required by nor needed under the Clean Water Act (CWA).

E. What Were the Proposed Treatment Standards Under RCRA's Land Disposal Restrictions Standards?

We proposed, where possible, to apply existing universal treatment standards (UTS) for the proposed K181 constituents of concern (CoCs). We proposed to apply the UTS to these wastes because the waste compositions were found to be similar to other wastes for which applicable treatment technologies have been demonstrated.

We found that there is significant structural similarity among many of the CoCs, including those for which we had not previously set technology-specific standards. We proposed that all CoCs for these wastes can be treated with equal effectiveness (i.e., destroyed or removed so as to be no longer detectable) by similar methods of treatment. We proposed combustion as the most effective BDAT treatment for nonwastewater forms of these wastes. For wastewaters derived from K181, we proposed a treatment train of wet air oxidation (WETOX) or chemical oxidation (CHOXD) followed by carbon adsorption (CARBN), or application of combustion (CMBST) as BDAT for the CoCs for which treatment standards had not previously been developed.

We also assessed the potential of developing numerical standards for those constituents with current technology-based treatment standards and those CoCs in K181 that lack current treatment requirements. Commenters to the July 23, 1999 listing proposal (64 FR 40192) suggested that EPA establish numerical standards, because they allow any treatment, other than impermissible dilution, to be used to comply with the land disposal restrictions. We found that there was adequate documentation in existing SW–846 [3] methods 8270, 8315, and 8325 to calculate numerical standards for the CoCs, with the exception of 1,3-phenylenediamine; 1,2-phenylenediamine; and 2,4-dimethylaniline. For 1,3-phenylenediamine and 2,4-dimethylaniline, we proposed to transfer the numerical standards of similar constituents as the universal treatment standards.

For 1,2-phenylenediamine, we found during past method performance evaluations that it can be difficult to achieve reliable recovery from aqueous matrixes and precise measurements. Therefore, for this constituent, we proposed that wastewaters be treated by CMBST; or CHOXD followed by BIODG or CARBN; or BIODG followed by CARBN, and all nonwastewaters would be treated by CMBST. We noted that if data adequate for the development of a numerical standard were presented in comments, the Agency might promulgate a numerical standard as an alternative, or as the treatment requirement.

We indicated, however, that if these numerical standards were shown in comments not to be achievable or otherwise appropriate, we would adopt methods of treatment as the exclusive treatment standard. Under this technology only approach, all nonwastewaters identified as K181 would be treated by CMBST, and all derived from wastewaters would be treated by either WETOX or CHOXD, followed by CARBN or CMBST.

We also proposed to add the constituents in K181 with numerical treatment standards to the Universal Treatment Standards listed at 40 CFR 268.48. As a result, characteristic wastes that also contain these constituents would require additional treatment before disposal, if constituent

[3] Manual of test methods from EPA/OSW: ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' SW–846; see *http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm.*

concentrations exceed the proposed levels.

We proposed to amend the CoCs in F039 as necessary to include the constituents identified in K181 not already specified in F039. F039 applies to landfill leachates generated from multiple listed wastes in lieu of the original waste codes. F039 wastes are subject to numerical treatment standards equivalent to the universal treatment standards listed at 40 CFR 268.48. Without this change in existing regulations, F039 landfill leachates may not receive proper treatment for the constituents of K181.

The proposed treatment standards reflected the performance of best demonstrated treatment technologies, and were not based on the listing levels of concern derived from the risk assessment for dyes and/or pigments wastes. In that risk assessment, our analysis focused on the plausible management practices for only the dyes and pigment industries. As a result, our models did not attempt to assess all possible pathways, because the plausible management practice (disposal in a municipal subtitle D landfill) provides a certain level of control over some potential release pathways. In addition, our assessment of potential releases modeled engineered barriers in the form of various types of liner systems.

As discussed in the proposal, it was not appropriate to use the mass loading levels derived from these risk assessments as levels at which threats to human health and to the environment are minimized. Because there remained significant uncertainties as to what levels of hazardous constituents in these wastes would minimize threats to human health and to the environment posed by these wastes' land disposal, we chose to develop treatment standards for these wastes based on performance of the Best Demonstrated Available Technology for these wastes. *HWTC III,* 886 F. 2d at 361–363 (accepting this approach). For the same reason, we found that these technology-based treatment standards were not more stringent than the risk-based levels at which we could find that threats to human health and to the environment are minimized.

F. What Risk Assessment Approach Was Used for the Proposed Rule?

For the proposed rule, we conducted a risk assessment to calculate the maximum mass loading of individual constituents that could be present in dye and pigment waste and remain below a specified level of risk to both humans and the environment.

To establish these listing levels, we: (1) Selected constituents of potential concern in waste from dye and/or pigment production, (2) evaluated plausible waste management scenarios, (3) calculated exposure concentrations by modeling the release and transport of the constituents from the waste management unit to the point of exposure, and (4) calculated waste constituent loadings that are likely to pose an unacceptable risk. In addition, we conducted a screening level ecological risk assessment to ensure that the mass loading limits were protective of the environment.

The risk analysis for the dyes and/or pigment production wastes estimated the mass loading of individual constituents that can be present in each waste without exceeding a specified level of protection to human health and the environment. The risk assessment evaluated waste management scenarios that may occur nationwide. We selected a national analysis that captures variability in meteorological and hydrogeological conditions for this listing determination because facilities that manage these wastes are found in many areas of the country.

For this listing determination, we defined the target level of protection for human health to be an incremental lifetime cancer risk of no greater than one in 100,000 (10-5) for carcinogenic chemicals and a hazard quotient (HQ) of 1.0 for non-carcinogenic chemicals. The hazard quotient is the ratio of an individual's daily dose of a constituent to the reference dose for that constituent, where the reference dose is an estimate of the daily dose that is likely to be without appreciable risk of harmful effects over a lifetime.

To determine the allowable mass loadings for CoCs, we used a probabilistic analysis to calculate the exposure to nearby residents from disposal of those constituents in the types of waste management units that could be used by the dyes and pigments industries. We then established the allowable mass loading level such that the exposure to each constituent would not exceed the target level of protection for 90 percent of the nearby residents including both adults and children. Thus, the allowable mass loadings met a target cancer risk level of 10-5 or hazard quotient of one for 90 percent of the receptor scenarios we evaluated.

In this probabilistic analysis, we varied sensitive parameters for the distributions of data that were available. The parameters varied for this analysis include waste management unit size, parameters related to the location of the waste management unit such as climate and hydrogeologic data, location of the receptors relative to the waste management units, and exposure factors such as intake rates and residence times.

The preamble to the proposed rule (*see* 68 FR 66181, November 25, 2003) and the Risk Assessment Technical Background Document for the Dye and Pigment Industries Listing Determination (hereafter known as the Risk Assessment Background Document) provide more detail on this risk assessment.

IV. What Is the Rationale for Today's Final Rule?

A. Final Listing Determination

We are promulgating today a final listing for nonwastewaters generated from the production of dyes and/or pigments. As explained below, we are revising the listing language slightly from the proposal in response to comments. The final listing description follows:

> K181: Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) Disposed in a Subtitle D landfill unit subject to the design criteria in § 258.40, (ii) disposed in a Subtitle C landfill unit subject to either § 264.301 or § 265.301, (iii) disposed in other Subtitle D landfill units that meet the design criteria in § 258.40, § 264.301, or § 265.301, or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§ 261.21–24 and 261.31–33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.

EPA is listing nonwastewaters from the production of dyes and/or pigments as hazardous because this wastestream meets the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous. As described in the proposal (68 FR 66179), the criteria provided in 40 CFR 261.11(a)(3) include eleven factors for determining ''substantial present or potential hazard to human health or the environment.'' Most of these factors were incorporated into EPA's risk assessment, as discussed

further below. The risk analyses conducted in support of our proposed listing determination are presented in detail in the Risk Assessment Background Document, which is in the docket for today's rule.

We considered the toxicity of the chemicals potentially present in these wastes (§ 261.11(a)(3)(i)). We found that the CoCs are toxic chemicals with established health-based benchmarks for cancer and noncancer endpoints.[4] We considered constituent concentrations (§ 261.11(a)(3)(ii)) and the quantities of waste generated (§ 261.11(a) (3)(viii)) in establishing mass loading limits for specific CoCs. Thus, the listing description for K181 includes mass loading limits for specific CoCs that present risk to consumers of groundwater. In setting the mass loading limits, we used fate and transport models to determine the potential for migration, persistence, and degradation of the hazardous constituents and any degradation products (§§ 261(a)(3)(iii), 261.11(a)(3)(iv), and 261.11(a)(3)(v)).[5] Bioaccumulation of the constituents (§ 261.11(a)(3)(vi)) is not relevant to the key exposure pathway EPA assessed (consumption of groundwater).

As discussed in the proposal (68 FR 66178), we considered two other factors, plausible mismanagement and other regulatory actions ((§§ 261.11(a)(3)(vii) and 261.11(a)(3)(x)) in establishing the waste management scenario(s) modeled in the risk assessment. We considered mass loading limits based on two plausible waste management scenarios, clay-lined and composite-lined landfills. We are promulgating a final listing with mass loading limits for wastes in a clay-lined landfill, and a conditional exemption for wastes managed in landfills that are subject to (or otherwise meet) the liner design requirements specified in the listing description for municipal landfills (§ 258.40) or hazardous waste landfills (§ 264.301 or § 265.301). We are also adding an exemption for wastes treated in certain permitted combustion units. Thus, if generators of wastes potentially subject to the K181 listing use landfills meeting these design standards, or treat the waste in the specified combustion units, then the loading limits set forth in K181 would not apply and the waste would not be hazardous.

We also considered one factor beyond the risk assessment, that is, whether damage cases indicate impacts on human health or the environment from improper management of the wastes of concern (§ 261.11(a)(3)(ix)).[6] We concluded that the wastes in the damage cases may include wastes not in the scope of today's rule, and that the cases reflect management scenarios that are not currently common or plausible (see 68 FR 66189). Thus, while the damage cases indicated that some dyes and/or pigment production wastes may sometimes pose risks, EPA relied on its quantitative risk assessment in formulating today's final rule.

Significant comments submitted on this proposal and the supporting analyses are summarized below. The Response to Comment Background Document provides all of the comments and our responses to them.

1. Toluene-2,4-diamine

Toluene-2,4-diamine was one of the eight constituents of concern (CoC) for which EPA proposed a § 261.31(c)(1) mass loading limits. We also proposed a higher mass loading limit for toluene-2,4-diamine under § (c)(2) that would have identified a mass loading limit above which wastes would no longer be eligible for a contingent management exemption and would have been a hazardous waste. Toluene-2,4-diamine was the only CoC for which we proposed a § 261.32(c)(2) level.

Commenters argued that it is inappropriate to use toluene-2,4-diamine as a CoC because it is ''not typically or frequently used in dyes production'' (Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers or ETAD) and is ''not used in any color pigment facility for the production of color pigments'' (Color Pigments Manufacturing Association or CPMA). In the proposal, we described data collected from the Toxic Release Inventory (TRI), the Colour Index (CI), and two facilities' websites that potentially link use of toluene-2,4-diamine to facilities known to manufacture dyes and/or pigments. The commenters have addressed these potential links. Based on these arguments, we believe the commenters have successfully demonstrated that toluene-2,4-diamine is rarely used. Only one dye manufacturer reported using this constituent, and this use does not generate any waste containing this CoC; it is not used at all by any pigment manufacturers. (See Response to Comments Background Document for more detailed discussion regarding the use, or lack of use of toluene-2,4-diamine.) As a result, we do not believe it is appropriate to include toluene-2,4-diamine as a basis for listing K181 in today's final rule. Accordingly, we have removed this constituent from the proposed § 261.31(c)(1) standards, and have deleted entirely the proposed § 261.32(c)(2) standard in this action.

2. Use of Clay-Lined and Composite-Lined Landfills

We proposed to list nonwastewaters from dye and/or pigment manufacturing that met or exceeded mass loading limits for eight constituents of concern. These ''baseline'' loading limits were based on our risk assessment of management of the waste in a clay-lined landfill. We also proposed to conditionally exempt wastes managed in landfills subject to liner regulations for municipal or hazardous waste landfills, if the mass of one constituent of concern (toluene-2,4-diamine) was below a specified mass loading limit. The basis for this conditional exemption was a risk assessment of wastes managed in a composite-lined landfill.

A number of dye and pigment manufacturers submitted comments stating that they do not use unlined or clay-lined landfills, and most indicated that their waste is managed in landfills that have ''synthetic liners.'' The trade association for the dye manufacturers (ETAD) surveyed their members and stated that there is ''no use of unregulated clay-lined landfills or unlined landfills'' and that ''all known landfills currently in use are subtitle C or subtitle D landfills that incorporate a synthetic liner into their liner system.'' The association further noted that the design standards for municipal solid waste landfills promulgated in 1991 call for use of a composite liner (§ 258.40). The association also resubmitted a survey it originally submitted in 1999 in comments on the prior July 23, 1999 proposal, claiming that this showed all identified liner systems included a synthetic liner. The trade association for pigment manufacturers (CPMA) also surveyed their members and stated that their members do not use unlined or clay-lined landfills, but rather use ''synthetic lined industrial landfills'' and ''synthetic lined municipal landfills'' for their nonwastewaters. Based on this information, commenters argued that the risk assessment EPA used to establish mass loading limits for K181 should have been based on composite-lined landfills with a synthetic liner.

We continue to believe that the clay-lined landfill is an appropriate scenario for the baseline mass loading limits for K181 for several reasons. First, as noted

[4] Risk Assessment Background Document, Section 7.

[5] Risk Assessment Background Document, Sections 4 and 5.

[6] The final factor allows EPA to consider other factors as appropriate (§ 261.11(a)(3)(xi)), however we did not consider such factors.

in the proposal, our data show that the industries use municipal solid waste (MSW) landfills, and the liner requirements in § 258.40 are not applicable to existing units in operation since before October 9, 1993, or certain exempt units (§ 258.1(f)(1)). Thus, our data indicate that disposal of dye and pigment wastes into older clay-lined MSW landfills in operation is a plausible management scenario (see proposal at 68 FR 66191). In addition, the information provided by the commenters is insufficient to rebut this finding for these industries. In fact, the information provided by the commenters shows that industrial landfills are in use by some pigment manufacturers. There are no Federal liner requirements that are in place for such units. While many states have regulations for these type of industrial landfills, the requirements for liners appear variable and do not necessarily provide the same level of protection as the standards for municipal solid waste landfills in § 258.40. Finally, while commenters claimed that the landfills currently in use by respondents to their surveys have ''synthetic'' liners, they did not confirm that all landfills in use had composite liners that met the standards set out in § 258.40.

The specific landfill information resubmitted by ETAD was for seventeen landfills relevant to dye manufacturers only, and thus not representative of the landfills that could be used throughout the dye and pigment industries. (EPA estimated that there were about 2,300 MSW landfills in operation in 2000.) Furthermore, ETAD originally submitted this information in response to the proposed listing decision in 1999 for only three wastestreams generated by the dye and pigment industries; as such, ETAD did not clarify if other landfills may have been in use for other wastestreams. Finally, the limited information provided in this submission shows that the type of liner system was not specified for some landfills, and thus, it is not clear if the liner systems are composite liners that would meet the § 258.40 requirements.

We proposed mass loading limits based on two specific types of lined and fills, clay-lined and composite-lined landfills. We are promulgating a final listing with a conditional exemption for wastes managed in landfill units that meet the liner design requirements specified in the listing description (§ 258.40, 264.301 or 265.301).[7] Unlike the proposal, the final rule no longer sets a mass loading limit for toluene-2,4-diamine, and thus there are no testing requirements associated with this exemption. If generators of wastes potentially subject to the K181 listing use composite-lined municipal or subtitle C landfills, then the mass loading limits set forth in K181 would not apply and the waste would not be hazardous. (The final listing also includes an exemption for combustion, as discussed in the following section). Therefore, given the uncertainties in the types of liner systems that may be in place in landfills used by dye and pigment manufacturers, and based on the information available that indicates this is a plausible management scenario, we believe that it is appropriate to base the mass-loading limits on a clay-lined landfill.

3. Status of Wastes That Are Combusted

While we proposed a conditional exemption for wastes managed in units meeting the liner design criteria for municipal or hazardous waste landfills, we proposed that wastes that met or exceeded the baseline listing levels would be hazardous if treated by combustion. However, we solicited comment in the preamble on the option to exempt wastes going to combustion, provided the units are permitted under subtitle C or have other relevant permits under the Clean Air Act (CAA).

The comments generally supported the option of exempting wastes destined for combustion. Commenters stated that EPA should exempt wastes being combusted or include combustion in the contingent management practices qualifying for an exemption from the listing. Surveys submitted by the trade associations (ETAD and CPMA) confirmed that some facilities treated nonwastewaters by combustion, and other comments by specific companies stated they want to have the option of incineration in the future. Commenters pointed out that the proposed approach would mean that wastes that met or exceeded the baseline listing levels and are incinerated would be hazardous, while the same waste would be nonhazardous if it is managed in a landfill meeting appropriate criteria. Commenters contended that this would encourage facilities to shift from combustion to disposal in landfills, even for wastes with high organic content. Commenters suggested that wastes going to ''permitted'' combustion units should be exempt, because permitting authorities consider input fuels for commercial boilers and combustion units.

Commenters stated that regulating incineration in the absence of a risk assessment or data is not warranted, and that combustion provides at least as much protection for the environment as a synthetic-lined landfill. Commenters cited the preamble discussion in the proposal, which stated that previous analyses for other wastes determined that potential risks from the release of constituents through incineration would be several orders of magnitude below potential air risks from releases from tanks or impoundments. Commenters also noted that EPA had concluded that combustion was effective and protective in setting BDAT standards for K181. One commenter submitted a risk assessment for combustion of their waste, which was previously submitted in their comments on the 1994 proposal, and indicated that the risks are below levels of concern.

After reviewing the comments and the available information, we have decided to exempt wastes treated in certain combustion units from the K181 listing. As we noted in the proposed rule, we expect risks from combustion of the key constituents of concern to be relatively low, based on the relatively low air risks exhibited by these constituents from treatment in tanks and surface impoundments. Analyses in previous listing determinations have shown that air risks arising from releases of constituents not destroyed in combustion are much lower than risks from releases of constituents from tanks and surface impoundments (68 FR 66196). Thus, while we did not model the specific dye and pigment wastes at issue in this rule, we believe that risks from combustion would be relatively low.

As commenters pointed out, by exempting wastes going to certain landfills, but not wastes treated by combustion, we would effectively be encouraging landfill disposal over combustion. The exemption for landfill disposal may therefore cause some facilities with organic waste having significant fuel (BTU) value to change from combustion (either offsite or onsite) to disposal in landfills, to take advantage of the landfill exemption. Exempting wastes treated in appropriate combustion units would avoid this unintended outcome of the listing.

As noted in the proposal, we found ten facilities reporting in the TRI that they send wastes off site for combustion (*e.g.*, incineration, energy recovery). All of the treatment facilities are RCRA Subtitle C facilities. Because this is a management practice we believe is

[7] Note that in the final rule we have replaced the term ''landfill cell'' with ''landfill unit.'' We made this change so that the terminology used in this rule is more consistent with the use of the term ''unit'' in the RCRA regulations for landfills (Part 258 and in §§ 264.301 and 265.301).

especially appropriate for waste with high organic content, we have decided to include an exemption for wastes treated in Subtitle C combustion units. To the extent that these wastes are already managed as hazardous because they exhibit a hazardous waste characteristic or meet another hazardous waste listing description, today's final rule will have no impact on them, because the K181 listing does not apply to wastes that are hazardous for other reasons (see the listing description).

We are more concerned about the combustion of dye and pigment wastes in units that are not subject to Subtitle C regulations. We know of only two facilities that use onsite thermal treatment of dye or pigment production wastes. One of these facilities indicated that it does not produce any in-scope wastes containing any of the CoCs. The other facility generates a still bottom that may exceed the mass loading limit for aniline. This facility resubmitted a risk assessment previously included in comments on the 1994 proposal in an attempt to show no significant risk for its onsite boiler. The risk assessment, while specific to this one combustion unit, provides information on the unit that indicates that it has relatively high destruction and removal efficiency (>99% in this case for the CoC known to be present, aniline). This particular unit is also permitted by the state under the CAA, and the permit contains specific limitations on the release of the key CoC (40 kg/year).[8] Therefore, in this specific case, the state regulatory authority has evaluated and controlled the releases of this CoC through this permit. We find the comments submitted by the company compelling, given that the waste has high organic content (98.7%) and a high fuel value. Therefore, we have also decided to include an exemption for onsite combustion units (units that are located at the site of generation) that are permitted under the CAA. We are limiting the exemption to onsite combustion units because: (1) Currently we have no information that offsite combustion is occurring in non-subtitle C units, and (2) we lack information on whether any permits for non-subtitle C offsite units would necessarily address all potential CoCs. Offsite combustion units are likely to accept a wide variety of other wastes, and seem less likely to address the specific constituents of concern for dye and pigment production wastes. We have less information on the various kinds of existing or potential permits relevant to offsite combustion units that may be used for dye and pigment wastes. Permits for offsite units under the CAA would not necessarily consider the CoCs for the dye and pigment wastes (*e.g.*, of the seven CoCs, only aniline and o-anisidine are Hazardous Air Pollutants under the CAA), whereas permits for onsite units are likely to be more specific for the dye and pigment industries.

4. Scope of Listing Definition

Commenters identified several issues related to the scope of the proposed listing, as summarized below, and discussed in more detail in the Response to Comments Background Document.

a. *Perylenes and Anthraquinones.* One trade association commented that EPA erred in including perylenes in the proposed listing because Paragraph l.h.(i) of the ED consent decree (as amended in December 2002) states that ''EPA shall promulgate final listing determinations for azo/benzidine, anthraquinone, and triarylmethane dye and pigment production wastes.'' The commenter argued that perylenes are not a subclass of the anthraquinone category, and that none of the eight CoCs are used as raw materials in the manufacture of perylene color pigments.

We note, as discussed previously in the proposal, that the ED consent decree (under which today's listing determination is mandated) further specifies that ''The anthraquinone listing determination shall include the following anthraquinone dye and pigment classes: anthraquinone and perylene'' (68 FR 66173). Therefore, we must make listing determinations that cover any corresponding wastes, regardless of whether or not perylenes are properly classified as anthraquinones. Furthermore, as discussed in the proposal and in the Response to Comments Background Document, we are not differentiating between dye manufacture and pigment manufacture. While the pigments industry may not use the K181 CoCs for manufacturing perylene pigments as contended by the commenter, it is possible that the dyes industry may still use some of them for perylene dyes. Note that ETAD and its member dye manufacturers did not provide comments in this respect. Finally, we note that the consent decree does not limit EPA's authority to list wastes, but merely identifies those wastes for which EPA must make a listing determination.

Another commenter argued that none of the eight CoCs are used to produce anthraquinone dyes or pigments and, therefore, EPA should remove anthraquinone dyes and pigments from the proposed rule. The commenter further pointed out that in the 1994 proposal (59 FR 66072), EPA proposed a no-list decision for wastewater from the production of anthraquinone dyes and pigments, and in the 1999 proposal (64 FR 40192), EPA proposed a no-list decision for wastewater treatment sludge from the production of anthraquinone dyes and pigments. As discussed in the proposal, EPA identified the constituents by developing a list of chemicals that could reasonably be expected to be associated with wastes from the production of various classes of dyes and pigments, including anthraquinone dyes and pigments. *See* 68 FR at 66180–66182, and ''Background Document: Development of Constituents of Concern for Dyes and Pigments Listing Determination'' in the docket. This commenter did not provide any documentation to support its argument that none of the eight CoCs are used to produce anthraquinone dyes or pigments, or otherwise specifically address the information and findings presented in the proposal. In addition, none of the other companies or trade associations made similar claims. Finally, we note that, as discussed in the 2003 proposal (68 FR 66171–2), our 2003 proposed rule completely supercedes the 1994 and 1999 proposals. In any case, unlike the 1999 concentration-based listing in which we evaluated specific waste types from the production of individual dyes/pigments classes,[9] the 2003 proposal grouped all of the wastes that are identified in the ED consent decree into wastewaters and nonwastewaters.

Moreover, some of the listing constituents might be present in the dyes and/or pigments production nonwastewaters as a result of reaction byproducts, impurities in raw materials, or as a result of degradation of raw materials or products. Therefore, we believe it is appropriate to retain both perylene and anthraquinone production within the scope of this final K181 listing. If, however, as the commenter suggests, the CoCs are not present in the generators' wastes, then the wastes would not be considered the K181 listed waste.

b. *Post-Production.* Two commenters stated that the proposed rule does not adequately define ''production'' of dyes and/or pigments, and that some wastes covered by the ED consent decree could

[8] *See* the air permit for BASF in the docket for this rule.

[9] Spent filter aids, triarylmethane sludges and anthraquinone sludges were deferred from the 1994 proposed listing decisions for 11 of the wastes covered in the ED consent decree (59 FR 66072, December 22, 1994). EPA did not take final action on either of the 1994 and 1999 proposals.

be generated from certain types of ''post-production'' activities. They contended that the listing should not apply to ''post-production'' activities, in reference to 68 FR 66173 in which the Agency stated that the proposed rule does not apply to the end-users of dyes and/or pigments and similarly does not apply to post-production formulation and packaging. One commenter suggested that EPA should include the appropriate clarifications in the CFR language that defines the scope of the proposed listing.

In response to the commenters' request for clarification, we are adding the following language to the final rule at the end of the Listing Specific Definitions in § 261.32(b)(1): ''Wastes that are not generated at a dyes and/or pigments manufacturing site, such as wastes from the off-site use, formulation, and packaging of dyes and/or pigments, are not included in the K181 listing.'' Thus, we are specifically including this in the regulatory language to clarify that we are not including in K181 those wastes that are not generated at a dyes and/or pigments manufacturing site. However, wastes resulting from the blending, formulation, preparation, processing (grinding, dispersing, drying, finishing, filtering, purification, product standardization, etc.), dust collection, packaging and any other operations related to in-scope dyes and/or pigments that occur on site at the covered dyes and/or pigments manufacturers are potentially within the scope of today's final listing, if they meet the relevant criteria. Note that, as required under the ED consent decree, we addressed a variety of dyes and/or pigment waste streams in this listing determination. The ED consent decree states that ''Listing determinations under paragraph 1(h) of this Decree shall include the following wastes, where EPA finds such wastes are generated: spent catalysts, reactor still overhead, vacuum system condensate, process waters, spent adsorbent, equipment cleaning sludge, product mother liquor, product standardization filter cake, dust collector fines, recovery still bottoms, treated wastewater effluent, and wastewater treatment sludge.'' Some of the wastes identified in the ED consent decree (such as product standardization filter cake and dust collector fines) can be generated from various ''post-production'' activities at the dyes and/or pigments facilities.

c. *Commingling.* We described in the proposal (68 FR 66195) that the scope of the listing covers commingled wastes with mass contributions from other processes (*i.e.*, that other process wastes commingled with in-scope process wastes would be covered by the proposed K181 listing). We requested comment, however, on an alternative approach which would allow facilities to count only those mass loadings associated with azo/triarylmethane/perylene/anthraquinone dyes and/or pigments manufacture when assessing whether their wastes meet or exceed the K181 listing levels. One commenter, a trade association, favored this alternative approach. This commenter reasoned that not allowing facilities to count only those mass loadings associated with covered production will result in ''an artificial incentive to inefficiently segregate wastes, potentially increasing risks associated with their management.'' However, this commenter did not elaborate or provide any specifics.

We have carefully considered the commenter's argument, but we have decided to retain the proposed approach. The dye and pigment industries use batch processes and numerous raw materials to produce a wide variety of products, thereby generating various nonwastewaters.[10] Therefore, we believe it would not only be more difficult for the facilities to implement the proposed alternative approach (*i.e.*, tracking and keeping adequate documentation of all the mass contributions prior to commingling), but it would also be very difficult for the regulating authorities to make their own determinations for oversight and enforcement purposes. For this reason and the reasons stated at 68 FR 66195, we have decided to take the more straightforward approach of structuring the mass-based K181 listing as proposed, and not to adopt the alternative approach. Therefore, the K181 listing covers mass contributions from other processes when in-scope and out-of-scope waste sources are commingled, and the entire commingled volume is included in the waste quantity and mass loading calculations. On the other hand, if the in-scope waste sources contain none of the K181 listing constituents, the commingled volume is not subject to the K181 listing even though its mass loadings may meet or exceed the K181 listing levels.

As discussed in the proposal, a facility might choose to segregate K181 sources from non-K181 sources, so that nonwastewaters from noncovered processes would not be subject to the K181 listing. One trade association felt that the general concept of segregating waste which has no in-scope K181 contribution is reasonable.[11]

To help clarify these concepts, we present below several examples of how wastes might be commingled. (*See also* the examples previously presented in the proposal at 68 FR 66205–66207.)

Example 1: In-scope wastes without CoCs, commingled with out-of-scope wastes.

Facility A produces numerous chemical products including a small amount of azo dyes. This facility uses none of the K181 CoCs in the manufacture of azo dyes, and it finds no CoCs in the dye manufacturing process wastewaters based on recent analytical results. Thus, according to the procedure in § 261.32(d)(1), the facility determines that any resulting treatment sludge is not K181. The in-scope azo dye process wastewaters are commingled and co-treated with a much larger volume of nonhazardous wastewaters generated from the production of various out-of-scope chemicals in a centralized wastewater treatment plant (CWTP) prior to discharge to a publicly owned treatment works (POTW). The facility uses aniline in some of the other out-of-scope chemical production processes. The facility determines that the resultant wastewater treatment sludges, though found to contain aniline above the listing level, are not subject to K181 because the azo dye process wastewaters treated in the plant do not contain any of the CoCs. The facility also determines that other nonwastewaters (including filtration sludges, spent filter aids, and other process solids) generated from dye manufacturing also do not contain any CoCs, based on its knowledge of the feed raw materials (including major and minor ingredients, and impurities) and the manufacturing processes (reaction, chemical degradation, waste generation, etc.). The facility documents its findings, and appropriately manages all the CWTP sludges and dye process nonwastewaters (also determined to be not characteristically hazardous and not meeting any other listing descriptions) as nonhazardous.

Example 2: In-scope wastes with traces of CoCs, co-managed with out-of-scope wastes.

Facility B is an organic pigment manufacturer operating a number of in-scope and out-of-scope production process lines. The facility generates a total of 450 metric tons per year (MT/yr) of nonwastewaters, consisting of 350 MT/yr of sludge from the facility's onsite wastewater treatment system and as much as 100 MT/yr of production waste solids generated from all onsite processes combined. Historically, all the nonwastewaters were stored in dumpsters and periodically shipped off site for disposal in a Subtitle D landfill. Following the promulgation of the K181 listing, the facility carefully examines the material safety data

[10] ETAD also indicated in its comment that ''Dyes production involves batch processes, numerous distinct products and highly variable waste streams * * *'' and that ''The production mix and scale is entirely subject to somewhat unpredictable customer demand.''

[11] Facilities might also choose to treat the K181 listing levels as valuable pollution prevention goals and engage in process modifications designed to reduce mass loadings (irrespective of their source) below the K181 loading limits.

sheets and finds traces of p-cresidine in some of the raw materials used. Based on the material purity information, the facility uses its knowledge and, based on mass balance (*see* § 261.32(d)(2) for generated quantities less than 1,000 MT/yr), determines that a maximum of 30 kg/yr of p-cresidine could be released to and contained in the combined volume of nonwastewaters generated for the year. Since the annual mass loading of p-cresidine is less than the K181 listing level of 660 kg/yr, the facility concludes that its in-scope nonwastewaters are not a K181 waste. The facility thus documents its findings, and appropriately continues to ship the commingled wastes to a subtitle D landfill.

Example 3: Segregation of wastes destined for disposal in a municipal landfill; total in-scope waste quantities over 1,000 MT/yr.

Facility C uses some of the CoCs in its production of various organic dyes and pigments covered by the K181 listing. It commingles and co-treats all the manufacturing process wastewaters on site, generating 1,200 MT/yr of wastewater treatment sludge. In addition, it generates 50 MT/yr of process wastes with high organic content (still bottoms). Therefore, this facility's manufacturing and treatment processes yield a total of 1,250 MT/yr of in-scope nonwastewaters. Given that the K181 listing allows nonwastewaters to be disposed in a municipal landfill subject to the § 258.40 design criteria regardless of constituent levels in the wastes, the facility decides to send all the wastewater treatment sludges to a municipal landfill subject to § 258.40. The still bottoms, however, would not be managed in the same manner due to their high liquid content.

The still bottoms do not exhibit any of the hazardous waste characteristics nor meet any other listing descriptions. Because the total annual waste quantity of dyes/pigments nonwastewaters generated by all the processes would exceed 1,000 MT/yr, the facility considers the options of either: (1) Complying with the annual testing requirements of § 261.32(d)(3) and, if the CoCs are below the mass-loading levels, sending the still bottom waste offsite for combustion in a nonhazardous combustion unit, or (2) sending the waste offsite to a subtitle C combustion unit. The facility suspects that the still bottom waste will exceed the mass loading limits for several constituents. Rather than going to the expense of confirming this through testing representative samples of the waste, the facility decides to send the waste off site for treatment at a subtitle C combustion facility. Thus, this waste is also exempt from the K181 listing because it is treated in a combustion unit permitted under Subtitle C.

5. Waste Quantities

As described in the proposal at 68 FR 66176–66177, we estimated facility by facility nonwastewater quantities (for 37 active organic dyes and/or pigment production facilities known to the Agency at the time) by using engineering estimates of wastewater treatment sludge generation rates and, wherever possible, facility-specific information provided in portions of RCRA Section 3007 surveys and public comments that were not claimed as confidential business information (CBI). We then used the average of the estimated annual waste quantities (1,894 MT/yr) and a high-end waste constituent concentration of 5,000 parts per million (ppm) to calculate a mass loading cutoff of 10,000 kilograms per year (kg/yr); that is, we assumed it would be highly unlikely to find the CoC above this level in typical dyes and/or pigment production nonwastewaters (*see* discussion at 68 FR 66186).[12] In addition, we used the estimated waste quantities for cost and economic analyses of the potential impacts of the proposed listing, and for waste treatment and management capacity analyses. Below we address the public comments on our use of the estimated waste quantities for establishing the proposed mass loading levels. Comments on our use of the estimated waste quantities for economic impacts and waste management capacity analyses are addressed separately in section VIII and section IV.E, respectively.

Two trade associations and several dyes/pigments manufacturers submitted comments on the Agency's estimates of waste quantities generated by the organic dyes and pigments industries. They argued that our waste quantity estimates were overstated, and thus our estimates of possible amounts of CoCs present in the wastes were too high.

Subsequent to the November 25, 2003 proposal, ETAD conducted a confidential survey of 15 organic dye production facilities, and submitted as part of their comments masked waste quantity data from the survey.[13] Based on its survey results, ETAD contended that the proposed rule greatly exaggerates the quantity of proposed K181 wastes generated at dyes production facilities and therefore, the proposed mass loading cutoff of 10,000 kg/yr should be revised. ETAD also indicated in its survey summary that two dye production facilities use none of the proposed K181 listing constituents in dyes production. Furthermore, ETAD confirmed that two dye manufacturers ceased operation during the past year.

CPMA similarly conducted a confidential survey of 21 organic pigment manufacturers following the proposal, and provided masked waste quantity summary data for both total and in-scope nonwastewaters as part of their comments. CPMA commented that, based on its survey, EPA's estimates of nonwastewater quantities overestimate the amount of nonwastewater generated by the pigments industry by at least 400 percent, and that the actual amount of nonwastewaters generated by the dyes and pigments production industries is much less than one-half the amount estimated by the Agency.

Six organic dyes and/or pigments manufacturers also presented their waste quantities and disputed the Agency's estimates for their facilities. Several other pigment manufacturers mirrored CPMA's comment that the Agency overestimated the waste quantities generated by the industries by at least 400 percent, although they did not specifically provide their own waste quantities. Several manufacturers informed us that their in-scope manufacturing processes do not contribute any of the proposed K181 constituents to their wastes.

We reviewed the waste quantity information and data provided by the commenters, but found some data discrepancies and deficiencies that limit use of the data. Our findings are summarized below:

—Two dye manufacturers have closed.
—The organic pigment manufacturing operation of one dye and pigment production facility was recently sold to a pigments manufacturer.
—Two facilities use none of the proposed K181 listing constituents.
—Three facilities do not generate any nonwastewater.
—CPMA's survey encompassed wastes generated in 2002, while ETAD did not specify the time period covered by its survey. As such, these two sets of survey quantity data may not be fully compatible.
—Three facilities making both dyes and pigments products responded to both ETAD and CPMA surveys. However, for the reported waste quantities possibly associated with these facilities, there appears to be some discrepancies between ETAD's and CPMA's masked annual quantity data.
—Three known Food, Drug and Cosmetic (FD&C) colorant production facilities were not covered by either the ETAD or CPMA survey.

We removed from the database the two facilities using none of the

[12] That is, a constituent of concern was eliminated if the calculated allowable loading from risk modeling exceeds 10,000 kg/yr.

[13] The survey waste quantity results initially included in ETAD's February 23, 2004 comments and attachments are annual quantities of nonwastewaters relating to the manufacturing of in-scope dyes (*i.e.*, specifically covered by the proposed rule). In response to our inquiry, ETAD later submitted an amended summary of waste quantities that include the other wastestreams commingled with the in-scope wastes.

proposed K181 listing constituents, as well as the three facilities generating zero waste quantities, because they would not be impacted by the proposed rule. Next, we made assumptions in trying to match the masked data points for the three facilities that responded to both the ETAD and CPMA surveys in order to account for the overlap, using publicly available data and our best judgement. To revise our previous estimates of facility-specific waste quantities, we adopted the specific waste quantity data provided by the commenting dyes/pigments manufacturers, made assumptions based on certain comments, and applied the estimated annual revenues to match the masked waste quantities with facilities. Finally, we added the three facilities not covered by either the CPMA or ETAD survey, using waste quantities we estimated for these facilities. The consolidated data points created a set of annual waste quantities with high uncertainties for the potentially impacted dyes/pigment facilities.

In any case, we have analyzed the commenters' data and concluded that the average estimated waste quantity we used for the proposed rule (*i.e.*, 1,894 MT/yr) is well within the distributions of values reported in comments; the estimated value of 1,894 MT/yr is comparable to the 80th percentile value (1,815 MT/yr) of the consolidated data set described above. For a detailed analysis of the commenters' data, see the Response to Comments Background Document, available in the public docket for today's final rule.

Based on our analysis of the commenters' waste quantity data, and in view of the data uncertainty in the ETAD and CPMA surveys, we continue to believe that it is reasonable to retain the proposed mass loading cutoff of 10,000 kg/yr for eliminating constituents from consideration.

6. Prevalence of Constituents of Concern

Commenters submitted critiques of each of the CoCs, arguing that they do not warrant inclusion in the final listing. With the exception of the arguments submitted for toluene-2,4-diamine (as discussed in a prior section of this notice), EPA has concluded that our basis for setting standards for the seven CoCs is valid. The comments for these seven CoCs and our responses are summarized below, and provided in more detail in the Response to Comments Background Document in the docket for today's final rule.

a. *Aniline.* We proposed to include aniline as a CoC because it is widely reported to be used in the manufacture of dyes and/or pigments. We detected aniline in a variety of wastes in our analysis of waste samples, it is reported to be an intermediate in the production of various products reported by U.S. manufacturers in the Colour Index, it is reported in the TRI by various known dye and/or pigment manufacturers, it was reported to be a waste component in the RCRA § 3007 survey and in comments on our 1994 proposal, and is a known intermediate for various products reported as available on the Web sites of various U.S. dye and/or pigment manufacturers (*see* the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that seven dye manufacturers use aniline in their processes, and that four pigment manufacturers use this CoC. Twelve pigment survey respondents also indicated that it is present in their wastes. Further, although CPMA stated that less than 25 percent of U.S. pigment manufacturers use aniline, nine pigment manufacturers individually commented that aniline is actually used or is likely present in their production of pigments. These data confirm our position at proposal that aniline is used widely in the manufacture of dyes and pigments.

ETAD argued that the available analytical data does not support a conclusion that aniline is likely to be present in dye wastes at levels exceeding the proposed listing level. One commenter (BASF) noted that the maximum concentration of aniline in wastewater treatment sludges reported in the proposal (31,000 ppm) was from their process, and reflects a process waste that was eliminated from their manufacturing process in 1996.

While we agree with ETAD and BASF that the available analytical data (as described in the proposal) are older, these data do provide a snapshot in time of the composition of wastes from the manufacture of dyes and/or pigments. BASF did not provide a profile of their currently generated wastes, so it is not possible to ascertain whether other wastes generated from their process(es) are as contaminated as the stream that was eliminated in 1996. BASF did, however, provide in their comments a risk assessment of releases from their onsite boiler.[14] This risk assessment contains limited waste characterization data which depicts aniline concentrations in their boiler feed even higher than the levels observed in most of the available analytical data (1.45% aniline). We note also that the commenters focused solely on the analytical data available for wastewater treatment sludges; we reported in the proposal three additional samples of ''other nonwastewaters'' that contain aniline, with a maximum value of 180,000 ppm.[15]

ETAD also argued that if EPA's estimated average waste quantity is adjusted to reflect the results of their survey, the 10,000 kilograms/year (kg/yr) screening level would be lower, eliminating aniline as a potential CoC. As discussed more fully in section IV.A.5, we believe that the waste quantity that we used in the development of the proposal is well within the distribution of waste quantities reported by commenters, and we accordingly have not adjusted it.

After considering the commenters' concerns, we believe that it is appropriate to retain the mass-loading levels for aniline in today's final rule.

b. *o-Anisidine.* We proposed to include o-anisidine as a CoC because it is widely reported to be used in the manufacture of dyes and/or pigments. We detected o-anisidine in several wastes in our analysis of waste samples, it is reported to be an intermediate in the production of various products reported by U.S. manufacturers in the Colour Index, it is reported in the TRI by known dye and/or pigment manufacturers, azo dyes derived from it are subject to regulation by the European Union (EU), and it is a known intermediate for products reported as available on the Web sites of several U.S. dye and/or pigment manufacturers (*see* the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that three dye manufacturers and two pigment manufacturers use o-anisidine in their processes. Further, five CPMA survey respondents reported this CoC being present in their wastes as a contaminant. Six pigment manufacturers (which represent 11 facilities manufacturing in-scope pigments) also indicated in their individual comments that o-anisidine is actually used or likely to be present in their pigment processes.

ETAD argued that o-anisidine is only used or generated at 3 of 15 dye production facilities. CPMA stated that it is only used in the production of pigments by less than 25 percent of U.S. pigment manufacturers. We believe, however, that these usage rates are not insignificant, particularly for an

[14] *See* Comment RCRA–2003–0001–0258.

[15] *See* the aggregated EPA data in Appendix I of the Background Document for Identification and Listing of Wastes from the Production of Organic Dyes and Pigments, which is in the docket for today's rule.

industry known to manufacture a wide variety of products over time and between companies using batch operations. Further, as noted above, six pigment manufacturers also reported using or generating this CoC. Therefore, the available information indicates that o-anisidine is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if o-anisidine were considered infrequently used, EPA would still consider that o-anisidine met the listing criteria set out in § 261.11.

ETAD noted that o-anisidine was only detected in one sample, and that the sample is outdated and of limited value as it was qualified as a ''J'' value [16] and difficult to differentiate from 2-/4-aminoaniline. We agree that the particular analytical result noted is an insufficient basis by itself to include o-anisidine in the K181 listing. However, we have other sources that confirm that this constituent is used by a number of generators in the manufacture of relevant colorants. We note that o-anisidine was also tentatively identified in four wastewater samples in the data summary presented in the proposal's Listing Background Document, and that the ETAD and CPMA surveys confirm that this constituent is still in use at a number of their members' facilities.

ETAD noted that o-anisidine was not reported in the RCRA § 3007 survey. We note that the survey data used to support the proposal represented a limited subset of the census survey (*i.e.*, those surveys without CBI claims), and may not be fully indicative of waste composition.

ETAD also argued that there is no evidence that either the calculated theoretical average concentration of o-anisidine (58 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. We agree that the data available to the Agency do not identify specific wastes that would exceed the listing levels. Nevertheless, given the format of the proposed rule (*i.e.*, a mass loadings-based listing), we believe that such data are not critical. Instead, we have demonstrated that the range of both expected waste quantities and organic waste constituent concentrations are broad enough that CoC levels in real wastes could potentially exceed the K181 loading limits.

ETAD further asserts that their newly collected data show that the median volume of o-anisidine is zero, and the maximum reported volume is less than one percent of the proposed mass loading. We do not believe these statistics are particularly meaningful. First, the commenter provided very little information about the nature of its data. For example, it is unclear what year the data reflect, or even if they represent the same calendar year among ETAD's survey respondents. Also, ETAD provided no information regarding the variability of these data over time (*e.g.*, were the data representative of typical operations? Are there relevant trends in the use of raw materials?). In an industry that produces a very diverse range of products from plant to plant and from year to year, we would not expect that the majority of manufacturers would utilize any one of the K181 constituents at any given time. Thus, the commenter's findings of a median value of zero is not surprising or relevant. Similarly, the commenter did not provide sufficient information regarding their assertion that there are no dye manufacturers whose mass loading of o-anisidine in their wastes exceed 1 percent of the K181 limit for us to remove this constituent from the listing, given all the information supporting this constituent. The commenter did not provide any information on how the survey respondents determined mass loadings of o-anisidine or other constituents in their waste, so we have no way of judging the validity of such claims. We also expect that any given facility's raw material slate will change over time in response to market demands for different colors and product characteristics. Retaining this constituent in the listing provides a clear incentive for generators to make choices in their manufacturing processes to avoid excessive levels of o-anisidine in their wastes. We note that there are three facilities that reported o-anisidine in Form A under TRI. Form A is used for chemicals with releases below 500 pounds per year (as well as other restrictions related to usage volume). The K181 mass loading level for o-anisidine is 110 kg, or 242 pounds, thus it is possible that these three facilities are above or near the K181 level.

Finally, ETAD also argued that because the groundwater modeling results indicated that the time-to-impact is more than 250 years for o-anisidine, this constituent should be excluded from the listing. As discussed later with respect to the comments on the risk assessment, we do not believe this is an unreasonable time frame.

In conclusion, we have determined that our basis for including o-anisidine in the listing is sound, and we are finalizing the o-anisidine level as proposed.

c. *4-Chloroaniline.* We proposed to include 4-chloroaniline as a CoC because it is reported to be used in the manufacture of dyes and/or pigments. We detected 4-chloroaniline in a variety of wastes in our analysis of waste samples, it is reported in the TRI by a known dye and/or pigment manufacturer, and azo dyes derived from it are subject to regulation by the EU (see the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that two dye manufacturers use 4-chloroaniline in their processes, and that one pigment manufacturer also uses this CoC, although not in a process covered by the scope of the proposed K181 listing.

ETAD argued that 4-chloroaniline is only used or generated at 2 of 15 dye production facilities. We believe that this is not an insignificant response, particularly for an industry known to manufacture a wide variety of products over time at companies using batch operations. Therefore, the available information indicates that 4-chloroaniline is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if 4-chloroaniline were considered infrequently used, EPA would still consider that 4-chloroaniline met the listing criteria set out in § 261.11.

ETAD noted that 4-chloroaniline was only detected in two samples. We point out, however, that 4-chloroaniline was also identified in two wastewater samples and one ''other nonwastewater'' sample in the data summary presented in the proposal's Listing Background Document, and that CPMA had reported the presence of this constituent in three split samples of the noted data. In addition, several commenters on prior proposals for these wastes described the presence of this CoC in their wastes. Further, the ETAD survey confirms that this constituent is currently in use at several of their members' facilities.

ETAD also pointed out that the referenced TRI data are limited to a single report in a single year. Bayer, the company that reported this TRI release, explained in their comments that 4-chloroaniline is not used by any covered dyes process and was never present in

[16] ''J'' values are chemical concentrations that were detected below the analytical reporting limit, but above the limit of detection for the method used. See OSW's methods manual, especially Chapter 1, Quality Control; ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW–846.''

the wastewater or wastewater treatment sludge generated at the facility of interest (Bushy Park, SC). While this may be the case, it is not clear whether 4-chloroaniline is used in pigment production at this site as the pigment operations were sold to Sun Chemical in January 2003.[17]

In addition, ETAD argued that the Agency's basis for regulating this constituent is weak because there are no references to the use of this chemical in the Colour Index, or in the RCRA § 3007 survey. We acknowledge both points, but note that the Colour Index, while very useful, provides an incomplete compendium of intermediates used in the production of dyes and pigments, particularly for those products that have only recently been brought to market. Furthermore, the information presented in the Colour Index is limited by certain confidentiality concerns manufacturers may have for colorants produced. In our research of products reported by manufacturers on their Web sites and those listed in the Colour Index, there were many products for which no intermediate information was available. Further, the Colour Index does in fact identify a number of manufacturers that produce colorants derived from 4-chloroaniline (*e.g.*, CI 37510, 37610), although none of them appear to be based in the U.S. This information implies that a market exists for these products, and U.S. manufacturers might produce these colorants. With respect to the lack of § 3007 survey data, we have previously described the incomplete nature of the survey data available for use in the proposed rule.

Furthermore, ETAD argued that there is no evidence that either the calculated theoretical average concentration of 4-chloroaniline (2,534 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. ETAD asserts that their newly collected data show that the median volume of 4-chloroaniline is zero, and the maximum reported volume is less than one percent of the proposed mass loading. We refer the reader to our earlier responses to similar comments on o-anisidine.

Finally, ETAD also argued that if EPA's estimated average waste quantity is adjusted to reflect the results of their survey and the assumed plausible maximum constituent concentration (5,000 ppm) were more reasonable, the 10,000 kg/yr screening level would be lower, eliminating 4-chloroaniline as a potential CoC. As discussed more fully in section IV.A.5, we believe that the waste quantity that we used in the development of the proposal is well within the distribution of waste quantities reported by commenters, and we accordingly have not adjusted it. Similarly, we believe that the assumed plausible maximum constituent concentration is appropriate, noting that we considered analytical data for both ''wastewater treatment sludge'' and ''other nonwastewaters,'' while the commenter appears to be focused only on the wastewater treatment sludge data. The data for ''other nonwastewaters'' show several constituents with concentrations in the thousands of parts per million.

In conclusion, we have determined that our basis for including 4-chloroaniline in the listing is sound, and we are finalizing the 4-chloroaniline level as proposed.

d. *p-Cresidine.* We proposed to include p-cresidine as a CoC because it is reported to be used in the manufacture of dyes and/or pigments. p-Cresidine is reported to be an intermediate in the production of various products reported by U.S. manufacturers in the Colour Index, it is reported in the TRI by a known dye and/or pigment manufacturer, azo dyes derived from it are subject to regulation by the EU, and it is a known intermediate for several products reported as available on the website of a U.S. dye and/or pigment manufacturer (see the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that four dye manufacturers use p-cresidine in their processes, and that two pigment manufacturers also use this CoC (although these uses may be from onsite dye manufacture).

ETAD argued that p-cresidine is only used or generated at 4 of 15 dye production facilities. As noted previously, we believe that this is not insignificant, particularly for an industry known to manufacture a wide variety of products over time at companies using batch operations. Two pigment facilities were reported by CPMA to also use or generate this CoC. Therefore, the available information indicates that p-cresidine is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if p-cresidine were considered infrequently used, EPA would still consider that p-cresidine met the listing criteria set out in § 261.11.

ETAD also argued that p-cresidine should be removed as a basis for the listing in part because there are no sampling and analysis data or RCRA section 3007 survey data demonstrating its presence in wastes. We acknowledge that p-cresidine was not detected in any of the samples collected in support of the 1994 rulemaking. However, the sampling was conducted at a subset of the manufacturing sites in operation at that time, and thus it is likely that these data are an incomplete profile of potential waste composition. In fact, the commenter's own data indicate that four dye manufacturers currently use p-cresidine as an intermediate, and thus the likelihood that this CoC exists in wastes at these sites is high. As mentioned previously, the § 3007 data presented in the proposal represents that portion of the data which were not subject to any confidentiality claims and, therefore, does not represent a complete profile of reported waste constituents.

In addition, ETAD argued that the TRI data does not support inclusion of p-cresidine because only one Form R and one Form A were submitted. However, we believe that it is significant that the TRI data confirm that current manufacturers of impacted colorants do use and release this CoC, supporting our basis for including p-cresidine in the K181 listing.

Further, ETAD argued that there is no evidence that either the calculated theoretical average concentration of p-cresidine (348 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. ETAD asserts that their newly collected data show that the median volume of p-cresidine is zero, and the maximum reported volume is less than one percent of the proposed mass loading. We refer the reader to our earlier responses to similar comments on o-anisidine.

Moreover, ETAD also argued that if EPA's estimated average waste quantity is adjusted to reflect the results of their survey and the assumed plausible maximum constituent concentration (5,000 ppm) were more reasonable, the 10,000 kg/yr screening level would be lower, eliminating p-cresidine as a potential CoC. We refer the reader to our earlier response to a similar comment on 4-chloroaniline.

Finally, ETAD argued that because the groundwater modeling results indicated that the time-to-impact is more than 250 years for p-cresidine, this constituent should be excluded from the listing. As discussed later with respect to the comments on the risk assessment, we do not believe this is an unreasonable time frame.

[17] *http://www.timesleader.com/mld/timesleader/5122083.htm.*

In conclusion, we have determined that our basis for including p-cresidine in the listing is sound, and we are finalizing the p-cresidine level as proposed.

e. *2,4-Dimethylaniline.* We proposed to include 2,4-dimethylaniline as a CoC because it is reported to be used in the manufacture of dyes and/or pigments. We detected 2,4-dimethylaniline in several wastes, it was reported to be a waste component in the RCRA § 3007 survey, and it is a known intermediate for several products reported as available on the websites of several U.S. dye and/or pigment manufacturers (*see* the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposed rule provided recent survey data that two dye manufacturing facilities report the use of this CoC, and confirming the presence of 2,4-dimethylaniline in wastes at two pigment manufacturing facilities. Six pigment manufacturers indicated in their individual comments that this constituent is actually used or likely present in their production of pigments.

ETAD argued that 2,4-dimethylaniline is only used or generated at 2 of 15 dye production facilities. CPMA stated that it is only used in the production of pigments by less than 25 percent of U.S. pigment manufacturers. We believe, however, that these usage rates are not insignificant, particularly for an industry known to manufacture a wide variety of products over time and at companies using batch operations. Further, we note that CPMA has confirmed that this CoC is a waste component at two pigment facilities, and that six pigment manufacturers have specifically confirmed that 2,4-dimethylaniline is relevant to their processes and/or wastes. Therefore, the available information indicates that 2,4-dimethylaniline is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if 2,4-dimethylaniline were considered infrequently used, EPA would still consider that 2,4-dimethylaniline met the listing criteria set out in § 261.11.

ETAD argued that our basis for including this constituent is weakened because this CoC was not detected in nonwastewaters. While we confirm this specific observation, we note that 2,4-dimethylaniline was detected in wastewaters by EPA, and CPMA reported this chemical in split sample analyses. These data support EPA's finding that this constituent may reasonably be expected to be present in some wastes from the production of dyes and/or pigments.

ETAD also suggests that our basis for including this constituent as a basis for the listing is weakened because we presented no linkages to the TRI, the Colour Index (or similar sources), or the EU ban for this constituent. First, we would note that 2,4-dimethylaniline is not listed in section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), and thus is not subject to TRI reporting. With respect to the Colour Index, this source does in fact identify a number of manufacturers that produce azo colorants derived from 2,4-dimethylaniline (*e.g.*, CI 14900, 16150, 29105), although none of them appear to be based in the U.S.[18] This information implies that a market exists for these products, and U.S. manufacturers might in the future choose to produce these colorants. Finally, with respect to the EU ban [Directive for a Community Ban on Azocolourants (76/769/EEC, Annex I, point 43)], as discussed in the proposal, this constituent has been studied for possible inclusion in a related ban of certain compounds in cosmetics and is regulated as a class 2 carcinogen in Germany.[19]

In addition, ETAD argued that there is no evidence that either the calculated theoretical average concentration of 2,4-dimethylaniline (53 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. We refer the reader to our earlier response to a similar comment on o-anisidine.

Furthermore, ETAD asserts that their newly collected data show that the median volume of 2,4-dimethylaniline is zero, and the maximum reported volume is less than one percent of the proposed mass loading. We refer the reader to our earlier response to a similar comment on o-anisidine.

Finally, ETAD argued that because the groundwater modeling results indicated that the time-to-impact is more than 250 years for 2,4-dimethylaniline, this constituent should be excluded from the listing. As discussed later with respect to the comments on the risk assessment, we do not believe this is an unreasonable time frame.

In conclusion, we have determined that our basis for including 2,4-dimethylaniline in the listing is sound, and we are finalizing the 2,4-dimethylaniline level as proposed.

f. *1,2-Phenylenediamine.* We proposed to include 1,2-phenylenediamine as a CoC because it is reported to be used in the manufacture of dyes and/or pigments. We detected 1,2-phenylenediamine in several wastes in our analysis of waste samples, it is reported to be an intermediate in the production of various products reported by U.S. manufacturers in the Colour Index, it was reported in the TRI by known dye and/or pigment manufacturers, and it is a known intermediate for several products reported as available on the websites of several U.S. dye and/or pigment manufacturers (*see* the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that two dye manufacturers use 1,2-phenylenediamine in their processes, and that two pigment manufacturers also use this CoC. Two pigment manufacturers also indicated in their individual comments that it is present in their wastes (although possibly not from in-scope pigment processes).

ETAD argued that 1,2-phenylenediamine is only used or generated at 2 of 15 dye production facilities. We believe that this is not insignificant, particularly for an industry known to manufacture a wide variety of products over time at companies using batch operations. In addition, CPMA has confirmed that this CoC is a waste component at two pigment facilities, and that it is used in the production of pigments at two facilities. Therefore, the available information indicates that 1,2-phenylenediamine is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if 1,2-phenylenediamine were considered infrequently used, EPA would still consider that 1,2-phenylenediamine met the listing criteria set out in § 261.11.

ETAD also argued that the TRI data does not support inclusion of 1,2-phenylenediamine because only one Form A was submitted for one year. While it is true that only one Form A was reported, the TRI data confirm that there is current use and release of this CoC, supporting our basis for including 1,2-phenylenediamine in the K181 listing.

In addition, ETAD argued that 1,2-phenylenediamine should not be

[18] One U.S. company, Bernscolor (Poughkeepsie, NY), is listed in the Colour Index as marketing CI 16150, however, neither trade association identified this facility as manufacturing in-scope dyes and/or pigments.

[19] Studied by EU in the context of Directive 76/768/EEC: SCCNFP/0495/01, Opinion of the Scientific Committee on Cosmetic Products and Non-Food Products Intended for Consumers concerning ''The Safety Review of the Use of Certain Azo-Dyes in Cosmetic Products,'' 2/27/02. *http://europa.eu.int/comm/food/fs/sc/sccp/out155_en.pdf.*

included as a basis for this listing in part because there are no RCRA § 3007 survey data demonstrating its presence in wastes. As mentioned previously, the § 3007 data presented in the proposal represent that portion of the data which were not subject to any confidentiality claims and, therefore, does not represent a complete profile of reported waste constituents. In fact, ETAD's (and CPMA's) own data indicate that a number of dye and/or pigment manufacturers currently use 1,2-phenylenediamine as an intermediate, providing further confirmation that this CoC exists in wastes at these sites.

Furthermore, ETAD noted that 1,2-phenylenediamine was only detected in one sample, and that the sample is outdated and of limited value as it was qualified as a ''J'' value, and difficult to differentiate from 1,4-phenylenediamine and o-anisidine. We agree that the particular analytical result noted is insufficient by itself to be a basis to include 1,2-phenylenediamine in the K181 listing. However, we have other sources of information that confirm that this constituent is used by a number of generators in the manufacture of relevant colorants. We note that 1,2-phenylenediamine was also tentatively identified in four wastewater samples in the data summary presented in the proposal's Listing Background Document. Two comments on the earlier proposed listing determination for these wastes also refer to the use or presence of this constituent in the wastes of concern. In addition, the ETAD and CPMA surveys confirm that this constituent is currently in use at a number of their members' facilities.

Moreover, ETAD argued that there is no evidence that either the calculated theoretical average concentration of 1,2-phenylenediamine (375 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. We refer the reader to our earlier response to a similar comment on o-anisidine.

ETAD also asserts that their newly collected data show that the median volume of 1,2-phenylenediamine is zero, and the maximum reported volume is less than one percent of the proposed mass loading. We refer the reader to our earlier response to a similar comment on o-anisidine.

Finally, ETAD argued that if EPA's estimated average waste quantity is adjusted to reflect the results of their survey and the assumed plausible maximum constituent concentration (5,000 ppm) were more reasonable, the 10,000 kg/yr screening level would be lower, eliminating 1,2-phenylenediamine as a potential CoC. We refer the reader to our earlier response to a similar comment on 4-chloroaniline.

In conclusion, we have determined that our basis for including 1,2-phenylenediamine in the listing is sound, and we are finalizing the 1,2-phenylenediamine level as proposed.

g. *1,3-Phenylenediamine.* We proposed to include 1,3-phenylenediamine as a CoC because it is reported to be used in the manufacture of dyes and/or pigments. Specifically, 1,3-phenylenediamine is reported to be an intermediate in the production of various products reported by U.S. manufacturers in the Colour Index, it was reported in the TRI by a known dye and/or pigment manufacturer, it was reported to be a waste component in the RCRA § 3007 survey, and it is a known intermediate for several products reported as available on the websites of several U.S. dye and/or pigment manufacturers (*see* the Listing Background Document).

In addition, ETAD and CPMA comments on the November 2003 proposal provided recent survey data indicating that three dye manufacturers use 1,3-phenylenediamine in their processes, and that one pigment manufacturer indicated that it is present in their wastes (although not from in-scope pigment processes).

ETAD argued that 1,3-phenylenediamine is only used or generated at three of 15 dye production facilities. We believe that this is not insignificant, particularly for an industry known to manufacture a wide variety of products over time at companies using batch operations. In addition, the available RCRA § 3007 survey results indicate that this constituent was reported by industry in at least 17 in-scope discrete wastestreams. Therefore, the available information indicates that 1,3-phenylenediamine is likely to be present in dye/pigment wastes, and it is reasonable to keep this as a constituent of concern. Moreover, even if 1,3-phenylenediamine were considered infrequently used, EPA would still consider that 1,3-phenylenediamine met the listing criteria set out in § 261.11.

ETAD also argued that 1,3-phenylenediamine should not be included as a basis for the listing in part because there are no sampling and analysis data demonstrating its presence in wastes. We acknowledge that 1,3-phenylenediamine was not detected in any of the samples collected in support of the 1994 rulemaking. However, the sampling was conducted at a subset of the manufacturing sites in operation at that time, and thus it is likely that these data are an incomplete profile of potential waste composition. The commenter's own data indicate that three dye manufacturers currently use 1,3-phenylenediamine as an intermediate, providing further confirmation that this CoC exists in wastes at these sites.

In addition, ETAD also argued that there is no evidence that either the calculated theoretical average concentration of 1,3-phenylenediamine (634 ppm) or the average waste volume of 1,894 MT/yr (described in the proposal's Listing Background Document) occurs in dyes production wastes. We refer the reader to our earlier response to a similar comment on o-anisidine.

Furthermore, ETAD asserts that their newly collected data show that the median volume of 1,3-phenylenediamine is zero, and the maximum reported volume is less than 10 percent of the proposed mass loading. We refer the reader to our earlier response to a similar comment on o-anisidine, and note that ''10 percent'' is not insignificant—process changes or stepped up production volumes might increase this maximum value to exceed the K181 loading limit.

Finally, ETAD argued that if EPA's estimated average waste quantity is adjusted to reflect the results of their survey and the assumed plausible maximum constituent concentration (5,000 ppm) were more reasonable, the 10,000 kg/yr screening level would be lower, eliminating 1,3-phenylenediamine as a potential CoC. We refer the reader to our earlier response to a similar comment on 4-chloroaniline.

In conclusion, we have determined that our basis for including 1,3-phenylenediamine in the listing is sound, and we are finalizing the 1,3-phenylenediamine level as proposed.

7. Availability of Analytical Methods for Constituents of Concern

Commenters contend that EPA did not adequately address the availability of analytical methods necessary to implement the proposed rule. The commenters pointed out that EPA's economic analysis suggested that four proposed constituents (toluene-2,4-diamine, 1,2-phenylenediamine, 1,3-phenylenediamine, and 2,4-dimethylaniline) lack established analytical methods. Most commenters were especially concerned with the lack of a verified method for one of the four constituents, toluene-2,4-diamine. One commenter also expressed concern specifically over the lack of methods for

1,2-phenylenediamine. Commenters questioned the adequacy of the methods for analyzing another proposed constituent (aniline). They referred to previous studies that indicated gas chromatography methods may cause false positive readings for aniline, because another chemical sometimes present (acetoacetanilide) often breaks down into aniline in the analysis.

We continue to believe that adequate analytical methods exist for most CoCs. However, as described previously, we have decided to no longer include toluene-2,4-diamine as a constituent of concern for K181. Therefore, analysis of this chemical will not be necessary. Concerning 1,2-phenylenediamine, we noted the problems with this constituent in the proposed rule (68 FR 66194). We have reexamined the available EPA methods and determined that, while some methods (*e.g.*, SW–846 method 8321B) show promise, the recoveries remain low. Thus, we have decided to allow generators to use their knowledge of the waste instead of determining the level of this constituent through testing. We have revised the final K181 regulatory language to reflect this change in the testing requirements by inserting (d)(3)(ii), which reads:

(d)(3)(ii) If 1,2-phenylenediamine is present in the wastes, the generator can use either knowledge or sampling and analysis procedures to determine the level of this constituent in the wastes. For determinations based on use of knowledge, the generator must comply with the procedures for using knowledge described in paragraph (d)(2) and keep the records described in paragraph (d)(2)(iv) of this section. For determinations based on sampling and analysis, the generator must comply with the sampling and analysis and recordkeeping requirements described below in this section.

We believe that the other constituents have adequate methods. While 2,4-dimethylaniline is not included as an analyte in EPA's SW–846 manual of methods, the chemical has been measured in dye and pigment waste samples by both EPA [20] and by industry.[21] As the 2003 BDAT background document indicated, the standard EPA gas chromatography/mass spectrum method (GC/MS method 8270) should be effective for this constituent. We are also confident that this GC/MS method is adequate for 1,3-phenylenediamine. This is further supported by an EPA technical paper showing that 1,3-phenylenediamine can be determined using GC/MS methods.[22] As noted by the commenters, this same technical paper describes the breakdown of the chemical acetoacetanilide to aniline during GC/MS analysis. While this could theoretically present difficulties in determining a precise concentration of aniline in wastes that also contain acetoacetanilide, generators may deal with this potential problem in several ways. The technical paper cited above shows that aniline may also be determined by other methods, *i.e.*, High Performance Liquid Chromatography (HPLC) methods. HPLC methods do not require the high temperatures needed for GC/MS analysis; thus, the presence of acetoacetanilide should not present any problems. Alternatively, a generator could conduct the GC/MS analysis, recognizing that some of the aniline detected may arise from the breakdown of acetoacetanilide. If the measured aniline in the waste is still below the aniline loading limit for K181, then the waste would not be a hazardous waste due to aniline. Because the loading limit for aniline is rather high (9,300 kg/yr), there would have to be a high level of acetoacetanilide present in the waste to cause any significant problem. In any case, the generators have the option of using the HPLC method if they believe that aniline levels would approach the mass loading limit, and if they know that the waste contains acetoacetanilide.

8. Risk Assessment

The Agency received comments on a number of issues that focused on the risk analysis that EPA conducted for the proposed K181 listing determination. The most significant of these comments, summarized below, pertain to the General Soil Column Model, biodegradation rates, infiltration rates, well distance, hydraulic conductivity, simulation durations and exposure parameters. We have developed responses for all of the public comments received on the proposed rule. The verbatim comments and our responses are provided in the Response to Comments Background Document in the docket for today's rule.

a. *General Soil Column Model (GSCM).* The landfill model that we used approximates the dynamic effects of the gradual filling of active landfills. The Generic Soil Column Model (GSCM) is a critical submodel or algorithm that predicts the fate and transport of constituents within the landfill and partitions contaminants to three phases: adsorbed (solid), dissolved (liquid), and gaseous.

Commenters contended that the GSCM is under review by the EPA's Science Advisory Board (SAB) and that the SAB panel identified significant errors that are expected to produce erroneous results. The commenters expected that the SAB panel would recommend that EPA not use the GSCM to make any regulatory decisions until a more thorough evaluation, including reanalysis of the underlying model code is completed. As a result, the commenters argued that it is unacceptable for EPA to use the GSCM to make regulatory decisions for the dyes manufacturing industry. The commenters noted that EPA has performed limited comparison simulations between the GSCM and another model (MODFLOW–SURFACT). While the results from this comparison indicated that the two simulations yield similar results, the commenters stated that the tests completed by EPA represent only a simple and potential worst-case scenario that does not test soil zone complexity. Although uniform soil zone properties are expected to result in maximum leaching, the commenters argued that EPA should also complete an evaluation of the GSCM under conditions with significant heterogeneity.

We continue to believe that the use of the GSCM is appropriate and does not produce erroneous results. In the final SAB report,[23] the SAB acknowledged that 3MRA—in its current state—could be used to support regulatory decisions for national exit concentrations. However, the SAB also recognized that 3MRA is the product of a collection of submodels (which includes the GSCM) and that any regulatory decisions that rely on 3MRA will reflect the uncertainty and the limitations of these models. The SAB panelists conducted a thorough evaluation of the GSCM and agreed with the EPA's thoughts on the strengths and limitations of the GSCM. The SAB pointed out that the GSCM—as compared to some of the legacy models in 3MRA—''is relatively untested and has some *potential* (italics added) theoretical inadequacies.'' The SAB review goes on to report on several model evaluation studies (*e.g.*,

[20] See the aggregated EPA data in Appendix I of the Background Document for Identification and Listing of Wastes from the Production of Organic Dyes and Pigments, which is in the docket for today's rule.

[21] See final table in the industry data attached to the Letter from J. Lawrence Robinson, President of the CPMA, to Ed Abrams of EPA, regarding aggregated test data resulting from analyses of the split samples, April 20, 1994, in the docket for today's rule.

[22] See the technical paper attached to the Letter from J. Lawrence Robinson, President of the CPMA, to Ed Abrams of EPA, regarding aggregated test data resulting from analyses of the split samples, April 20, 1994, in the docket for today's rule.

[23] Report of the U.S. EPA Science Advisory Board Review Panel; EPA's Multimedia, Multipathway, and Multireceptor Risk Assessment (3MRA) Modeling System; EPA–SAB–05–003, November 2004 (*http://www.epa.gov/sab/fiscal04.htm*).

conducting model-to-model studies and comparing estimated and experimental data) conducted by EPA, suggesting that these types of studies are important steps in building confidence in the model and increasing our understanding of the limitations of the GSCM.

One of the major theoretical issues raised by the SAB was the concern with the GSCM's ability to produce reliable leachate profiles for short time scales; that is, less-than-annual chemical concentration profiles for leachate. However, the Agency's risk assessment of waste from dye and/or pigment manufacture is based on long-term chronic exposures and, therefore, the concentrations at the point of exposure are averaged according to the exposure duration for each receptor. In particular, the comparison between the GSCM and MODFLOW/SURFACT (a widely used flow and transport simulator) demonstrated that long-term, average leachate concentration profiles generated by the GSCM were similar to those generated by the more robust solution technique used in MODFLOW–SURFACT. Thus, the comparison between the GSCM and MODFLOW–SURFACT demonstrated that the theoretical limitations in the GSCM do not appear to be significant when generating annual averages for the purposes of estimating long-term potential risks to humans and ecological receptors for the dyes and pigments assessment.

b. *Biodegradation.* Within the landfill, we simulated losses of mass through anaerobic biodegradation (*i.e.*, degradation processes that occur in an oxygen-free environment). In the absence of biodegradation data for seven organic chemicals, we used surrogate information for similar compounds. Commenters generally supported the use of surrogates and the appropriateness of considering biodegradation in anaerobic landfill conditions. However, commenters believed that EPA overestimated concentrations at receptor wells, because EPA used the maximum half-life from the available data (*i.e.*, we used the slowest degradation rates). Commenters suggested that it would be more appropriate to use average values for the half-life.

We continue to believe that our use of the maximum half-life for biodegradation is appropriate to ensure that the mass-loading levels are protective to compensate for the uncertainties inherent in the data. We used anaerobic degradation rates that were available in our primary reference,[24] and when degradation data were not available, we used degradation rates based on surrogate chemicals. This reference provides ranges of half lives in environmental media and the Agency acknowledges there is considerable uncertainty associated with these data. Where available, the authors use preferred data from experimental values. However, in cases where experimental values were not available, scientific judgements were made in order to estimate a value. The amount of biodegradation that occurs will also vary depending on various site-specific environmental parameters, including temperature, pH, and available biomass. In light of these uncertainties, we believe that it is prudent to use the high value in the range of values presented rather than to use an average value as suggested by the commenters.

c. *Landfill Infiltration Rates.* Our modeling for landfills included analyses for both clay liner and composite liner scenarios. For the clay-liner scenario, we used the existing databases of landfill infiltration rates and ambient regional recharge rates calculated using the Hydrologic Evaluation of Landfill Performance (HELP) water-balance model. For the composite liner scenario, we used empirical distributions of infiltration rates for composite-lined landfills compiled in a recent report (TetraTech report).[25]

The commenters stated that they identified several errors and inconsistencies with the infiltration estimates used to predict downgradient concentrations. The commenters indicated that the composite liner infiltration rates EPA used in the modeling analysis were not consistent with the infiltration rates shown in the TetraTech report. The commenters claimed that EPA incorrectly used infiltration rates for the single synthetic liner instead of the infiltration rates for the composite liner. One commenter noted that the Risk Assessment Background Document provides a leak density variable, as well as an infiltration rate for landfills, suggesting that infiltration rates through the liner are calculated. Thus, the commenter suggested that EPA clarify exactly how leachate curves are estimated. The commenter also stated that the HELP model is not an appropriate tool to determine liner percolation rates because (1) the HELP model is intended to be used as a landfill design tool to evaluate the merits of different design alternatives, and (2) the HELP model has been found to overestimate infiltration rates at landfills and to erroneously predict the timing of events.

As we described in the proposal, we based the composite liner scenario on infiltration rates extracted from the TetraTech report for composite lined landfill units, *i.e.*, units with a combination of geomembrane (GM) and clay liners (compacted clay, CCL, or geosynthetic clay, GCL). We screened the data to yield a data set of forty infiltration rates. The composite liner scenario represented only those rates from the screened set of rates and, thus, we did not use rates from single synthetic liners in this analysis. We then generated the specific values used for modeling the composite liner scenario through interpolation using the available forty infiltration rates. Thus, the interpolated values are a representative distribution of the forty rates and do not reflect single synthetic liners. Finally, we also note that we are not using the composite liner results to set mass-loading levels since we have decided to no longer include toluene-2,4-diamine as a constituent of concern for K181.

Regarding the HELP model, the Agency used the model to determine infiltration rates through capped unlined and clay lined landfills hypothetically sited at each of the 102 climate stations available in the model. Neither permeability nor leak density were included as parameters in these simulations. EPA used the HELP model, in conjunction with data from climate stations across the United States, to develop recharge and infiltration rate distributions for different liner designs.[26] Further, the landfills modeled in this analysis were consistent with standard design practices, and similar to the type of landfill HELP was designed to simulate. The Agency used the HELP model to estimate long-term infiltration rates based on the historical data available with the model. Recent evaluations of actual leachate generation rates have shown that the HELP model can also be a very good approximation of actual conditions.

d. *Well Distance.* The commenters contended that the information on well distance from EPA's National Survey of Municipal Landfills is not representative of disposal practices in the dye industry. The commenters'

[24] Howard, P.H., R.S. Boethling, W.F. Jarvis, W.M. Meylan, E.M. Michalenko, and H.T. Printup (ed.). 1991. Handbook of Environmental Degradation Rates. Lewis Publishers.

[25] ''Characterization of Infiltration Rate Data to Support Groundwater Modeling Efforts,'' Draft Final. TetraTech, Inc. September 28, 2001.

[26] See Appendix A of the EPA's Composite Model for Leachate Migration with Transformation Products (EPACMTP)—Parameters/Date Background Documents (2003).

review of the survey used to estimate well distance indicated that EPA only collected well distance information if a well was located within one mile of the landfill. The commenters contended that the survey results used by EPA are significantly skewed and any distribution calculated from these results will not be representative of municipal landfills, but only those municipal landfills with well distances less than one mile. The commenters suggested that EPA should have limited the well distance information to those facilities currently used by dye manufacturers, and resubmitted a survey of landfills originally submitted in comments on the previous 1999 proposed rule. According to the data supplied, seven of sixteen landfills have no nearby wells or have wells greater than one mile from the landfill boundary. Based on this information, the commenters argued that the Agency's well distance distribution was irrelevant for the dye industry and thereby overestimated potential migration of constituents from the landfill to the receptor well.

We believe that the use of a national distribution of landfill characteristics is appropriate. The populations of concern to EPA are those with private wells near landfills, and the selected distribution covers that population. The data supplied by the commenters are incomplete with respect to coverage of all facilities in the dyes and/or pigments industries and, therefore, may not be representative of disposal facility characteristics that could be used. The Agency adopted an approach to use a nationwide risk assessment methodology that has been applied in previous listing determinations, and this approach has been subject to peer review. As noted in our response to comments on landfill liners in section IV.A.2, the specific landfill information submitted by the commenters was for a small number of landfills relevant to dye manufacturers only, and would not be representative of the landfills that could be used (EPA estimated that there are about 2,300 MSW landfills in operation in 2000). Moreover, disposal locations, in addition to well locations, can change over time. Therefore, we used probabilistic analyses in an attempt to incorporate the variability and uncertainty in the data.

e. *Hydraulic Conductivity Values.* The commenters questioned a number of hydraulic conductivity values used in the regional hydrogeologic database. The commenters believed that these ''extremely high'' hydraulic conductivity values are implausible and skewed the model results. The commenters contended that this would over predict concentrations at the receptor well, and significantly under predict the travel time to the receptor well. Moreover, they believed that these high hydraulic permeabilities are not representative of any shallow or deep zone aquifer system in the United States.

It is the Agency's position that the hydrogeologic database (HGDB) is the best data source available to characterize subsurface parameters for conducting nationwide, probabilistic, groundwater pathway analyses. The hydraulic conductivity values used in this analysis were compiled under the auspices of the American Petroleum Institute and the National Well Water Association.[27] The objective of the data compilation was to provide the Agency an up-to-date, screened datasource for probabilistic modeling. Hydraulic conductivity values from site investigations at 400 hazardous waste sites were collected, subjected to internal review, and were subsequently published in a peer-reviewed journal.

The groundwater velocity at a specific location, such as a receptor well, has regional and local contributions. Regional groundwater velocities are proportional to hydraulic conductivity, while local velocities are governed by areal recharge and are almost independent of hydraulic conductivity. Of the entire hydraulic conductivity database, there are only two values equal to 2.21×10^7 m/yr. These values are relatively high but not implausible for fractured sedimentary rocks (Region 2). Regions 4, 5, and 6 (Sand and Gravel; Alluvial Basins, Valleys, and Fans; and River Valleys and Flood Plains, respectively) have four hydraulic conductivity values which are in excess of 10^5 m/yr. These values, although relatively high, are also not implausible. For example, literature references indicate that values of hydraulic conductivities for gravelly deposits may range from 10^4 to 10^7 m/yr.[28] We also note that these values make up an extremely small fraction of the values in the data base, thereby reflecting the likelihood of their occurrence nationally. This is consistent with the nationwide probabilistic approach we used in the risk evaluation.

f. *Simulation Durations.* The commenters pointed out that for several chemicals (o-anisidine, p-cresidine, and 2,4-dimethylaniline), the groundwater time to impact is more than 250 years. The commenters stated that simulations over this time period are computationally intensive and generate results that are unrealistic and not interpretable, because we cannot predict human behaviors that influence exposure or land uses so far in the future. Commenters suggested that EPA should limit the results to the maximum concentration within the next 100 years.

As a matter of policy, the Agency has adopted long time frames for assessing risks in the hazardous waste listing program because it allows peak concentrations to be observed at most receptor locations. This time frame is consistent with other listing determinations.[29] The EPACMTP computer model, developed by the Agency, can perform the simulation over these time frames in a computationally efficient manner on modern computers. It is well documented in the scientific literature that groundwater travel can span hundreds to thousands of years.

Therefore, we do not agree that simulations over a 250-year time period will generate results that are unrealistic and not interpretable. Furthermore, the commenter did not provide any reason why arbitrarily restricting the modeling to a 100-year time frame would be more appropriate. The Agency agrees that future changes in human behavior and environments are subject to uncertainty. However, the Agency's probabilistic approach in conjunction with relatively conservative assumptions is designed to provide a reasonable level of protection for future generations.

g. *Exposure Parameters.* Commenters stated that EPA has selected maximum values for several exposure parameters for the probabilistic analyses, and that use of maximum values overestimates potential risk.

Ingestion and inhalation rates: Commenters argued that EPA's current ranges for groundwater ingestion rates are overly conservative and that EPA overestimated the amount of water ingested by potential adult receptors. The commenters noted that the maximum values used by EPA are higher than the 99th percentile value presented in EPA's Exposure Factors

[27] Newell, C.J., L.P. Hopkins, and P.B. Bedient. 1989. Hydrogeologic Database for Ground Water Modeling. American Petroleum Institute, Washington, DC; and Newell, C.J., L.P. Hopkins, and P.B. Bedient. 1990. A hydrogeologic database for ground water modeling. Ground Water 28(5):703–714.

[28] See Freeze, R.A., J.A. Cherry. 1979. Groundwater; Prentice Hall, Englewood Cliffs, New Jersey, and Driscoll, F.G. 1986. Groundwater and Wells, Second Edition; Johnson Screens, Publisher, St. Paul, Minnesota.

[29] Paints Listing Determination; February 13, 2001; 66 FR 10093; Inorganic Chemical Manufacturing Listing Determination; September 14, 2000; 65 FR 55697.

Handbook (EPA 1997a).[30] The commenters also argued that EPA overestimates maximum inhalation rates for adult and child residents, noting that the maximum rate used by EPA exceeds the 99th percentile inhalation rates for men and women given in EPA guidance (EPA (2000), Options for Development of Parametric Probability Distributions for Exposure Factors).

We do not agree that the water ingestion and inhalation rates we used are overly conservative. The maximum values were used to truncate the distribution during sampling using a statistical software package. A large range was used in order to prevent the shape of the data distributions from being distorted. For groundwater ingestion, the mean, 50th, 90th, 95th, and 99th percentiles from the sampled data were verified by comparing them against the data provided in EPA's Exposure Factors Handbook. Similarly for inhalation, the simulated 99th percentile value for the adult inhalation rate we used was consistent with the values cited in the above document. In addition, the probabilistic analyses use values throughout the distribution of parameter values. The maximum value is only one point on the distribution curve, and thus, has a minor impact on the overall modeling results.

Exposure Duration: The commenters contended that EPA used exposure durations that are inappropriate for the receptors identified. The commenters argued that EPA overestimated the period of exposure, thereby arbitrarily increasing the risk estimates calculated. The commenters pointed out that the exposure duration for a child varied between one and 50 years, even though the greatest length of potential exposure is five years for a one-to five-year-old. Commenters stated that EPA correctly holds all other inputs within the one-to five-year age bracket; therefore, EPA's methodology could result in modeling a 22-year-old that has the body weight and ingestion rate of a five-year-old.

EPA does not agree that the exposure duration is inappropriate for the receptors identified. The exposure duration used in the analysis is selected once for each receptor at the beginning of each iteration. As we described in the proposal (68 FR 66182–66183), we evaluated a child whose exposure begins at a random age between one and six years old. We then aged the child for the number of years defined by the randomly selected exposure duration. As children mature, their physical characteristics and behavior patterns change. Depending on the exposure duration selected, a receptor (*e.g.*, a 1- to 5-year-old) ages through successive age groups (also known as cohorts). Other exposure parameters (*i.e.*, body weight, inhalation rate, drinking rate) are held constant while a receptor is in a given age cohort, but are selected again as a receptor enters the successive age cohort. For example, a receptor initiated at age three would have a constant 1- to 5-year-old body weight at ages 3, 4, and 5. At age 6, a new body weight would be selected from the 6- to 11-year-old body weight distribution to be used for the duration spent in this cohort (and so on). A 22-year-old would have a body weight selected from the adult body weight distribution, not that of a 1- to 5-year-old.

Indoor air exposures: The commenters believe that the shower model used by EPA overestimates potential exposure and risk. The commenters claim that EPA used several overly conservative exposure parameters, including the time in the bathroom. Commenters contended that it is highly unlikely that individuals regularly spend four hours in the bathroom showering and in related activities, and suggested that the total duration should not exceed a plausible value (*e.g.*, one hour total). The commenters also argued that EPA assumed that the entire constituent concentration is available for uptake and did not consider that only a fraction of that inhaled may be available and absorbed.

EPA does not believe that the indoor air exposure parameters are overly conservative. During the Monte Carlo simulation, the distributions for the time spent in showering and related activities are sampled independently, such that the combined shower exposure used in the Monte Carlo simulation is significantly lower than four hours. For example, the 50th percentile value of the combined shower exposures results in a duration of 32 minutes in the bathroom; the 99th percentile value of the combined shower exposures results in a total duration of 83 minutes in the bathroom. These are not implausible values. The commenters did not suggest any alternative exposure periods for the showering scenario, so we cannot compare any suggested values to those we used in our analysis. We note, however, that the mean, 50th, 90th, 95th, and 99th percentiles were verified by comparing them against the data provided in EPA's Exposure Factors Handbook. In addition, shower inhalation exposure was a determining exposure pathway for only two constituents (naphthalene and dichlorobenzene) and neither of these two constituents served as a basis for listing K181. Drinking water ingestion was the determining pathway for all other constituents.

In order to be protective of human health, EPA assumes that the entire constituent concentration in indoor and ambient air is available for respiratory uptake, unless chemical-specific data indicate otherwise. Data on the fraction absorbed from inhalation are not frequently available, and the commenter did not provide any such data. However, when data are available, the fraction absorbed is incorporated into the cancer and noncancer inhalation benchmarks.

Monte Carlo Distributions: In the Monte Carlo analysis, the Agency used distributions to describe several exposure parameters, including body weight, exposure duration, and drinking water intake. The commenters contended that EPA failed to follow its own guidance when developing these distributions, noting that the document Guiding Principles for Monte Carlo Analysis (EPA 1997c) stated ''risk assessors should never depend solely on goodness-of-fit tests to select the analytic form for a distribution.'' The commenters pointed out that for the distributions used in the exposure assessment, the Agency did not complete any graphical analyses of the data to ensure that the distributions selected were consistent with the results of the statistical analyses. The commenters also stated that EPA did not provide enough information to support the distribution selected for drinking water ingestion (a gamma distribution) instead of a lognormal distribution, as described in EPA's Exposure Factors Handbook.

We agree that graphical representations are often useful and we have provided such graphical representations for key exposure parameters in the Response to Comment document. However, as part of our analysis for the proposal, EPA conducted a thorough review of sampled data to ensure that the selected percentiles were representative of the data. Regarding the specific distribution selected for drinking water ingestion, the gamma model provided a better fit. In any case, we found no significant difference between using the gamma versus the log normal distributions for this data set. For example, using a gamma distribution for drinking water intake of adults, the 50th and 90th percentile simulated values are 1,272 mL/day and 2,302 mL/day, compared to

[30] U.S. EPA Exposure Factors Handbook, August 1997; EPA/600/P–95/002Fa. *http://www.epa.gov/ncea/pdfs/efh/front.pdf.*

1,252 mL/day and 2,268 mL/day for the log normal distribution.

9. Implementation

EPA received comments on a number of issues concerning the proposed implementation approach for the K181 listing determination. The most significant issues include: (1) EPA's alternative to consider all wastes generated during the year to be hazardous if the mass loading limit for a CoC in the wastes is met or exceeded at any time during the year; (2) not allowing higher quantity waste generators the option of using knowledge of their wastes to demonstrate that the wastes are nonhazardous; (3) use of the maximum detected concentration or a concentration based on the 95th percentile upper confidence limit of the mean to determine the mass of a CoC; (4) EPA's onsite recordkeeping requirements to support a nonhazardous determination for the wastes; and (5) EPA's annual follow-up testing requirements to verify that wastes remain nonhazardous. The Agency's responses to these comments are summarized below. The verbatim comments and our responses to all comments are provided in the Response to Comments Background Document.

a. *Alternative Option for Wastes Which Meet or Exceed Mass Loading Limit.* EPA took comment on an alternative option that would consider all wastes generated during the year to be hazardous if the mass loading limit for a CoC in the wastes is met or exceeded at any time during the year. Commenters on the proposed rule did not support this option. They argued that this alternative is not necessary or practical for several reasons. First, waste quantities determined to be nonhazardous based on the results of the risk assessment would be subject to hazardous waste regulation. Second, it would require the waste generators to accurately forecast customer demand for products and the amount of constituents in wastes over a one year period from highly variable waste streams that often result from batch manufacturing processes. Third, customers may have to be turned away and potential new products put on hold if a company's forecast for the mass of any CoC in its wastes is approached before the end of the calendar year and the wastes have been disposed in a nonhazardous landfill. Finally, waste management facilities (for nonhazardous wastes) may not accept such nonhazardous wastes if the wastes may later be declared hazardous.

EPA generally agrees with the concerns stated by the commenters on the alternative option. We noted some of these concerns in the proposed rule as part of our request for comment on this option. Specifically, we agree that the alternative approach would cause significant difficulties for waste management facilities that might accept initial batches of wastes as nonhazardous, but later find that these wastes are declared hazardous. As a result, the generators may have difficulty in finding waste management facilities that would accept wastes as nonhazardous under this approach. Therefore, we are finalizing the proposed approach, which considers all K181 potential wastes generated up to the mass loading limits of the CoCs to be nonhazardous and allows these wastes to be managed as nonhazardous. In other words, the K181 listing would apply to only the portion of wastes that meets or exceeds the mass loading limits for any of the K181 CoCs in a calendar year.

While the K181 listing only applies to wastes that meet or exceed the mass loading limits, the Agency notes that the annual mass loading limits, the landfill design requirements, and treatment in specified combustion units are conditions of the listing. Dyes and/or pigments nonwastewaters become K181 wastes unless a generator fulfills one of these conditions. If one or more of these conditions are not met, EPA or authorized states could bring enforcement actions for violations of hazardous waste requirements against anyone who has not managed the waste in compliance with applicable Subtitle C requirements. Furthermore, EPA can take action under section 7003 of RCRA if the management of dyes and/or pigment nonwastewaters may pose an imminent and substantial endangerment to human health or the environment. Thus, we advise generators to properly store nonwastewaters that are potentially hazardous under the K181 listing. At a minimum, we encourage generators to store all wastes in proper containers (*i.e.*, such that wastes are not placed directly on the ground) prior to disposal.

b. *Using Knowledge of Wastes To Demonstrate that Wastes are Nonhazardous.* EPA proposed that waste generators who generate or expect to generate 1,000 metric tons per year or less of K181 categorized wastes would have the option of using knowledge of their wastes to demonstrate that their wastes are nonhazardous. On the other hand, we proposed that generators who generate more than 1,000 metric tons per year (MT/yr) of K181 would be required to use the more extensive procedures in § 261.32(d)(3), which include a requirement to test for constituents reasonably expected to be present. Commenters objected to EPA's proposal that would limit who could use knowledge of their wastes to demonstrate that their wastes are nonhazardous. They stated that all waste generators should have the option of using knowledge to demonstrate that their wastes are nonhazardous, irrespective of how much waste they generate. This is because, in most cases, commenters believe that testing of wastes by generators is unnecessary and burdensome. They pointed out that waste generators have sufficient knowledge about their wastes to make appropriate determinations for any quantity of wastes that they generate. They also noted that the wastes do not contain many of the proposed CoCs for K181 and, when present, they are not likely to exceed threshold quantities. Finally, the commenters emphasized that, if toluene-2,4-diamine is not present in the wastes and the wastes are being disposed in lined landfills, then the testing requirements are irrelevant and should be deleted.

We proposed and are finalizing that all manufacturers can use knowledge of their wastes to determine which K181 constituents of concern are reasonably expected to be present in their wastes. However, we do not agree that manufacturers who generate more than 1,000 MT/yr should have the option to use knowledge to determine the level of K181 CoCs present in their wastes. This is in part because, as stated in the proposal, we believe that the larger quantities of wastes have the potential for posing greater environmental risks than smaller quantities of wastes if a nonhazardous determination based on knowledge turns out to be inaccurate (*see* 68 FR 66202). In addition, as discussed previously (section IV.A.6), we believe that the information available indicates that the constituents of concern are present in dye/pigment production wastes, and that the levels of the constituents have the potential to exceed the annual mass loading limits. Therefore, we believe that it is reasonable to require larger quantity waste generators to test their wastes. Test data represent the best information that can be obtained on the concentrations of CoCs present in the waste and for use in determining the mass loading levels for CoCs, because waste testing provides a direct indication of constituent levels. It should also be noted that, based on the conditional nature of the final listing

determination, the generators who generate more than 1,000 metric tons per year of K181 would only have to test their wastes if they are managing them in a landfill that does not meet the liner standards identified in the listing. That is, if such generators are managing their wastes in lined landfills that are subject to (or otherwise meet) § 258.40, 264.301 or 265.301, there is no need to determine the levels of K181 CoCs and thus no need to test. Finally, we note that if facilities generating 1,000 MT/yr or less use some level of waste analysis data to determine the levels of CoCs present, they are still only subject to the requirements in § 261.32(d)(2), and not the more extensive testing requirements in § 261.32(d)(3).

We are adding further language in the regulations to clarify when the generators are required to evaluate their wastes and to demonstrate their wastes are not hazardous. We have revised the beginning of § 261.32(d) to make it clear that only generators that do not dispose of the wastes in landfill units that meet the design requirements in the listing description are required to evaluate their wastes for CoCs under § 261.32(d)(1) through § 261.32(d)(3). Generators that dispose of their wastes in landfills meeting the specified design requirements do not have to evaluate their wastes, however they must document the disposal in an appropriate landfill (§ 261.32(d)(4)). Furthermore, we added language to the beginning of § 261.32(d)(3) to clarify that all steps in this subparagraph must be completed.

c. *Use of the Maximum Detected Concentration or a Concentration Based on the 95th Percentile Upper Confidence Limit of the Mean.* EPA proposed that waste generators use the maximum detected concentration or, if multiple samples are collected, use either the maximum concentration or a concentration based on the 95th percentile upper confidence limit of the mean (UCLM) in order to determine the mass of a CoC in the waste. Commenters did not support the use of the maximum concentration, since they believe it is overly conservative and would overstate the mass loading generated by a facility. The commenters also considered the use of a concentration based on the 95th percentile UCLM as complicated and open to interpretation. Instead of requiring the use of the maximum concentration or a concentration based on the 95th percentile UCLM, commenters suggested that waste generators should be allowed to use rolling averages, or average concentrations, or median concentrations.

To ensure protection of human health and the environment, we want to be reasonably conservative and see that generators use the most appropriate concentrations of CoCs to calculate the mass of each CoC in the wastes. Therefore, the use of rolling averages, average concentrations, or median concentrations would not be appropriate. Rolling averages and average concentrations are based on the simple average of the measured concentrations, with no statistical measure of the confidence limit associated with these concentrations. Therefore, the use of simple averages would not account for the possibility of a wide variability in the levels of CoCs in the waste. The median is simply the middle value in the data (*i.e.*, one-half of the values are above the median, and one-half are below it) and may not be representative of the average concentration of a CoC in the waste.

The use of maximum sample concentration is appropriate when the waste generator takes insufficient samples of a particular amount of waste. In general, because potential K181 wastes are likely to be highly variable, waste generators should be taking multiple samples to properly characterize the wastes. For multiple samples, the waste generator may use the maximum detected concentration or a concentration based on the 95th percentile upper confidence limit of the mean for a CoC. The upper confidence limit approach takes into account the variability of the waste and provides a measure of confidence that the mean concentration is below the upper bound of the confidence limit. Thus, using the 95th percentile upper confidence limit of the mean for a CoC gives a greater degree of confidence that its mass in the waste is below the mass loading limit. The 95th percentile upper confidence limit calculation, although it requires some statistical analysis, is relatively simple to calculate and has been used in other parts of the RCRA program (*e.g.*, see the implementation of the Comparable/Syngas Fuel Exclusion under 40 CFR 261.38(c)(8)(iii)(A)). [Use of the 95th percentile upper confidence level provides assurance that the mass loadings established in the regulation will be protective of human health and the environment.]

d. *Onsite Recordkeeping Requirements.* EPA proposed onsite recordkeeping requirements to support a nonhazardous determination. These included keeping records on waste sampling and analysis. Commenters questioned the need for waste analysis and onsite recordkeeping requirements associated with waste analysis if toluene-2,4-diamine is not present in the waste and the wastes are being disposed in a lined landfill. The commenters stated that EPA, at most, should require records of wastes limited to proof of transportation to the appropriate landfill.

As described previously, the Agency has reviewed the comments on toluene-2,4-diamine and has decided to no longer include toluene-2,4-diamine as a constituent of concern for K181. As a result of this decision, one of the two conditions that were proposed for the dyes and/or pigment nonwastewaters to be considered nonhazardous under the landfill exemption has been eliminated. The only remaining condition for these wastes to be considered nonhazardous in the final listing is for the wastes to be disposed in a landfill unit that meets the liner design standards specified in the listing description. (As discussed in section IV.A.3, the listing also includes an exemption for combustion.) Therefore, as long as the wastes are being disposed in these types of landfills, the waste generators do not have to test or maintain records associated with waste sampling or testing. The Agency agrees that records demonstrating that each shipment of waste was received by an acceptable type of landfill must be maintained.

A generator claiming that it is not subject to the listing would have to maintain sufficient documentation to demonstrate that it has not exceeded the relevant annual mass loading limits, that it has sent its waste to a landfill meeting the liner design standards specified under the conditional exemption, or that the waste was treated in a permitted combustion unit as specified in the listing description. EPA believes that it is critical for generators to have documentation demonstrating that the waste is below the mass loading limits, or that shipments of waste have been (or will be) sent to landfills meeting the specified design requirements or combustion units as specified in the listing. Paragraphs (d)(1), (d)(2), (d)(3) and (d)(4) of § 261.32 of the rule require generators of dyes and/or pigment nonwastewaters from the listed product classes to keep records under the authority of sections 2002 and 3007 of RCRA. Failure to comply with the recordkeeping requirements could result in an enforcement action by EPA under section 3008 of RCRA or by an authorized State under similar State authorities. Without adequate documentation, the regulating agency may presume that the generator is not complying with the requirements for

demonstrating that the wastes are nonhazardous.

Note that in the final rule, we are also clarifying that the requirement for keeping records on site for three years under paragraphs (d)(2) and (d)(3) refers to the three most recent calendar years by including more specific text in § 261.32(d)(2)(iv) and § 261.32(d)(3)(x) (*i.e.*, ''Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made''). We believe this clarification makes the recordkeeping requirement more consistent with the calendar year basis of the annual loading limits.

Below we provide examples to illustrate the types of records that need to be kept on site for two facilities, one that sends all wastes to a municipal landfill, and another that tests their waste.

Example 1: Facility D is a producer of a variety of in-scope organic dyes and pigments, generating 2,000 metric tons per year of wastewater treatment sludges. The generated wastes do not exhibit any hazardous waste characteristic nor meet any other listing descriptions. While the total quantity of wastes exceeds 1,000 MT/yr, the facility decides to send all of the wastes to a municipal landfill where the receiving units meet the liner design criteria of § 258.40. Therefore, the facility has no obligation to test for the presence of CoCs. To comply with the recordkeeping requirements of § 261.32(d)(4), the facility keeps records on site for three years to show that shipments of the wastes received by the landfill are disposed of properly. These records include documentation of the types of wastes shipped, shipping records from the transporter and the landfill documenting receipt of the waste shipment, and documentation from the landfill or state indicating that the landfill units meet the § 258.40 design standards.

Example 2: Facility E is a producer of in-scope organic dyes and pigments generating 3,500 MT/yr of process sludges. Facility E would like to manage as much as possible of the 3,500 MT as nonhazardous (*e.g.*, dispose of the waste in an industrial landfill that does not meet the liner criteria specified in the listing description), as long as the wastes are below the mass-loading limits in § 263.32(c). Since the total volume of nonwastewaters exceeds 1,000 MT/yr, the facility must follow the procedures set forth in § 263.32(d)(3) to determine the status of its nonwastewaters.

Therefore, the facility first determines that one of the K181 listing constituents is expected to be present in the facility's wastes (4-chloroaniline). This determination is based on the raw materials used for manufacturing, the impurities likely present in the process feeds, and the production chemistry involved. The facility documents this finding using the MSDS sheets for the materials used, the process reaction information reviewed, and the results of past analyses performed.

The facility develops a sampling and analysis plan that includes the requirements of § 263.32(d)(3)(iii) for characterizing the levels of the K181 constituents present in the wastes destined for disposal in an industrial landfill that does not meet the liner requirements. The facility collects and analyzes representative waste samples according to the developed sampling and analysis plan and the § 263.32(d)(3)(iv) testing requirements. The analytical results show that the annual amount of waste contains up to 6,800 kg/yr of 4-chloroaniline. The facility maintains on site the sampling and analysis plan, documents showing the analytical results and the accompanying quality assurance/quality control (QA/QC) data, and records showing the waste batches and quantities represented by the test results.

The facility keeps a running total of the 4-chloroaniline mass loadings determined throughout the year and documents the calculations performed. The facility manages those batches with cumulative mass loadings of less than 4,800 kg/yr of 4-chloroaniline as nonhazardous waste, and ships them to an industrial landfill that does not meet the design requirements of § 258.40, § 264.301, or § 265.301. The facility is careful to document the mass loadings in those batches. The facility ships the remaining waste to a municipal landfill subject to the § 258.40 design criteria. The facility keeps all of the above waste determination and management records on site for three years.

e. *Annual Follow-up Testing Requirements.* EPA proposed that waste generators continue to perform waste analysis annually after the wastes have been determined to be nonhazardous for the purpose of verifying that the wastes remain nonhazardous. However, we also proposed that the annual testing requirements for the wastes could be suspended if the annual running total mass levels for the CoCs during any three consecutive years based on the sampling and analysis results for the CoCs in the wastes are determined to be nonhazardous. We also proposed that following a significant process change (*i.e.*, if it could result in significantly higher levels of the CoCs for K181 in the wastes and greatly increase the potential for the wastes to become hazardous), the annual testing requirements for the wastes would be reinstituted. Commenters questioned the need for annual testing requirements over a period of at least three years. They believe that, after a demonstration that the wastes are nonhazardous for one year, annual follow-up testing requirements are not necessary, unless there is a significant change in the process. Also, if there is a significant process change, the commenters believe that a one year repeat demonstration should be considered sufficient to demonstrate that the wastes remain nonhazardous. In addition, commenters believe that there is no reason for annual testing of wastes disposed in lined landfills, if they do not contain toluene-2,4-diamine or if the concentration of toluene-2,4-diamine in the wastes does not change. Finally, commenters pointed out that EPA, in other hazardous waste exclusions, required an initial demonstration and repeat demonstration only when there is a significant change in the process that generates the wastes.

The Agency notes that toluene-2,4-diamine is no longer a constituent of concern for the K181 waste listing. Therefore, any waste generator that is disposing of these wastes in a landfill unit subject to the liner design criteria specified in the listing description, is not required to test or conduct repeat testing under the conditional final listing for the dyes and/or pigments nonwastewaters. However, any large waste generator that tests their wastes and is not disposing of them in this type of landfill (or treating the waste by combustion as specified in the listing) is subject to the testing requirements (as proposed) in today's final rule at § 261.32(d)(3). This is because the wastes produced by the dyes and/or pigments industries using batch processes can be highly variable.[31] As a result, we do not believe that testing for one year is sufficient to demonstrate that the waste would remain nonhazardous over a sufficiently long period of time. Thus, the Agency is requiring test data to show that the dyes and/or pigment wastes are nonhazardous for three consecutive years to provide a greater degree of confidence in the waste determination. The follow-up testing can only be suspended if it is demonstrated that the wastes are nonhazardous for three consecutive years.

10. Exemption for Non-Municipal Landfills

The proposed rule included an exemption for wastes disposed in landfill units that are subject to the liner design requirements in § 258.40. This

[31] As ETAD indicated in its comment that ''Dyes production involves batch processes, numerous distinct products and highly variable waste streams * * *''

was based on our risk analysis that demonstrated that wastes disposed in landfills with composite liners did not present significant risks for K181 dye and pigment wastes. (In the proposal, we also included a mass-loading limit for toluene-2,4-diamine for composite-lined units, but as noted previously, we are dropping this constituent in the final rule.) We also sought comment on the option of including in the exemption wastes that are disposed in other non-municipal landfills (industrial landfills) that meet the liner design requirements in § 258.40 or Subtitle C landfills. One commenter indicated that, since lined landfills do not pose a significant risk for disposal of the waste, manufacturers generating potential K181 waste should have the option of utilizing synthetic membrane lined industrial landfills which are as protective as lined municipal landfills. The commenter suggested that the generators could be responsible for assuring that a landfill is designed with an appropriate synthetic liner system.

After considering this issue fully, we agree that it would be appropriate to include industrial landfill units (*e.g.*, non-municipal landfill units) in the landfill exemption for the K181 listing, provided the units meet the specified liner design standards. While the available information indicates that generators are using primarily municipal landfills for disposal of dyes and pigment manufacturing wastes, comments submitted (see CPMA comments, Appendix B) indicate that industrial landfills are in use to some extent. We do not wish to preclude use of commercial industrial landfills that meet the liner standards for municipal landfills in § 258.40 (or for subtitle C landfills). As the commenter suggested, the generator would be responsible for documenting that the landfill meets the specified liner standards. States have regulations governing the design of non-municipal non-hazardous landfills.[32] Thus landfill operators are likely to have certifications or permit conditions available to provide to generators who wish to use such landfills instead of municipal landfill units. As described previously in the discussion on recordkeeping requirements, generators wishing to qualify for the exemption are required to maintain records to show that they are using an appropriate landfill unit, whether the unit is a municipal landfill, subtitle C landfill, or an industrial landfill. Therefore, we are finalizing the listing to include an exemption for wastes disposed in subtitle D landfills that meet the design requirements in § 258.40, § 264.301, or § 265.301. The landfill exemption in the K181 listing now reads as follows (the final rule also includes an exemption for certain combustion units, as well):

> These wastes will not be hazardous if the nonwastewaters are: (i) Disposed in a subtitle D landfill unit subject to the design criteria in § 258.40, (ii) disposed in a subtitle C landfill unit subject to either § 264.301 or § 265.301, (iii) disposed in other subtitle D landfill units that meet the design criteria in § 258.40, § 264.301, or § 265.301, or (iv) treated in a combustion unit that is permitted under subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act.

B. Final ''No List'' Determination for Wastewaters

The Agency proposed not to list as hazardous wastewaters from the production of dyes and/or pigments. We received numerous comments supporting this proposal, and no adverse comments on this proposed decision. We have not independently learned of any new information requiring us to change our position on these wastes. Therefore, we are making a final decision not to list wastewaters from the production of dyes and/or pigments.

C. What Is the Status of Landfill Leachate Derived From Newly-Listed K181Wastes?

As noted in the proposed rule, actively managed landfill leachate and gas condensate generated at non-hazardous waste landfills derived from previously-disposed and newly-listed wastes could be classified as K181. We proposed to temporarily defer the application of the new waste code to such leachate to avoid disruption of ongoing leachate management activities while the Agency decides if any further integration is needed of the RCRA and CWA regulations consistent with RCRA section 1006(b)(1).

We are finalizing the revisions to the temporary deferral in § 261.4(b)(15) with no change from the proposed rule. Commenters generally supported the proposed deferral. However, two commenters stated that EPA should make the deferral permanent. One of the commenters stated that the various approaches used by EPA in listings, including the mass loadings approach proposed for the current dyes and pigments waste listing, creates uncertainty for the municipal landfill operator regarding leachate management. The other commenter also urged EPA to expand this deferral to include leachate that is derived from a surface impoundment.

As we noted in the proposal, we believe a temporary deferral is warranted. We believe that it is appropriate to defer regulation on a case-by-case basis to avoid disrupting leachate management activities, and to allow us to decide whether any further integration of the two programs is needed.[33] While the commenter suggested there were ''uncertainties'' in leachate management requirements, no specific problems were identified. In any case, a broader exemption for landfill leachate is beyond the scope of the current rulemaking. Similarly, we see no need to expand the deferral to include leachate from surface impoundments, as well as landfills. The issues raised by this commenter relate to the management of leachate from closed surface impoundments located on site. We believe that these issues are site-specific and are best left to the local regulatory agency. Therefore, we are not expanding the deferral to include impoundment leachate.

One commenter sought clarification on our use of the term ''active management,'' in the context of our statement in the proposal that ''The Agency often uses the term 'active management' as a catch-all term to describe the types of activities that may trigger RCRA subtitle C permitting requirements.'' (See 68 FR 66199, Footnote 57). The commenter noted that actions not requiring a permit may be active management and wanted to clarify that active management would include situations like 90-day storage of excavated K181 waste, which does not require a permit. The commenter is correct. We did not mean to imply that active management can only occur for actions requiring a RCRA subtitle C permit. In the case of a typical listed waste, excavated wastes stored in 90-day containers (*e.g.*, roll-off bins) would indeed be considered ''active management'' and carry the hazardous waste code designation. For the K181 listing, however, the only excavated wastes that could carry the K181 designation would be wastes that meet or exceed the mass loadings of any of the specified constituents. Furthermore, if the excavated waste is disposed in a suitable landfill that is subject to or

[32] Association of State and Territorial Solid Waste Management Officials (''ASTSWMO''), *Non-Municipal, Subtitle D Waste Survey.*

[33] EPA's Office of Water examined the need for national effluent limitations guidelines and pretreatment standards for wastewater discharges (including leachate) from certain types of landfills (see proposed rule at 63 FR 6426, February 6, 1998). EPA decided such standards were not required and did not issue pretreatment standards for Subtitle D landfill wastewaters sent to POTWs (see 65 FR 3008, January 19, 2000).

meets the specified design criteria, or treated by combustion as specified in the listing description, then the waste would be exempt from the listing.

D. What Are the Final Treatment Standards Under RCRA's Land Disposal Restrictions for the Newly-Listed Hazardous Wastes?

1. What are EPA's Land Disposal Restrictions (LDRs)?

The RCRA statute requires EPA to establish treatment standards for all wastes destined for land disposal. These are the so called ''land disposal restrictions'' or LDRs. For any hazardous waste identified or listed after November 8, 1984, EPA must promulgate LDR treatment standards within six months of the date of identification or final listing (RCRA section 3004(g)(4), 42 U.S.C. 6924(g)(4)). RCRA also requires EPA to set as these treatment standards ''* * * levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' RCRA section 3004(m)(1), 42 U.S.C. 6924(m)(1). Once a hazardous waste is prohibited, the statute provides only two options for legal land disposal: Meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that satisfies the statutory no migration test. A no migration unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. RCRA sections 3004 (d), (e), (f), and (g)(5).

We are finalizing the prohibitions and treatment standards for the K181 wastes which we are listing as hazardous. The date of the prohibition and treatment standard is August 23, 2005.

2. How Does EPA Develop LDR Treatment Standards?

In an effort to make treatment standards as uniform as possible, while adhering to the fundamental requirement that the standards must minimize threats to human health and the environment, EPA developed the so called Universal Treatment Standards (codified at 40 CFR 268.48). Under the UTS, whenever technically and legally possible, the Agency adopts the same technology-based numerical limit for a hazardous constituent, regardless of the type of hazardous waste in which the constituent is present. See 63 FR 28560 (May 26, 1998); 59 FR 47982 (September 19, 1994). The UTS, in turn, reflects the performance of Best Demonstrated Available Treatment (BDAT) technologies of the constituents in question. EPA is also authorized in section 3004(m) to establish methods of treatment as a treatment standard. Doing so involves specifying an actual method by which the waste must be treated (unless a variance or determination of equivalency is obtained). Given this constraint, EPA prefers to establish numerical treatment standards, which leaves the option of using any method of treatment (other than impermissible dilution) to achieve the treatment standard.

EPA also finds that the treatment standards established in today's rule are not established below levels at which threats to human health and the environment are minimized. See Hazardous Waste Treatment Council v. EPA, 886 F. 2d 355, 362 (D.C. Cir. 1990). That case held that the statute can be read to allow either technology-based or risk-based standards, and further held that technology-based LDR treatment standards are permissible so long as they are not established ''beyond the point at which there is no 'threat' to human health or the environment.'' Id. at 362. EPA's finding that today's standards are not below a ''minimize threat'' level is based on the Agency's inability at the present time to establish concentration levels for hazardous constituents which represent levels at which threats to human health and the environment are minimized. See 63 FR at 28560 (May 26, 1998) explaining at greater length why these difficulties remain. Thus, the Agency continues to find that technology-based standards remain the best approach for the national treatment standards for these wastes since such standards eliminate as much of the inherent uncertainty of hazardous waste land disposal and so fulfill the Congressional intent in promulgating the land disposal restrictions provisions. 55 FR at 6642 (Feb. 26, 1990).

3. What Are the Treatment Standards for K181?

Of the seven CoCs that form the basis of the final listing, two of them—aniline and 4-chloroaniline—have an existing UTS. For two of the other CoCs—o-anisidine, p-cresidine—there is adequate documentation in existing SW–846 methods 8270, 8315, and 8325 to calculate numerical standards. Finally, for two other constituents—2,4-dimethylaniline and 1,3-phenylenediamine—we are transferring the numerical standards of similar constituents as the universal treatment standards.

In the proposal, we had stated that if the numerical standards for these constituents were shown in comments not to be achievable or otherwise appropriate, we might adopt methods of treatment as the exclusive treatment standard. We did not receive any such comments suggesting that these numerical standards were not achievable or otherwise appropriate. Therefore, we are finalizing the proposed numerical treatment standards for these six CoCs.

For the remaining constituent of concern, 1,2-phenylenediamine, we stated in the proposed rule that in past method performance evaluations, we have found it difficult to achieve reliable recovery from aqueous matrixes and precise measurements. Therefore, we proposed technology-specific LDR treatment standards for this constituent. We also noted that if commenters submitted data adequate for us to develop a numerical standard, then we might promulgate a numerical standard in addition to, or in lieu of, the technology standard.

Because we did not receive data on 1,2-phenylenediamine, we are maintaining the technology-specific standard as the LDR treatment standard, with one change. We are expanding the treatment options for K181 nonwastewaters to include, in addition to combustion (CMBST), a treatment train of chemical oxidation (CHOXD) followed by BIODG (biodegradation) or CARBN (carbon adsorption) and a treatment train of BIODG followed by CARBN. We are making this change based on a comment we received on the proposed rule. The commenter asserted that the proposed LDR standard of CMBST has the potential to significantly disrupt the company's on-site biosolids disposal. More specifically, because of the mixture and derived-from rule, if the facility were to accept into its wastewater treatment facility wastes that meet the nonwastewater definition of K181, and it contains 1,2-phenylenediamine, the biosolids resulting from treatment would have to be combusted.

In the above scenario, we do not believe it makes sense to establish a treatment standard that would require the wastewater treatment biosolids to be combusted. As the commenter points out, and with which we agree, if a facility were to introduce a nonwastewater into its wastewater treatment system, the nonwastewater would immediately become a wastewater (by LDR definition) and would be amenable to treatment by a wastewater treatment system. Therefore, we are adding to the LDR treatment

standard for 1,2-phenylenediamine a treatment train of CHOXD followed by BIODG or CARBN and a treatment train of BIODG followed by CARBN. Note that the treatment standard for K181 wastes containing 1,2-phenylenediamine now is identical for wastewaters and nonwastewaters. We have revised the BDAT Background Document to reflect this change and placed it in the docket for today's rule.

The following table summarizes the final treatment standards for the constituents of concern.

TABLE IV–I.—TREATMENT STANDARDS FOR CONSTITUENTS IN K181

Constituents of concern	CAS No.	Wastewater (mg/L)	Nonwastewater (mg/kg)
Aniline	62–53–3	0.81	14
o-Anisidine (2-methoxyaniline)	90–04–0	0.010	0.66
4-Chloroaniline	106–47–8	0.46	16
p-Cresidine	120–71–8	0.010	0.66
2,4-Dimethylaniline (2,4-xylidine)	95–68–1	0.010	0.66
1,2-Phenylenediamine	95–54–5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN
1,3-Phenylenediamine	108–45–2	0.010	0.66

Note: "fb" means "followed by."

In this final rule, we are also finalizing the following provisions, all of which are consistent with the proposed rule. See the Response to Comments Background Document for other LDR-specific issues raised in comments.

—We are adding the CoCs in K181 with numerical treatment standards to the Universal Treatment Standards listed at 40 CFR 268.48, which results in the addition of four new chemicals to the list: o-anisidine, p-cresidine, 2,4-dimethylaniline, and 1,3-phenylenediamine. Adding these constituents to the UTS list will ensure that, if they are present in a characteristic waste, they will be treated prior to land disposal, which in turn will minimize any risks they present to human health and the environment. (**Note:** Because toluene-2,4-diamine is not being included as a constituent of concern for this waste, it will no longer be added to the UTS list at 40 CFR 268.48.)

—We are adding to F039 those constituents identified in K181 not already specified in F039 (the same constituents named above for addition to the UTS list). F039 applies to landfill leachates generated from multiple listed wastes in lieu of the original waste codes. F039 wastes are subject to numerical treatment standards equivalent to the universal treatment standards listed at 40 CFR 268.48. Making this change ensures F039 landfill leachates receive proper treatment for the CoCs in K181.

—For debris contaminated with K181 waste, the provisions in § 268.45 apply. This means debris contaminated with K181 would be required to be treated prior to land disposal, using specific technologies from one or more of the following families of debris treatment technologies: extraction, destruction, or immobilization. If such debris is treated by immobilization, it remains a hazardous waste and must be managed in a hazardous waste facility. Residuals generated from the treatment of debris contaminated with K181 would remain subject to the treatment standards being finalized today.

—We are prohibiting K181 wastes from underground injection. Therefore, K181 wastes may not be injected underground, unless they meet the LDR treatment standards or are injected into a Class 1 well from which it has been determined that there will be no migration of hazardous constituents for as long as the wastes remain hazardous.

E. Is There Treatment Capacity for the Newly Listed Wastes?

1. Introduction

Under the land disposal restrictions (LDR) determinations, the Agency must demonstrate that adequate commercial capacity exists to manage listed hazardous wastes in compliance with the LDR treatment standards before the Agency can restrict the listed waste from further land disposal. The Agency performs capacity analyses to determine the effective date of the LDR treatment standards for the proposed listed wastes. This section summarizes the results of EPA's capacity analysis for the wastes covered by today's rule. For a detailed discussion of capacity analysis-related data sources, methodology, and analysis results for the wastes covered in this rule, see ''Background Document for Capacity Analysis for Land Disposal Restrictions: Newly Identified Dye and Pigment Manufacturing Wastes (Final Rule), February 2005'' (*i.e.*, the Capacity Background Document), available in the RCRA docket established for today's final rule.

EPA's decisions on whether to grant a national capacity variance are based on the availability of alternative treatment or recovery technologies capable of achieving the prescribed treatment standards. Consequently, the methodology focuses on deriving estimates of the quantities of newly-listed hazardous waste that will require either commercial treatment or the construction of new onsite treatment or recovery technology as a result of the LDRs. The resulting estimates of required commercial capacity are then compared to estimates of available commercial capacity. If adequate commercial capacity exists, the waste is prohibited from further land disposal, unless it meets the LDR treatment standards prior to disposal. If adequate capacity does not exist, RCRA Section 3004(h)(2) authorizes EPA to grant a national capacity variance for the waste for up to two years or until adequate alternative treatment capacity becomes available, whichever is sooner.

2. What Are the Capacity Analysis Results for K181?

In the proposed rule, EPA estimated nonwastewater quantities applying engineering estimates of wastewater treatment sludge generation rates and, wherever possible, using information provided in non-CBI portions of the RCRA section 3007 surveys and public comments in response to the 1994 and 1999 proposed rules for dyes and pigments production wastes. EPA received comments in response to the November 25, 2003 proposed rule (68 FR 66164), which stated that the Agency overestimated the amount of

nonwastewaters generated by the dyes and pigments production industry. We reviewed the information submitted by commenters on waste characteristics, quantities, and management practices. EPA found some data discrepancies and deficiencies that limit the use of the submitted data (*see* discussion on waste quantities in section IV.A.5). However, we believe the additional data from the commenters provide useful information on the likely waste quantities generated. Therefore, we have analyzed the commenters' data and revised our estimated waste quantities affected by this rule. We recognize that the actual quantity of waste requiring commercial treatment will probably be smaller due to waste-specific assessments of actual K181 CoC loadings, use of the contingent management exemptions, facility closures, changes in product formulations, or waste management practices. We also recognize the batch process nature of this industry and the speed at which facilities may change product formulations. Even relying on the larger quantities estimated for the proposed rule, we find more than adequate waste management capacity exists to accommodate wastes that would be treated or disposed as a result of today's rule.

As described in section IV.D.3 above, EPA is finalizing numerical treatment standards or methods of treatment as the treatment standards for the CoCs of the newly listed K181 waste. We expect that the CoCs in the nonwastewater or wastewater (if K181-derived wastewater is generated) forms of K181 are amenable to the treatment by combustion or other technologies in a treatment train. EPA estimates that, at most, approximately 36,000 metric tons per year of nonwastewater forms of K181 may require alternative commercial treatment and be managed off site at a commercial hazardous waste treatment facility. Furthermore, EPA anticipates that much less than 36,000 metric tons per year of the wastes may require combustion capacity because not all of these wastes are expected to exceed the mass loading limits. Furthermore, these wastes would not be hazardous if the nonwastewaters are disposed in a landfill unit that meets liner design criteria specified in the listing description, or are treated in certain combustion units. Therefore, these wastes will not require treatment to meet LDR treatment standards. In any case, we estimate that the commercially available combustion capacity for sludge, solid, and mixed media/debris/devices is approximately 0.5 million tons per year and, therefore, sufficient to treat the newly listed waste which may require treatment. We also expect that adequate landfill capacity exists for managing residuals from treating these wastes. Also, there is adequate wastewater treatment capacity available should the need for treatment of the wastewater form of K181 wastes arise. In addition, we are not listing wastewaters generated at these facilities, so there is no need for additional treatment of wastewater from the production of dyes and/or pigments (other than K181-derived wastewaters). No commenters challenged either the variance determination or available treatment or disposal capacity for nonwastewater or wastewater forms of K181 wastes. Therefore, we conclude that sufficient treatment or disposal capacity is available to manage newly-listed K181 wastes.

As discussed in section IV.D, we are also finalizing the addition of the CoCs in K181 with numerical standards to the constituent listed in F039 and the universal treatment standards. EPA does not anticipate that waste volumes subject to the treatment standards for F039 or characteristic wastes would increase because of the addition of these organic constituents to F039 and the UTS lists. Based on available data, waste generators already appear to be required to comply with the treatment requirements for other organic constituents in F039 and characteristic wastes. We received no comments, data, or information to warrant any change of this conclusion. Therefore, we expect that additional treatment due to the addition of the constituents to the F039 and UTS lists will not be required. When changing the treatment requirements for wastes already subject to LDR (including F039 wastes), EPA no longer has authority to use RCRA § 3004(h)(2) to grant a capacity variance to these wastes. However, EPA is guided by the overall objective of section 3004(h), namely that treatment standards which best accomplish the goal of RCRA § 3004(m) (to minimize threats posed by land disposal) should take effect as soon as possible, consistent with availability of treatment capacity.

For soil and debris contaminated with K181, as indicated in the proposed rule, we believe that the vast majority of contaminated soil and debris, if any, will be managed on site and, therefore, would not require substantial commercial treatment capacity. Thus, we proposed not to grant a national capacity variance for hazardous soil and debris contaminated with this newly listed waste. EPA received no comments regarding this issue. There also were no data showing mixed radioactive wastes or underground injected wastes associated with the newly listed K181 based on the public information used in the proposed rule. Thus, we also proposed not to grant a national capacity variance for mixed radioactive waste (*i.e.*, radioactive wastes mixed with K181) or waste being injected underground. EPA did not receive comments indicating that the newly listed wastes are underground injected or that they are mixed with radioactive wastes or with both radioactive wastes and soil or debris.

Therefore, EPA is finalizing its decision not to grant a national capacity variance for wastewater and nonwastewater forms of K181 wastes. We also are finalizing our decision not to grant a national capacity variance for hazardous soil and debris contaminated with the newly listed wastes, radioactive wastes mixed with K181 or contaminated soil or debris of K181, or K181 wastes being injected underground. The customary time period of six months is sufficient to allow facilities to determine whether their wastes are affected by this rule, to identify onsite or commercial treatment and disposal options, and to arrange for treatment or disposal capacity, if necessary. Therefore, LDR treatment standards for the affected wastes covered under today's rule become effective when the listing determinations become effective—the earliest possible date. This conforms to RCRA § 3004(h)(1), which indicates that land disposal prohibitions must take effect immediately when there is sufficient protective treatment capacity available for the waste.

Finally, EPA may consider a case-by-case extension to the effective date based on the requirements outlined in 40 CFR 268.5, which includes a demonstration that adequate alternative treatment, recovery, or disposal capacity for the petitioner's waste cannot reasonably be made available by the effective date due to circumstances beyond the applicants' control, and that the petitioner has entered into a binding contractual commitment to construct or otherwise provide such capacity.

V. When Must Regulated Entities Comply With the Provisions in Today's Final Rule?

A. Effective Date

The effective date of today's rule is August 23, 2005. These provisions, promulgated under HSWA authorities, will take effect in both the federal regulations and authorized state programs at that time.

B. Section 3010 Notification

Under RCRA § 3010, the Administrator may require all persons who handle hazardous wastes to notify EPA of their hazardous waste management activities within 90 days after the wastes are identified or listed as hazardous. This requirement may be applied even to those generators, transporters, and treatment, storage, and disposal facilities (TSDFs) that have previously notified EPA with respect to the management of other hazardous wastes. The Agency has decided to waive this notification requirement for persons who handle wastes that are covered by today's hazardous waste listing and already have (1) notified EPA that they manage other hazardous wastes, and (2) received an EPA identification number. The Agency has waived the notification requirement in this case because it believes that most, if not all, persons who manage the wastes listed as hazardous in today's rule already have notified the Agency and received an EPA identification number. However, any person who generates, transports, treats, stores, or disposes of this newly listed waste and has not previously received an EPA identification number must obtain an identification number pursuant to 40 CFR 262.12 to generate, transport, treat, store, or dispose of these hazardous wastes by May 25, 2005, for K181.

Note that nonwastewaters would not become newly listed K181 wastes if the constituent mass loadings do not meet the levels in § 261.32(c). If the wastes meet or exceed the mass loading limits, the wastes would also not be listed K181, provided the nonwastewaters are disposed in a landfill unit or treated in combustion unit as specified in the listing description. Persons who generate only wastes that meet one of these conditions need not notify EPA or obtain an identification number, because the waste would not be K181.

C. Generators and Transporters

Persons who generate newly identified hazardous wastes may be required to obtain an EPA identification number if they do not already have one (as discussed in section V.B above). If person(s) generate these wastes after the effective date of this rule, they will be subject to the generator requirements set forth in 40 CFR part 262. These requirements include standards for hazardous waste determination (40 CFR 262.11), compliance with the manifest (40 CFR 262.20 through 262.23), pre-transport procedures (40 CFR 262.30 through 262.34), generator accumulation (40 CFR 262.34), record keeping and reporting (40 CFR 262.40 to 262.44), and import/export procedures (40 CFR 262.50 through 262.60). The generator accumulation provisions of 40 CFR 262.34 allow generators to accumulate hazardous wastes without obtaining interim status or a permit only in certain specified units (container storage units, tank systems, drip pads, or containment buildings). These regulations also place a limit on the maximum amount of time that wastes can be accumulated in these units. If K181 wastes are managed in units that are not tank systems, containers, drip pads, or containment buildings as described in 40 CFR 262.34, accumulation of these wastes is subject to the requirements of 40 CFR parts 264 and 265, and the generator is required to obtain interim status and seek a permit (or modify interim status or a permit, as appropriate). Also, persons who transport newly identified hazardous wastes will be required to obtain an EPA identification number (if they do not already have one) as described above and will be subject to the transporter requirements set forth in 40 CFR part 263.

Nonwastewaters that do not meet the mass loading levels in § 261.32(c) are not listed K181. Furthermore, in cases where the wastes meet or exceed the mass loading limits, the wastes would also not be listed K181, provided the nonwastewaters are disposed in a landfill unit or treated in a combustion unit as specified in the listing description. Therefore, persons who generate or transport wastes that meet either of these conditions are not subject to the regulations governing hazardous waste generation and transport in part 262 and 263.

D. Facilities Subject to Permitting

The listing for dyes and/or pigment wastes, K181, in today's rule is issued pursuant to HSWA authority. Therefore, EPA will regulate the management of the newly listed hazardous waste until states are authorized to regulate these wastes.

1. Facilities Newly Subject to RCRA Permit Requirements

Facilities that treat, store, or dispose of K181 wastes that are subject to RCRA regulation for the first time by this rule (that is, facilities that have not previously received a permit pursuant to section 3005 of RCRA and are not currently operating pursuant to interim status), might be eligible for interim status (see section 3005(e)(1)(A)(ii) of RCRA). To obtain interim status based on treatment, storage, or disposal of such newly identified wastes, eligible facilities are required to comply with 40 CFR 270.70(a) and 270.10(e) by providing notice under section 3010 and submitting a Part A permit application no later than August 23, 2005. Such facilities are subject to regulation under 40 CFR part 265 until a permit is issued.

In addition, under section 3005(e)(3) and 40 CFR 270.73(d), not later than August 24, 2006, land disposal facilities newly qualifying for interim status under section 3005(e)(1)(A)(ii) also must submit a part B permit application and certify that the facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements. If the facility fails to submit these certifications and a permit application, interim status will terminate on that date.

2. Existing Interim Status Facilities

Pursuant to 40 CFR 270.72(a)(1), all existing hazardous waste management facilities (as defined in 40 CFR 270.2) that treat, store, or dispose of the newly listed K181 wastes and are currently operating pursuant to interim status under section 3005(e) of RCRA, must file an amended part A permit application with EPA no later than the effective date of today's rule, (*i.e.*, August 23, 2005). By doing this, the facility may continue managing the newly listed wastes, pending final disposition of the permit application. If the facility fails to file an amended part A application by that date, the facility will not receive interim status for management of the newly listed hazardous wastes and may not manage those wastes until the facility receives either a permit or a change in interim status allowing such activity (40 CFR 270.10(g)).

3. Permitted Facilities

Facilities that already have RCRA permits must request permit modifications if they want to continue managing newly listed K181 wastes (*see* 40 CFR 270.42(g)). This provision states that a permittee may continue managing the newly listed waste by following certain requirements, including submitting a Class 1 permit modification request by the date on which the waste or unit becomes subject to the new regulatory requirements (*i.e.*, the effective date of today's rule), complying with the applicable standards of 40 CFR parts 265 and 266 and submitting a Class 2 or 3 permit modification request within 180 days of the effective date.

Generally, a Class 2 modification is appropriate if the newly listed wastes will be managed in existing permitted units or in newly regulated tanks, container units, or containment

buildings, and will not require additional or different management practices than those authorized in the permit. A Class 2 modification requires the facility owner to provide public notice of the modification request, a 60-day public comment period, and an informal meeting between the owner and the public within the 60-day period. The Class 2 process includes a ''default provision,'' which provides that if the Agency does not reach a decision within 120 days, the modification is automatically authorized for 180 days. If the Agency does not reach a decision by the end of that period, the modification is authorized for the life of the permit (*see* 40 CFR 270.42(b)).

A Class 3 modification is generally appropriate if management of the newly listed wastes requires additional or different management practices than those authorized in the permit or if newly regulated land-based units are involved. The initial public notification and public meeting requirements are the same as for Class 2 modifications. However, after the end of the 60-day public comment period, the Agency will grant or deny the permit modification request according to the more extensive procedures of 40 CFR Part 124. There is no default provision for Class 3 modifications (*see* 40 CFR 270.42(c)).

Under 40 CFR 270.42(g)(1)(v), for newly regulated land disposal units, permitted facilities must certify that the facility is in compliance with all applicable 40 CFR part 265 groundwater monitoring and financial responsibility requirements no later than August 24, 2006. If the facility fails to submit these certifications, authority to manage the newly listed wastes under 40 CFR 270.42(g) will terminate on that date.

4. Units

Units in which newly listed hazardous wastes are generated or managed will be subject to all applicable requirements of 40 CFR part 264 for permitted facilities or 40 CFR part 265 for interim status facilities, unless the unit is excluded from such permitting by other provisions, such as the wastewater treatment tank exclusion (40 CFR 264.1(g)(6) and 265.1(c)(10)) and the product storage tank exclusion (40 CFR 261.4(c)). Examples of units to which these exclusions could never apply include landfills, land treatment units, waste piles, incinerators, and any other miscellaneous units in which these wastes may be generated or managed.

5. Closure

All units in which newly listed hazardous wastes are treated, stored, or disposed after the effective date of this regulation that are not excluded from the requirements of 40 CFR parts 264 and 265 are subject to both the general closure and post-closure requirements of subpart G of 40 CFR 264 and 265 and the unit-specific closure requirements set forth in the applicable unit technical standards subpart of 40 CFR part 264 or 265 (*e.g.*, Subpart N for landfill units). In addition, EPA promulgated a final rule that allows, under limited circumstances, regulated landfills, surface impoundments, or land treatment units to cease managing hazardous waste, but to delay subtitle C closure to allow the unit to continue to manage nonhazardous waste for a period of time prior to closure of the unit (*see* 54 FR 33376, August 14, 1989). Units for which closure is delayed continue to be subject to all applicable 40 CFR parts 264 and 265 requirements. Dates and procedures for submittal of necessary demonstrations, permit applications, and revised applications are detailed in 40 CFR 264.113(c) through (e) and 265.113(c) through (e).

VI. State Authority and Compliance

A. How Are States Authorized Under RCRA?

Under section 3006 of RCRA, EPA may authorize qualified States to administer their own hazardous waste programs in lieu of the federal program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized states have primary enforcement responsibility. The standards and requirements for State authorization are found at 40 CFR part 271.

Prior to enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its hazardous waste program entirely in lieu of EPA administering the federal program in that State. The federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in that state, since only the state was authorized to issue RCRA permits. When new, more stringent federal requirements were promulgated, the State was obligated to enact equivalent authorities within specified time frames. However, the new federal requirements did not take effect in an authorized State until the State adopted the federal requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), which was added by HSWA, new requirements and prohibitions imposed under HSWA authority take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed by the statute to implement these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, EPA implements the HSWA provisions in authorized States until the States do so.

Authorized States are required to modify their programs only when EPA enacts federal requirements that are more stringent or broader in scope than existing federal requirements. RCRA section 3009 allows the States to impose standards more stringent than those in the federal program (see also 40 CFR 271.1). Therefore, authorized States may, but are not required to, adopt federal regulations, both HSWA and non-HSWA, that are considered less stringent than previous federal regulations.

B. How Does This Rule Affect State Authorization?

We are finalizing today's rule pursuant to HSWA authority. The listing of the new K-waste is promulgated pursuant to RCRA section 3001(e)(2), a HSWA provision. Therefore, we are adding this rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of their authorization status. The land disposal restrictions for these wastes are promulgated pursuant to RCRA section 3004(g) and (m), also HSWA provisions. Table 2 in 40 CFR 271.1(j) is modified to indicate that these requirements are self-implementing.

States may apply for final authorization for the HSWA provisions in 40 CFR 271.1(j), as discussed below. Until the States receive authorization for these more stringent HSWA provisions, EPA would implement them. The procedures and schedule for final authorization of State program modifications are described in 40 CFR 271.21.

Section 271.21(e)(2) of EPA's State authorization regulations (40 CFR part 271) requires that States with final authorization modify their programs to reflect Federal program changes and submit the modifications to EPA for approval. The deadline by which the States would need to modify their programs to adopt this regulation is determined by the date of promulgation of a final rule in accordance with

§ 271.21(e)(2). Once EPA approves the modification, the State requirements would become RCRA Subtitle C requirements.

States with authorized RCRA programs already may have regulations similar to those in this final rule. These State regulations have not been assessed against the Federal regulations finalized today to determine whether they meet the tests for authorization. Thus, a State would not be authorized to implement these regulations as RCRA requirements until State program modifications are submitted to EPA and approved, pursuant to 40 CFR 271.21. Of course, States with existing regulations that are more stringent than or broader in scope than current Federal regulations may continue to administer and enforce their regulations as a matter of State law. In implementing the HSWA requirements, EPA will work with the States under agreements to avoid duplication of effort.

VII. CERCLA Designation and Reportable Quantities

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980) defines the term ''hazardous substance'' to include RCRA listed and characteristic hazardous wastes. When EPA adds a hazardous waste under RCRA, the Agency also will add the waste to its list of CERCLA hazardous substances. EPA establishes a reportable quantity, or RQ, for each CERCLA hazardous substance. EPA provides a list of the CERCLA hazardous substances along with their RQs in Table 302.4 at 40 CFR 302.4. If you are the person in charge of a vessel or facility that releases a CERCLA hazardous substance in an amount that equals or exceeds its RQ, then you must report that release to the National Response Center (NRC) pursuant to CERCLA section 103. You also may have to notify State and local authorities.

A. How Does EPA Determine Reportable Quantities?

Under CERCLA section 102(b)(1), hazardous substances are assigned a reportable quantity of one pound, unless and until EPA changes the RQ by regulation. EPA has wide discretion to adjust the RQ of the hazardous substance(s). The Agency's methodology involves an evaluation of the intrinsic physical, chemical, and toxic properties. The intrinsic properties, called ''primary criteria,'' are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity, and potential carcinogenicity. EPA evaluates the data for a hazardous substance for each primary criterion. To adjust the RQs, EPA ranks each criterion on a scale that corresponds to an RQ value of 1, 10, 100, 1,000, or 5,000 pounds. For hazardous substances evaluated for potential carcinogenicity, each substance is assigned a hazard ranking of ''high,'' ''medium,'' or ''low,'' corresponding to RQ levels of 1, 10, and 100 pounds, respectively. For each criterion, EPA establishes a tentative RQ. A hazardous substance may receive several tentative RQ values based on its particular intrinsic properties. The lowest of the tentative RQs becomes the ''primary criteria RQ'' for that substance.

After the primary criteria RQs are assigned, EPA further evaluates substances for their susceptibility to certain degradative processes. These are secondary adjustment criteria. The natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). If a hazardous substance, when released into the environment, degrades rapidly to a less hazardous form by one or more of the BHP processes, EPA generally raises its RQ (as determined by the primary RQ adjustment criteria) by one level. Conversely, if a hazardous substance degrades to a more hazardous product after its release, EPA assigns an RQ to the original substance equal to the RQ for the more hazardous substance.

The standard methodology used to adjust the RQs for RCRA hazardous waste streams differs from the methodology applied to individual hazardous substances. The procedure for assigning RQs to RCRA waste streams is based on the results of an analysis of the hazardous constituents of the waste streams. The constituents of each RCRA hazardous waste stream are identified in 40 CFR part 261, Appendix VII. EPA first determines an RQ for each hazardous constituent within the waste stream using the methodology described above. The lowest RQ value of these constituents becomes the adjusted RQ for the waste stream. When there are hazardous constituents of a RCRA hazardous waste stream that are not CERCLA hazardous substances, the Agency develops an RQ, called a ''reference RQ,'' for these constituents in order to assign an appropriate RQ to the waste stream (see 48 FR 23565, May 25, 1983). In other words, the Agency derives the RQ for waste streams based on the lowest RQ of all the hazardous constituents, regardless of whether they are CERCLA hazardous substances.

B. What Is the RQ for the K181 Waste?

In today's final rule, EPA is assigning a one-pound RQ to the K181 waste. The RQ for each constituent contained in the waste is presented in the table below.

TABLE VIII–1.—RQS FOR CONSTITUENTS IDENTIFIED IN K181 WASTE

Constituents in K181 waste stream	Constituent RQ (kg) (40 CFR 302.4)
Aniline	5000 (2270)
o-Anisidine	100 (45.4)
4-Chloroaniline	1000 (454)
p-Cresidine	1* (0.454)
2,4-Dimethylaniline	1* (0.454)
1,2-Phenylenediamine	1* (0.454)
1,3-Phenylenediamine	1* (0.454)

*RQ of 1 pound assigned to this constituent because we have not yet developed a ''waste constituent RQ'' for this substance.

As noted in the proposed rule (68 FR 66213), we are not adjusting the RQ for K181 at this time because we have not yet developed a ''reference RQ'' for the following CoCs in this waste: p-cresidine; 2,4-dimethylaniline; 1,2-phenylenediamine; and 1,3-phenylenediamine. Therefore, the RQ for K181 will be one pound. As noted elsewhere in this notice, we have dropped toluene-2,4-diamine as a constituent of concern for K181. While this chemical has an existing RQ, EPA does not expect that its RQ will be considered should the Agency decide to propose any further adjustment to the RQ for K181 wastes.

Note, however, that all quantities of wastes generated during a calendar year up to the mass loading limits are not listed K181 waste; only wastes subsequently generated that meet or exceed the annual limits would be hazardous waste. Wastes that are below the mass loading limits are excluded from the listing from their point of generation, and would not be subject to the CERCLA reporting requirements.

Commenters urged EPA not to adopt the statutory RQ, but rather to adjust the RQ for K181 waste. They noted that EPA's risk analysis for the proposal indicates that a higher RQ is warranted. Commenters stated that it is counterintuitive for a company to be able to dispose of tons of dyes and/or pigment production wastes as nonhazardous in a landfill, yet have to report a release of just one pound of K181 waste to the environment. They noted that EPA conceded that it would be unreasonable to expect the CoCs to be present at concentrations higher than 5,000 parts per million.

While we agree with the commenters that an adjustment of the RQ may be

warranted based on the mass loading limits and the landfill disposal exclusion established in the final rule, until we develop waste constituent RQs for p-cresidine; 2,4-dimethylaniline; 1,2-phenylenediamine; and 1,3-phenylenediamine the RQ for K181 will remain at the statutory one-pound level. We will consider adjusting the RQ for K181 after we develop these constituent RQs; however, the RQ for K181 will remain one pound until such an adjustment is made.

C. When Would I Need To Report a Release of These Wastes Under CERCLA?

Today's final hazardous waste listing is based on the mass loadings of the hazardous constituents in the wastes. An RQ of one-pound is assigned for the waste based on the lowest RQ of the hazardous constituents in the waste. Notification is required under CERCLA when a waste meeting the listing description and threshold for that hazardous waste is released into the environment in a quantity that equals or exceeds the RQ for the waste.

For CERCLA reporting purposes, the Clean Water Act mixture rule (40 CFR 302.6) may be adapted to apply to releases of this waste when the quantity (or mass limit) of all of the K181 hazardous constituents in the waste are known and the waste meets the K181 listing description (*i.e.*, any of the K181 mass loading levels are met or exceeded). In such a case, notification is required where an amount of waste is released that contains an RQ or more of any hazardous substance contained in the waste. When the quantity (or mass limit) of one or more of the K181 hazardous constituents is not known, notification is required when the quantity of K181 waste released equals or exceeds the RQ for the waste stream.

D. How Would I Report a Release?

To report a release of K181 (or any other CERCLA hazardous substance) that equals or exceeds its RQ, you must immediately notify the National Response Center (NRC) as soon as you have knowledge of that release. The toll-free telephone number of the NRC is 1–800–424–8802; in the Washington, DC, metropolitan area, the number is (202) 267–2675.

You may also need to notify State and local authorities. The Emergency Planning and Community Right-to-Know Act (EPCRA) requires that owners and operators of certain facilities report releases of CERCLA hazardous substances and EPCRA extremely hazardous substances (*see* the list in 40 CFR part 355, Appendix A) to State and local authorities. After the release of an RQ or more of any of those substances, you must report immediately to the community emergency coordinator of the local emergency planning committee for any area likely to be affected by the release, and to the State emergency response commission of any State likely to be affected by the release.

VIII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 [58 FR 51735 (October 4, 1993)], the Agency, in conjunction with the Office of Management and Budget (OMB), 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 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 this Executive Order, we have found that this final action does not represent an economically significant regulatory action, as defined under point number one above. The total nationwide costs associated with this final action are estimated to be less than $3 million per year. Furthermore, this final rule is not expected to adversely effect, 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. The annualized benefits associated with today's rule have not been monetized, but are believed to be less than $100 million. However, this final rule has been determined to potentially raise novel legal or policy issues due to the unique mass loading-based approach used in the risk assessment modeling. As a result, it has been determined that this rule is a ''significant regulatory action,'' as identified under point number four above. Therefore, this action was submitted to OMB for review. Any substantive changes made in response to OMB review have been documented in the public record. The following paragraphs briefly summarize findings presented in the Economic Assessment [34] conducted for the Proposed Rule, substantive economic related issues brought up in stakeholder comments and Agency responses, and revised findings in support of the final action.

1. Summary of Proposed Rule Findings: Costs, Economic Impacts, Benefits

The impacts of our proposed action were presented in two supporting documents: Economic Assessment for the Proposed Loadings-Based Listing of Non-Wastewaters from the Production of Selected Organic Dyes, Pigments, and Food, Drug, and Cosmetic Colorants, Final Report, November 2003, and Regulatory Flexibility Screening Analysis for the Proposed Loadings-Based Listing of Non-Wastewaters from the Production of Selected Organic Dyes, Pigments, and Food, Drug, and Cosmetic Colorants, Final Report, November 2003.

We identified a total of 37 facilities in the November 2003 Economic Assessment that were expected to be impacted by the proposed action. These facilities were found to be operated by 29 different companies. Of these companies, 15 were categorized as ''small businesses'' under the Small Business Administration size definition.[35] We estimated the total quantity of potentially affected waste to range from 44,215 to 68,368 metric tons per year. Aggregate nationwide compliance costs were estimated to range from $0.6 million/year to $4.3 million/year, depending upon assumptions regarding total waste quantity affected and presence of targeted constituents. Corporate level economic impacts were negligible, ranging from virtually zero to 0.52 percent of gross annual revenues. We determined that there were no significant economic impacts on any small entities.

Benefits of the proposed action were presented in a general qualitative assessment. Types of benefits included the potential for reduced or avoided human health damage cases, avoided or

[34] Economic Assessment for the Proposed Loadings-Based Listing of Non-wastewaters from the Production of Selected Organic Dyes, Pigments, and Food, Drug, and Cosmetic Colorants, Final Report, November 2003.

[35] Less than 750 total employees at the corporate level.

reduced acute events, avoided or reduced resource damage, and avoided or reduced response costs. Depending upon actual or future exposure patterns, the primary benefits identified in the preamble to the proposed rule were associated reductions in human health and environmental effects from targeted releases. Increased waste minimization practices were discussed as upstream benefits potentially stimulated by the proposed action.

2. Public Comments and Agency Responses

a. *Summary of Substantive Cost, Economic, and Benefits Issues, and Responses.* The Agency received 25 public comments on the proposed rule. Nearly all of these addressed some aspect related to cost of compliance, economic impacts, and/or benefit of the rule, as proposed. Related to these issues, there were four categories of crucial concern presented by the commenters: industry profile/characterization, waste quantities, analytical costs, and benefits (*i.e.*, need for the rule). A summary of these issues and the Agency's responses are presented below. Stakeholder comments are addressed in more detail in the Agency's response-to-comment document,[36] available in the docket established for today's action.

b. *Industry Profile/Characterization.* Numerous commenters indicated that the profiles presented in the Economic Assessment were overly optimistic concerning the projected growth and general health of the dyes and pigment industries. Additional plant closures were noted. In addition, several commenters noted that products affected by the proposed rulemaking, *e.g.*, azo dyes and pigments, tend to be experiencing lower growth rates and profitability margins than other product lines from the dyes and pigments industries.

Our determination of average annual growth and industry health, as presented in the November 2003 Economic Assessment, was based on the best publicly available information at the time. However, upon detailed review of the public comments, and review of public information sources available after proposal, we find that our assumption of revenues increasing by an average of 3 percent per year was overly optimistic. This may be especially true for dye manufacturers where production has been plagued by downward trends in the textile industry, coupled with pressure from inexpensive imports.[37] However, we have no reliable source of information that would indicate that product production quantities (as opposed to gross revenues) for affected dye manufacturers are substantially different from estimates presented in the Economic Assessment. Thus, we expect waste quantities generated from this production, and corresponding waste management costs to be relatively unaffected. As discussed in section VIII.A.2.c below (see also the July 21, 2004 Revised Impacts Assessment memo), we believe that our low-end estimate of waste quantity generated per year reflects a reasonable approximation of adjusted quantities based on comments. Thus, economic impacts estimated under this scenario may be considered a reasonable worst case estimate when unadjusted for revenue projections. We also developed economic impact estimates based on a linear reduction in compliance costs corresponding to adjusted waste quantities, and assuming gross revenues were 100 percent (2-fold) overstated. Economic impacts under this scenario were found to still be less than 1 percent of annual gross revenues (*see* section VIII.A.3; more details are provided in the July 21, 2004 Revised Impacts Assessment memo).

c. *Waste Quantities.* Commenters indicated that waste quantities presented in the November 2003 Economic Assessment were substantially overestimated. New information was provided regarding potentially affected quantities of nonwastewaters. Some of this information was facility-specific. Most information, however, was derived from association survey responses. These new survey data were linked to individual facilities by number only. None of the waste quantity information provided in comments was claimed as confidential business information.

The November 2003 Economic Assessment (EA) presented both high and low estimates for potentially affected nonwastewaters. We recognize that the total ''high estimate'' quantity, as presented in the EA represents an overestimation. However, our ''low estimate'' appears to represent a good approximation of total quantity, as compared to data presented by the commenters. This ''low estimate'' is approximately 22 percent greater than the total quantity derived from commenter data. The waste quantities presented in the EA were based only on information that was publically available at the time.

We accept, with modifications, the waste quantity information provided by the manufacturers/associations. Facility-specific quantities, where available by facility name, are generally accepted, as identified. For the other facilities, we have derived waste quantity estimates based on the survey response information correlated to facility revenue rankings. These derived waste quantities are based only on the publicly available data, and reflect our best attempt to assign the available quantity data from the comments with specific facilities (applying our revenue ranking estimates, as needed). Revised cost, economic impact, and benefit estimates have been developed based on this new waste quantity information (*see* below under Revised Findings).

d. *Analytical Costs.* Commenters expressed concern relating to some of our assumptions and determinations regarding analytical costs, especially as they related to waste characterization, process knowledge, and new method development. Commenters indicated a perceived need to take a large number of samples due to the batch operations. There was also concern that processor knowledge would have to be buttressed by at least limited sampling in order to have adequate proof that wastes generated were eligible for the exclusion. For wastes that are determined by the generator to be nonhazardous, commenters raised the concern that landfills may refuse the waste, or require certification to track the annual mass loadings. Commenters also raised technical issues relating to the development of analytical methods for sampling the CoCs to be added to 40 CFR Part 261 Appendix VIII. Specifically, there were concerns that the development of appropriate analytical methods would be more complex and costly than estimated in the proposal.

In the November 2003 Economic Assessment, we included sampling and analysis costs for facilities assumed to be generating greater than 1,000 metric tons of potentially impacted nonwastewaters per year. Facilities generating less than 1,000 metric tons/year were assumed to use operator knowledge. While the rule as proposed did not require any specific number of samples, sampling procedure, or analytical methods for waste characterization or determination of mass-loading limits, the Economic Assessment applied conservative assumptions for the development of cost estimates. We assumed 15 samples per

[36] Response to Comments Document: Hazardous Waste Listing Determination for Dyes and/or Pigments Manufacturing Wastes (Final Rule), February 2005.

[37] PR Newswire, 2004 (March 26), Synalloy Corporation Announces Fourth Quarter Results Financial Services News.

wastestream for initial characterization, and an additional five samples per year (including the first year) to assess stream fluctuations. Annual retesting is assumed to continue for three consecutive years to cover variations in processes and products. It was also assumed that the three-year time period would allow the generator to determine if any process fluctuations, waste changes, or minor process changes may alter the waste stream characterization from nonhazardous to hazardous.

We believe our assumptions for waste stream characterization and annual retesting reflect a very conservative cost scenario for facilities generating greater than 1,000 metric tons of potentially affected nonwastewaters per year. For facilities generating less than 1,000 metric tons, process knowledge may be used. Proper documentation of the process used to generate the waste (*e.g.*, raw materials, quantities, reactions, and typical constituent concentrations) is expected to be adequate to demonstrate full process knowledge. Facilities that are uncomfortable with this approach may choose to purchase insurance or implement a testing procedure. However, the Agency is not requiring such options.

We believe that the potential for landfills to require certification to track the annual mass loadings is highly unlikely (and was not raised in comments by any waste management firm), particularly in light of our modification of the proposal to remove the proposed (c)(2) requirements that would have prohibited subtitle D landfilling once a waste's mass loading of toluene-2,4-diamine exceeded the proposed (c)(2) limit. However, if for some reason a particular landfill were to reject the waste outright, other subtitle D landfills are prevalent. Additional costs from switching subtitle D landfills would be minimal due to the relatively high number of available subtitle D landfills within similar transportation distances.

For the development of analytical methods for sampling the CoCs to be added to 40 CFR part 261 Appendix VIII, we assumed that the industry would utilize common laboratories to share the costs for developing analytical procedures. All facilities are assumed to use one of three contracting analytical laboratories to perform the analyses. The development costs were spread across all dye and pigment manufactures generating more than 1,000 metric tons and selected ''expanded scope'' facilities known (at the time of the proposal) to generate waste with constituent(s) of concern. EPA identified three laboratories that would independently develop the analytical methods, for a total development cost of $61,171 ($20,390 per laboratory). A five-year capital recovery factor at 7 percent (0.24389) was applied to the development cost. Development costs were spread equally across all facilities generating waste with the CoCs.

The annual development cost per dye and pigment facility was estimated at $1,083 (assuming the waste must be sampled for all CoCs). In addition to this annual development cost, the analytical cost (assuming all eight proposed constituents) is estimated to be $1,089 per sample. Thus, assuming five samples per year, total annual costs would be $1,306 per sample [this is based on five samples at $1,089/sample, plus $1,083 passed through development costs, equals $6,530. Dividing this by five samples per year equals $1,306 per sample]. This total analytical cost per sample is within the range of $1,000 to $3,000 per sample, as identified by commenters. With the elimination of toluene-2,4-diamine from the list of CoCs, analytical method development costs will be lower because generators can avoid all testing requirements by certifying that their wastes are being managed in landfill units that meet the liner design requirements (or treated by combustion) as specified in the listing description. Furthermore, the method costs would also be reduced because we have modified the regulations to allow use of knowledge for the problematic analyte, 1,2-phenylenediamine.

Therefore, the Agency believes that the analytical costs and assumptions applied in our proposed action, as summarized above, represent a very conservative (high) cost estimate and will maintain these costs for estimating impacts associated with the final action. Today's final action does not require any specific number of samples, sampling type, or analytical methods. The actual number of samples necessary to appropriately represent the waste will be determined by the generator.

e. *Benefits.* Commenters expressed concern over the lack of concrete benefit estimates in support of the proposed rulemaking. Several commenters questioned the need for the regulation due to the lack of quantified and monetized benefits, resulting in a perceived unsubstantiated actual risk to humans or the environment from the existing management of these wastes. Commenters noted that the wastes of concern are currently managed in lined landfills with little or no risk documented by the risk assessment for this scenario. Commenters noted that there were few facilities that generate wastes with the CoCs, and that the only constituent of concern that resulted in substantial risk to human health and the environment under current management practices was toluene-2,4-diamine, which they argued should be (and has been) deleted. Furthermore, commenters believed that the overestimation of waste quantities, as discussed above, results in exaggerated benefits associated with compliance management.

The Agency believes that, to the extent that dye, pigment and FD&C colorant wastes are managed in landfills that do not meet the liner requirements in 40 CFR 258.40, 264.301, or 265.301, waste management practices have the potential to contaminate groundwater, resulting in greater risk to human health and the environment. To the extent that all wastes are managed in compliant landfills, there would be minimal benefit from the listing. However, the Agency is uncertain of industry claims that all wastes are so managed, nor is it clear that without the regulatory action, current waste management practices would not change to higher risk landfilling.

3. Revised Findings

We have revised our cost, economic impact, and benefits estimates for the final rule. These revisions are based on the new waste quantity information presented in public comments, and rule modifications. The scope and impacts of this final action do not warrant the completion of a full revised Economic Assessment and Regulatory Flexibility Screening Analysis (RFSA).

The total potentially affected nonwastewater quantity presented in the November 2003 Economic Assessment (EA) ranged from 44,215 metric tons/year to 68,368 metric tons/year. Aggregate annual compliance costs associated with these quantities ranged from $0.6 million/year to $4.3 million/year for the proposed regulatory approach (Economic Assessment, Table 5–1). Corresponding economic impacts were found to range from negligible to 0.52 percent, when measured as the ratio of compliance costs to gross corporate revenues (Economic Assessment, Table 5–7). Cost estimates associated only with the low waste quantity estimate (44,215 metric tons), ranged from $0.6 million/year to $2.9 million/year, with corresponding economic impacts ranging from negligible to 0.29 percent.

The revised total waste quantity, as derived from public comments, is estimated at 36,142 metric tons/year. The cost and economic impact findings

associated with our ''low estimate'' waste quantity (44,215 MT/yr), as presented above, may be considered a reasonable approximation of impacts associated with the final rule. However, more refined estimates may be developed assuming a linear relationship between total waste quantity and cost/economic impacts. Under this scenario, total costs and economic impacts would decline by approximately 18 percent, corresponding to the decline in total waste quantity (44,215 MT/yr to 36,142 MT/yr). Under this approach, the total compliance costs for the final rule would range from an estimated $0.49 million per year to $2.38 million/year, with economic impacts ranging from negligible to 0.238 percent of gross corporate revenues. These findings assume all other cost parameters are unchanged (*e.g.*, analytical assumptions, transportation costs, administrative). In reality, the more refined cost and economic impact estimates would be even lower due to the elimination of toluene-2,4-diamine as a CoC for the final rule and the likely use by industry of the conditional exemptions.

Some commenters have suggested that our estimated gross annual corporate revenue estimates may be overstated due to overly optimistic growth projections for the affected industries, as derived from some of our public sources. This issue pertains primarily to private or privately held companies where no independent revenue source was identified (see Economic Assessment, Table 5–3). An overestimate of gross revenues would be reflected in an artificially low economic impact estimate. We assessed this possibility and found that, even under the most highly impacted scenario, impacts would remain less than 1 percent (see July 21 memo, Revised Impacts Assessment).

Reduced waste quantities, as discussed above, would correspond to reduced benefits from compliant management. However, we continue to believe that, to the extent that affected dye, pigment and FD&C colorant wastes may be managed in landfills not compliant with 40 CFR section 258.40, 264.301 or 265.301, these wastes have the potential to contaminate groundwater, resulting in unacceptable risk to human health and the environment.

B. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act* (PRA), 44 U.S.C. 3501 *et seq.* The information collection requirements are not enforceable until OMB approves them. The Information Collection Request (ICR) Supporting Statement prepared by EPA (available in the public docket for this final rule) has been assigned EPA ICR number 1189.13

The effect of listing the wastes described earlier is to subject certain wastes generated by the dyes and pigments industries to management and treatment standards under the Resource Conservation and Recovery Act (RCRA). This final rule represents an incremental increase in burden for generators and subsequent handlers of the newly listed wastes, and affects the existing RCRA information collection requirements for the Land Disposal Restrictions.

In addition to complying with the existing subtitle C recordkeeping and reporting requirements for the newly listed waste stream, EPA is requiring that facilities generating organic dyes and/or pigment nonwastewaters to be able to document their compliance with the new K181 demonstration (through use of knowledge or testing) and recordkeeping requirements, as well as the conditions provided for exemption from the scope of the conditional hazardous waste listing promulgated today. This requirement is necessary to ensure that in-scope nonwastewaters are managed in a manner that is safe for human health and the environment.

As a result of the final rule, EPA estimates that up to 33 facilities may be subject to an additional burden for existing and new RCRA information collection requirements for the newly listed wastes. We have estimated the annual hour and cost burden for these facilities to comply with the existing and new recordkeeping and reporting requirements associated with generating and managing K181 wastes. The hourly recordkeeping burden from the new requirements ranges between 6.5 and 20.40 hours per respondent per year. This burden includes time for reading the regulations, determining whether organic dyes and/or pigment production nonwastewaters exceed regulatory listing levels, and keeping documentation on site, as specified. We estimate that these facilities would incur an annual burden of approximately 563 hours and $123,776 in carrying out new information collection requirements. We also estimated that these facilities would incur an annual burden of approximately 2 hours and $86,102 in carrying out existing information collection requirements. See the ICR Supporting Statement for details.

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.

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. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the **Federal Register** to display the OMB control number for the approved information collection requirements contained in this final rule.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq., generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedures Act or any other statute. This is required 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 organizations, and small governmental jurisdictions. The Agency has determined that no small organizations or small governmental jurisdictions are impacted by today's final rulemaking.

For purposes of assessing the impacts of today's final determination on businesses, a small business is defined either by the number of employees or by the annual dollar amount of sales/revenues. The level at which an entity is considered small is determined for each North American Industry Classification System (NAICS) code by the Small Business Administration (SBA). Organic dye and pigment manufacturers are classified under NAICS 325132. The SBA has

determined that manufacturers classified under this NAICS code are ''small businesses'' if their total corporate employment is less than 750 persons.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The small entities directly regulated by this final rule are organic dye and pigment manufacturers classified under NAICS 325132. We have determined that all potentially impacted small businesses are projected to experience compliance cost impacts of less than 1 percent of gross annual revenues. Based on the available information, there are ten potentially affected firms that constitute small entities under the size definition established by the SBA. Assuming all ten companies generate wastes containing any of the constituents of concern, no company would experience impacts greater than 0.29 percent of annual gross revenues (see July 21, 2004 memo: Revised Impacts Assessment).

Although this final rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this rule on small entities. Today's final action was designed to mitigate economic impacts to small entities while, at the same time ensuring full protection of human health and the environment. This was accomplished through our innovative mass-based approach for the determination of regulatory levels. Our waste quantity-based implementation approach also helped mitigate potential impacts to small entities.

D. Unfunded Mandates Reform Act

Signed into law on March 22, 1995, the Unfunded Mandates Reform Act (UMRA) supersedes Executive Order 12875, reiterating the previously established directives while also imposing additional requirements for federal agencies issuing any regulation containing an unfunded mandate.

Today's final rule is not subject to the requirements of sections 202, 204 and 205 of UMRA. In general, a rule is subject to the requirements of these sections if it contains ''Federal mandates'' that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. Today's final rule does not result in $100 million or more in expenditures. The aggregate annualized compliance costs for today's rule are projected to be less than $3 million.

Today's rule is not subject to the requirements of section 203 of UMRA. Section 203 requires agencies to develop a small government Agency plan before establishing any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments. EPA has determined that this rule will not significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' are defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

Today's final rule does not have federalism implications. No State or local governments own or operate potentially impacted organic dye and/or pigment manufacturing facilities. Furthermore, this action will not impose excessive enforcement or review requirements. Thus, this rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in the Order. Executive Order 13132 does not apply to this final rule.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 6, 2000), requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' ''Policies that have tribal implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes.''

Today's final rule does not have tribal implications. This rule will not significantly or uniquely affect the communities of Indian tribal governments, nor impose substantial direct compliance costs. No tribal governments own or operate potentially impacted organic dye and/or pigment manufacturing facilities. Furthermore, this action will not impose any enforcement or review requirements for tribal entities. Thus, this rule will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in the Order.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

Executive Order 13045: ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the rule on children, and explain why the regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

Today's final rule is not subject to the Executive Order because it is not economically significant as defined under point one of the Order, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. However, the Agency is particularly concerned with environmental threats to children.

The topic of environmental threats to children's health is growing in importance as scientists, policy makers, and community leaders recognize the extent to which children are particularly vulnerable to environmental hazards. Recent EPA actions are in the forefront of addressing environmental threats to the health of children. Setting environmental standards that address combined exposures and that are protective of the heightened risks faced by children are both goals named within EPA's ''National Agenda to Protect Children's Health from Environmental Threats.'' Areas for potential reductions in risks and related health effects are all targeted as priority issues within EPA's

September 1996 report, Environmental Health Threats to Children.

A few significant physiological characteristics are largely responsible for children's increased susceptibility to environmental hazards. First, children eat proportionately more food, drink proportionately more fluids, and breathe more air per pound of body weight than do adults. As a result, children potentially experience greater levels of exposure to environmental threats than do adults. Second, because children's bodies are still in the process of development, their immune systems, neurological systems, and other immature organs can be more easily and considerably affected by environmental hazards. The connection between these physical characteristics and children's susceptibility to environmental threats was a consideration in developing the hazardous waste listing under today's final action.

H. Executive Order 12898: Environmental Justice

Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' (February 11, 1994), is designed to address the environmental and human health conditions of minority and low-income populations. EPA is committed to environmental justice for all citizens and has assumed a leadership role in such initiatives. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, income, or net worth bears disproportionately high and adverse human health and/or environmental impacts as a result of EPA's policies, programs, and activities. We have no data indicating that today's final rule would result in disproportionately negative impacts on minority or low income communities.

I. Executive Order 13211: Actions Affecting Energy Supply, Distribution, or Use

Executive Order 13211, ''Actions Concerning Regulations That Affect Energy Supply, Distribution, or Use'' (May 18, 2001), addresses the need for regulatory actions to more fully consider the potential energy impacts of the proposed rule and resulting actions. Under the Order, agencies are required to prepare a Statement of Energy Effects when a regulatory action may have significant adverse effects on energy supply, distribution, or use, including impacts on price and foreign supplies. Additionally, the requirements obligate agencies to consider reasonable alternatives to regulatory actions with adverse effects and impacts the alternatives might have upon energy supply, distribution, or use.

This final rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Affect Energy Supply, Distribution, or Use'' (66 FR 28355 (May 22, 2001)) because it is not an economically significant regulatory action under Executive Order 12866. Furthermore, it is not expected to have a significant adverse impact on the supply, distribution, or use of energy.

J. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Pub L. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory 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, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This final rule does not involve the establishment of voluntary technical standards; thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply.

K. The Congressional Review Act (5 U.S.C. 801 et seq., as Added by the Small Business Regulatory Enforcement Fairness Act of 1996)

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 submitted a report containing this final 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 in the **Federal Register**. A ''major rule'' cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and record keeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 268

Environmental protection, Hazardous materials, Waste management, Reporting and record keeping requirements, Land Disposal Restrictions, Treatment Standards.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous material transportation, Hazardous waste, Indians—lands, Intergovernmental relations, Penalties, Reporting and record keeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Natural resources, Reporting and record keeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: February 15, 2005.

Stephen L. Johnson,

Acting Administrator.

■ For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

■ 1. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*

■ 2. Section 148.18 is amended by revising paragraph (l) and adding paragraph (m) to read as follows:

§ 148.18 Waste-specific prohibitions—newly listed and identified wastes.

* * * * *

(l) Effective August 23, 2005, the waste specified in 40 CFR 261.32 as

EPA Hazardous Waste Number K181 is prohibited from underground injection.

(m) The requirements of paragraphs (a) through (l) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

■ 3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

Subpart A—[Amended]

■ 4. Section 261.4 is amended by revising paragraph (b)(15) to read as follows:

§ 261.4 Exclusions.

* * * * *

(b) * * *

(15) Leachate or gas condensate collected from landfills where certain solid wastes have been disposed, provided that:

(i) The solid wastes disposed would meet one or more of the listing descriptions for Hazardous Waste Codes K169, K170, K171, K172, K174, K175, K176, K177, K178 and K181 if these wastes had been generated after the effective date of the listing;

(ii) The solid wastes described in paragraph (b)(15)(i) of this section were disposed prior to the effective date of the listing;

(iii) The leachate or gas condensate do not exhibit any characteristic of hazardous waste nor are derived from any other listed hazardous waste;

(iv) Discharge of the leachate or gas condensate, including leachate or gas condensate transferred from the landfill to a POTW by truck, rail, or dedicated pipe, is subject to regulation under sections 307(b) or 402 of the Clean Water Act.

(v) As of February 13, 2001, leachate or gas condensate derived from K169–K172 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. As of November 21, 2003, leachate or gas condensate derived from K176, K177, and K178 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. After February 26, 2007, leachate or gas condensate derived from K181 will no longer be exempt if it is stored or managed in a surface impoundment prior to discharge. There is one exception: if the surface impoundment is used to temporarily store leachate or gas condensate in response to an emergency situation (*e.g.*, shutdown of wastewater treatment system), provided the impoundment has a double liner, and provided the leachate or gas condensate is removed from the impoundment and continues to be managed in compliance with the conditions of this paragraph (b)(15)(v) after the emergency ends.

* * * * *

Subpart D—[Amended]

■ 5. Section 261.32 is amended by:

■ a. Designating the existing text and table as paragraph (a),

■ b. In the table by adding a new entry in alphanumeric order (by first column) under the heading ''Organic Chemicals'',

■ c. Adding paragraphs (b), (c) and (d).

The revisions and additions read as follows:

§ 261.32 Hazardous wastes from specific sources.

(a) * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
*	* * * * * *	*
	Organic Chemicals	
*	* * * * * *	*
K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in § 258.40, (ii) disposed in a Subtitle C landfill unit subject to either § 264.301 or § 265.301, (iii) disposed in other Subtitle D landfill units that meet the design criteria in § 258.40, § 264.301, or § 265.301, or (iv) treated in a combustion unit that is permitted under Subtitle C, or an on-site combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§ 261.21–261.24 and 261.31–261.33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.	(T)
*	* * * * * *	*

* * * * *

(b) *Listing Specific Definitions:* (1) For the purposes of the K181 listing, dyes and/or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or FDA certified colors that are classified as azo, triarylmethane, perylene or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes and/or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes and/or pigments, are not included in the K181 listing.

(c) *K181 Listing Levels.* Nonwastewaters containing constituents in amounts equal to or exceeding the following levels during any calendar year are subject to the K181 listing, unless the conditions in the K181 listing are met.

Constituent	Chemical abstracts No.	Mass levels (kg/yr)
Aniline	62–53–3	9,300
o-Anisidine	90–04–0	110
4-Chloroaniline	106–47–8	4,800
p-Cresidine	120–71–8	660
2,4-Dimethylaniline	95–68–1	100
1,2-Phenylenediamine	95–54–5	710
1,3-Phenylenediamine	108–45–2	1,200

(d) *Procedures for demonstrating that dyes and/or pigment nonwastewaters are not K181.* The procedures described in paragraphs (d)(1)–(d)(3) and (d)(5) of this section establish when nonwastewaters from the production of dyes/pigments would not be hazardous (these procedures apply to wastes that are not disposed in landfill units or treated in combustion units as specified in paragraph (a) of this section). If the nonwastewaters are disposed in landfill units or treated in combustion units as described in paragraph (a) of this section, then the nonwastewaters are not hazardous. In order to demonstrate that it is meeting the landfill disposal or combustion conditions contained in the K181 listing description, the generator must maintain documentation as described in paragraph (d)(4) of this section.

(1) *Determination based on no K181 constituents.* Generators that have knowledge (*e.g.*, knowledge of constituents in wastes based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed) that their wastes contain none of the K181 constituents (*see* paragraph (c) of this section) can use their knowledge to determine that their waste is not K181. The generator must document the basis for all such determinations on an annual basis and keep each annual documentation for three years.

(2) *Determination for generated quantities of 1,000 MT/yr or less for wastes that contain K181 constituents.* If the total annual quantity of dyes and/or pigment nonwastewaters generated is 1,000 metric tons or less, the generator can use knowledge of the wastes (*e.g.*, knowledge of constituents in wastes based on prior analytical data and/or information about raw materials used, production processes used, and reaction and degradation products formed) to conclude that annual mass loadings for the K181 constituents are below the paragraph (c) of this section listing levels of this section. To make this determination, the generator must:

(i) Each year document the basis for determining that the annual quantity of nonwastewaters expected to be generated will be less than 1,000 metric tons.

(ii) Track the actual quantity of nonwastewaters generated from January 1 through December 31 of each year. If, at any time within the year, the actual waste quantity exceeds 1,000 metric tons, the generator must comply with the requirements of paragraph (d)(3) of this section for the remainder of the year.

(iii) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(iv) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

(A) The quantity of dyes and/or pigment nonwastewaters generated.

(B) The relevant process information used.

(C) The calculations performed to determine annual total mass loadings for each K181 constituent in the nonwastewaters during the year.

(3) *Determination for generated quantities greater than 1,000 MT/yr for wastes that contain K181 constituents.* If the total annual quantity of dyes and/or pigment nonwastewaters generated is greater than 1,000 metric tons, the generator must perform all of the steps described in paragraphs ((d)(3)(i)–(d)(3)(xi) of this section) in order to make a determination that its waste is not K181.

(i) Determine which K181 constituents (see paragraph (c) of this section) are reasonably expected to be present in the wastes based on knowledge of the wastes (*e.g.*, based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed).

(ii) If 1,2-phenylenediamine is present in the wastes, the generator can use either knowledge or sampling and analysis procedures to determine the level of this constituent in the wastes. For determinations based on use of knowledge, the generator must comply with the procedures for using knowledge described in paragraph (d)(2) of this section and keep the records described in paragraph (d)(2)(iv) of this section. For determinations based on sampling and analysis, the generator must comply with the sampling and analysis and recordkeeping requirements described below in this section.

(iii) Develop a waste sampling and analysis plan (or modify an existing plan) to collect and analyze representative waste samples for the K181 constituents reasonably expected to be present in the wastes. At a minimum, the plan must include:

(A) A discussion of the number of samples needed to characterize the wastes fully;

(B) The planned sample collection method to obtain representative waste samples;

(C) A discussion of how the sampling plan accounts for potential temporal and spatial variability of the wastes.

(D) A detailed description of the test methods to be used, including sample preparation, clean up (if necessary), and determinative methods.

(iv) Collect and analyze samples in accordance with the waste sampling and analysis plan.

(A) The sampling and analysis must be unbiased, precise, and representative of the wastes.

(B) The analytical measurements must be sufficiently sensitive, accurate and precise to support any claim that the constituent mass loadings are below the paragraph (c) of this section listing levels of this section.

(v) Record the analytical results.

(vi) Record the waste quantity represented by the sampling and analysis results.

(vii) Calculate constituent-specific mass loadings (product of concentrations and waste quantity).

(viii) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(ix) Determine whether the mass of any of the K181 constituents listed in paragraph (c) of this section generated between January 1 and December 31 of any year is below the K181 listing levels.

(x) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

(A) The sampling and analysis plan.

(B) The sampling and analysis results (including QA/QC data)

(C) The quantity of dyes and/or pigment nonwastewaters generated.

(D) The calculations performed to determine annual mass loadings.

(xi) Nonhazardous waste determinations must be conducted annually to verify that the wastes remain nonhazardous.

(A) The annual testing requirements are suspended after three consecutive successful annual demonstrations that the wastes are nonhazardous. The generator can then use knowledge of the wastes to support subsequent annual determinations.

(B) The annual testing requirements are reinstated if the manufacturing or

waste treatment processes generating the wastes are significantly altered, resulting in an increase of the potential for the wastes to exceed the listing levels.

(C) If the annual testing requirements are suspended, the generator must keep records of the process knowledge information used to support a nonhazardous determination. If testing is reinstated, a description of the process change must be retained.

(4) *Recordkeeping for the landfill disposal and combustion exemptions.* For the purposes of meeting the landfill disposal and combustion condition set out in the K181 listing description, the generator must maintain on site for three years documentation demonstrating that each shipment of waste was received by a landfill unit that is subject to or meets the landfill design standards set out in the listing description, or was treated in combustion units as specified in the listing description.

(5) *Waste holding and handling.* During the interim period, from the point of generation to completion of the hazardous waste determination, the generator is responsible for storing the wastes appropriately. If the wastes are determined to be hazardous and the generator has not complied with the subtitle C requirements during the interim period, the generator could be subject to an enforcement action for improper management.

■ 6. Appendix VII to part 261 is amended by adding the following entry in alphanumeric order (by the first column) to read as follows.

Appendix VII to Part 261—Basis for Listing Hazardous Waste

EPA hazardous waste No.	Hazardous constituents for which listed
* * * *	
K181	Aniline, o-anisidine, 4-chloroaniline, p-cresidine, 2,4-dimethylaniline, 1,2-phenylenediamine, 1,3-phenylenediamine.
* * * *	

* * * * *

Appendix VIII to Part 261—Hazardous Constituents

■ 7. Appendix VIII to part 261 is amended by adding in alphabetical sequence of common name the following entries:

* * * * *

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * *	* * *		*
o-Anisidine (2-methoxyaniline)	Benzenamine, 2-Methoxy-	90–04–0	
* * *	* * *		*
p-Cresidine	2-Methoxy-5-methylbenzenamine	120–71–8	
* * *	* * *		*
2,4-Dimethylaniline (2,4-xylidine)	Benzenamine, 2,4-dimethyl-	95–68–1	
* * *	* * *		*
1,2-Phenylenediamine	1,2-Benzenediamine	95–54–5	
* * *	* * *		*
1,3-Phenylenediamine	1,3-Benzenediamine	108–45–2	
* * *	* * *		*

PART 268—LAND DISPOSAL RESTRICTIONS

■ 8. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart C—Prohibitions on Land Disposal

■ 9. Subpart C is amended by adding § 268.20 and adding and reserving §§ 268.21 through 268.29 to read as follows:

§ 268.20 Waste specific prohibitions—Dyes and/or pigments production wastes.

(a) Effective August 23, 2005, the waste specified in 40 CFR part 261 as EPA Hazardous Waste Number K181, and soil and debris contaminated with this waste, radioactive wastes mixed with this waste, and soil and debris contaminated with radioactive wastes mixed with this waste are prohibited from land disposal.

(b) The requirements of paragraph (a) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in subpart D of this Part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable treatment standards established pursuant to a petition granted under § 268.44;

(4) Hazardous debris has met the treatment standards in § 268.40 or the alternative treatment standards in § 268.45; or

(5) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(c) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract of the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable subpart D levels, the waste is prohibited from land

disposal, and all requirements of part 268 are applicable, except as otherwise specified.

■ 10. In § 268.40, the Table of Treatment Standards is amended by revising the entry for F039 to add constituents in alphabetical sequence, and by adding in alphanumeric order the new entry for K181 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[**Note:** NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters Concentration in mg/L [3], or technology code [4]	Nonwastewater Concentration in mg/kg [5] unless noted as "mg/L TCLP", or technology code
		Common name	CAS [2] No.		
*	*	*	*	*	*
F039 ...	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under Subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Waste retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028).	* * * * *			
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
		* * * * *			
		p-Cresidine	120-71-8	0.010	0.66
		* * * * *			
		2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.010	0.66
		* * * * *			
		1,3-Phenylenediamine	108-45-2	0.010	0.66
		* * * * *			
*	*	*	*	*	*
K181 ...	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of section 261.32 that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis.	Aniline	62-53-3	0.81	14
		o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
		4-Chloroaniline	106-47-8	0.46	16
		p-Cresidine	120-71-8	0.010	0.66
		2,4-Dimethylaniline (2,4-xylidine)	95-68-1	0.010	0.66
		1,2-Phenylenediamine	95-54-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN
		1,3-Phenylenediamine	108-45-2	0.010	0.66
*	*	*	*	*	*

* * * * *

Footnotes to Treatment Standard Table 268.40

1 The waste descriptions provided in this table do not replace waste descriptions in 40 CFR Part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

2 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

3 Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

4 All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1–Technology Codes and Descriptions of Technology-Based Standards.

5 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, Subpart O or 40 CFR part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * *

■ 11. The Table—Universal Treatment Standards in § 268.48 is amended by adding in alphabetical sequence the following entries under the heading organic constituents:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[**Note:** NA means not applicable]

Regulated constituent common name	CAS [1] number	Wastewater standard Concentration in mg/L [2]	Nonwastewater standard Concentration in mg/kg [3] unless noted as "mg/L TCLP"
* * * * *		*	*
o-Anisidine (2-methoxyaniline)	90–04–0	0.010	0.66
* * * * *		*	*
p-Cresidine	120–71–8	0.010	0.66
* * * * *		*	*
2,4-Dimethylaniline (2,4-xylidine)	95–68–1	0.010	0.66
* * * * *		*	*
1,3-Phenylenediamine	108–45–2	0.010	0.66
* * * * *		*	*

* * * * *

1 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

2 Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

3 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

■ 12. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

■ 13. Section 271.1(j) is amended by adding the following entries to Table 1 and Table 2 in chronological order by date of publication to read as follows.

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * * * * * *			
Feb. 15, 2005	Listing of Hazards Waste K181	[INSERT FEDERAL REGISTER PAGE NUMBERS FOR FINAL RULE].	Aug. 23, 2005
* * * * * * *			

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* * * * * * *			
Aug. 23, 2005	Prohibition on land disposal of K181 waste, and prohibition on land disposal of radioactive waste mixed with K181 wastes, including soil and debris.	3004(g)(4)(C) and 3004(m)	Feb. 24, 2005, (INSERT FEDERAL REGISTER PAGE NUMBERS).
* * * * * * *			

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

■ 14. The authority citation for Part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

■ 15. In § 302.4, Table 302.4 is amended by adding the following new entry in alphanumeric order at the end of the table to read as follows:

§ 302.4 Designation of hazardous substances.

* * * * *

TABLE 302.4.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

[**Note:** All comments/notes are located at the end of this table]

Hazardous substance	CASRN	Statutory code ‡	RCRA waste number	Final RQ pounds (Kg)
* * * *	*	*		*
K181 ..... Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of section 261.32 that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis.	.....	4	K181	##

‡ Indicates the statutory source defined by 1, 2, 3, and 4, as described in the note preceding Table 302.4.

* * * * *

The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory RQ applies.

* * * * *

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