ENVIRONMENTAL PROTECTION AGENCY

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

[SWH–FRL–6373–4]

RIN 2050–AD80

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Dye and Pigment Industries; Land Disposal Restrictions for Newly Identified Wastes; CERCLA Hazardous Substance Designation and Reportable Quantities

AGENCY: Environmental protection agency (EPA).

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The EPA is proposing to list two of three wastes from the dyes and pigment industries as hazardous wastes under the Resource, Conservation, and Recovery Act (RCRA), which direct EPA to determine whether certain wastes from the dye and pigment industries present a hazard to human health or the environment. The effect of listing these wastes will be to subject them to stringent management and treatment standards and to emergency notification requirements if there are releases of these hazardous wastes to the environment. EPA is proposing concentration-based listings for the two wastes, such that waste generators have the option of determining that their specific waste is nonhazardous. To have their waste classified as nonhazardous, generators must determine the levels of constituents in their wastes, and certify to EPA that their wastes are below the regulatory levels of concern.

DATES: EPA will accept public comments on this proposed rule until September 21, 1999; comments postmarked after this date will be marked ''late'' and may not be considered. Any person may request a public hearing on this proposal by filing a request with Mr. David Bussard, whose address appears below, by August 6, 1999.

ADDRESSES: If you wish to comment on this proposed rule, you must send an original and two copies of the comments referencing docket number F–1999–DPIP–FFFFF to: RCRA Docket Information Center, Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 401 M Street, SW, Washington, DC 20460. Hand deliveries of comments should be made to the Arlington, VA, address listed below. You may also submit comments electronically by sending electronic mail through the Internet to: rcradocket@epamail.epa.gov. See the beginning of Supplementary Information for instructions on electronic submission.

You should not submit electronically any confidential business information (CBI). You must submit an original and two copies of CBI under separate cover to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, 401 M Street, SW, Washington, DC 20460. See the beginning of Supplementary Information for information of viewing public comments and supporting materials.

Address requests for a hearing to Mr. David Bussard at: Office of Solid Waste, Hazardous Waste Identification Division (5304W), U.S. Environmental Protection Agency 401 M Street, SW, Washington, DC 20460, (703)308–8880.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For information on specific aspects of the rule, contact Narendra Chaudhari or Robert Kayser, Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460. [E-mail addresses and telephone numbers:

chaudhari.narendra@epamail.epa.gov, (703) 308-0454;

kayser.robert@epamail.epa.gov, (703) 308–7304)].

SUPPLEMENTARY INFORMATION: You should identify comments in electronic format with the docket number F–1999-DPIP-FFFFF. You must submit all electronic comments as an ASCII (text) file, avoiding the use of special characters and any form of encryption. If you do not submit comments electronically, EPA is asking prospective commenters to voluntarily submit one additional copy of their comments on labeled personal computer diskettes in ASCII (text) format or a word processing format that can be converted to ASCII (text). It is essential to specify on the disk label the word processing software and version/edition as well as the commenter's name. This will allow EPA to convert the comments into one of the word processing formats utilized by the Agency. Please use mailing envelopes designed to physically protect the submitted diskettes. EPA emphasizes that submission of comments on diskettes is not mandatory, nor will it result in any advantage or disadvantage to any commenter. Supporting documents in the docket for this Notice are also available in electronic format on the Internet. Follow these instructions to access these documents.

WWW: http://www.epa.gov/epaoswer/hazwaste/id

FTP: ftp.epa/gov

Login: anonymous

Password: your Internet address

Files are located in /pub/gopher/OSWRCRA.

EPA will keep the official record for this action in paper form. Accordingly, we will transfer all comments received electronically into paper form and place them in the official record, which will also include all comments submitted directly in writing. The official record is the paper record maintained at the address in **ADDRESSES** at the beginning of this document.

EPA responses to comments, whether the comments are written or electronic, will be in a notice in the **Federal Register** or in a response to comments document placed in the official record for this rulemaking. We will not immediately reply to commenters electronically other than to seek clarification of electronic comments that may be garbled in transmission or during conversion to paper form, as discussed above.

You may view public comments and supporting materials in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, we recommend that you make an appointment by calling (703) 603–9230. You may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. For information on accessing paper and/or electronic copies of the document, see the **SUPPLEMENTARY INFORMATION** section.

How Can I Influence EPA's Thinking on This Proposed Rule?

In developing this proposal, we tried to address the concerns of all our stakeholders. Your comments will help us improve this rule. We invite you to provide different views on options we propose, new approaches we haven't considered, new data, how this proposed rule may effect you, or other relevant information. We welcome your views on all aspects of this proposed rule, but request comments on specific issues throughout this notice. We grouped these specific requests near the end of the sections in which we discuss the relevant issues. Your comments will be most effective if you follow the suggestions below:

- Explain your views and reasoning as clearly as possible.
- Provide solid technical and cost data to support your views.
- If you estimate potential costs, explain how you arrived at the estimate.
- Tell us which parts you support, as well as those with which you disagree.
- Provide specific examples to illustrate your concerns.
- Offer specific alternatives.
- Refer your comments to specific sections of the proposal, such as the units or page numbers of the preamble, or the regulatory sections.
- Be sure to include the name, date, and docket number with your comments.

Contents of This Proposed Rule

The following outline lists the contents of the preamble to this proposed rule:

I. Overview

A. Who Would Potentially Be Affected by This Proposed Rule?

The action, if finalized, could potentially affect those who handle the waste streams proposed for listing on EPA's RCRA list of hazardous wastes. This action may also affect entities that may need to respond to releases of these wastes as CERCLA hazardous substances. Those affected may include:

Category	Affected entities
Industry	Generators of the following listed wastes, or entities that treat, store, transport, or dispose of these wastes or materials derived from them. K167 Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments, or FD&C colorants. K168 Wastewater treatment sludges from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).
State, Local, Tribal Govt	State and Local Emergency Planning entities.
Federal Govt	National Response Center, and any Federal Agency that handle the listed waste or chemical.

We do not intend this table to be exhaustive, but rather our aim is to provide a guide for readers regarding entities likely to be regulated by this action. This table lists those entities that EPA now is aware 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 amended rules found at the end of this **Federal Register** document. Furthermore, we are proposing this rule as a concentration-based listing, such that waste generators have the option of determining that their specific waste is nonhazardous (see Sections IV and V of today's rule). 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. Why Does This Proposed Rule Read Differently From Other Listing Rules?

Today's proposed listing determination 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 proposed rule easier to read and understand. This new format is part of the Agency's efforts at regulatory reinvention, and it makes today's proposed rule read differently from other listing rules. The Agency believes that this new format will increase readers' abilities to understand the regulations, which should then increase compliance, make enforcement easier, and foster better relationships between EPA and the regulated community.

All of the requirements found in today's proposed regulations would constitute binding, enforceable legal requirements. The plain language format used in today's proposed regulations may appear different from other rules, but it would establish binding, enforceable legal requirements just as those in the existing regulations.

C. What Are the Statutory Authorities for This Proposed rule?

EPA is proposing these regulations under the authority of Sections 2002(a), 3001 (a), (b) and (e)(2), 3004 (g) and (m), and 3007(a) of the Solid Waste Disposal Act (commonly referred to as RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). These statutes are codified in Volume 42 of the United States Code (U.S.C.), sections 6901 to 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 for the CERCLA aspects of this proposed rule.

II. Background

A. How Does EPA Define a Hazardous Waste?

EPA's regulations establish two ways of identifying wastes as hazardous under RCRA. Wastes may be hazardous either if they exhibit certain properties (''characteristics''), or if the wastes are included on a specific list of wastes EPA has determined are hazardous (''listing'' a waste as hazardous). EPA's regulations in the Code of Federal Regulations (40 CFR) §§ 261.20 through 261.24 define characteristic wastes. These regulations classify wastes that exhibit certain properties as having the characteristic of ignitability, corrosivity, reactivity, or toxicity. As a generator, you must identify wastes as characteristic wastes by sampling a waste, or by using appropriate company records concerning the nature of the waste, to determine whether a waste has the relevant properties (see § 262.11(c)). There is no regulatory requirement to conduct sampling, but persons improperly managing materials that are found to be characteristic hazardous wastes are subject to enforcement actions under RCRA.

EPA may ''list'' wastes as hazardous if we conclude that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly managed. We have established criteria for listing a hazardous waste at 40 CFR 261.11(a)(3) for wastes that contain hazardous constituents identified in Appendix VIII of 40 CFR part 261. In deciding whether a wastes poses a substantial hazard, we consider the factors given in § 261.11(a)(3). We place constituents in Appendix VIII if scientific studies have shown a chemical has toxic effects on life forms (see 261.11(a)(3)). When listing a waste, we also add the hazardous constituents that serve as the basis for listing to Appendix VII to part 261.

The regulations at 40 CFR 261.31 through 261.33 contain the various hazardous wastes the Agency has listed to date. Section 261.31 lists wastes generated from non-specific sources, known as ''F-wastes,'' and contains wastes that are usually generated by various industries or types of facilities, such as ''wastewater treatment sludges from electroplating operations'' (see code F006). Section 261.32 lists hazardous wastes generated from specific industry sources, known as ''K-wastes,'' such as ''Spent potliners from primary aluminum production'' (see code K088). Section 261.33 contains lists of commercial chemical products and other materials that become hazardous wastes, known as ''P-wastes'' or ''U-wastes,'' when they are discarded or intended to be discarded.

The proposed regulations in today's notice would list wastes from a specific industry and thus these wastes would be added to § 261.32 with K-waste codes. We are proposing to add constituents that serve as the basis for the proposed listings to Appendix VII, Part 261. For the chemicals not already listed on the list of Hazardous Constituents in Appendix VIII, we are also proposing to add these chemicals to that list.

Wastes listed as hazardous are subject to federal requirements under RCRA. These regulations affect persons who generate, transport, treat, store or dispose of such waste. Facilities that must meet the hazardous waste management requirements, including the need to obtain permits to operate, commonly are referred to as Subtitle C facilities. Subtitle C is Congress' original statutory designation for that part of RCRA that directs EPA to issue those regulations for hazardous wastes as may be necessary to protect human health or the environment. EPA standards and procedural regulations implementing Subtitle C are found generally at 40 CFR Parts 260 through 272.

Solid wastes that are not hazardous wastes may be disposed of at facilities that are overseen by state and local governments. These are the so-called Subtitle D facilities, which generally impose less stringent requirements on management of wastes. Subtitle D is Congress' original statutory designation for that part of RCRA that deals with disposal of solid waste. EPA regulations affecting Subtitle D facilities are found generally at 40 CFR Parts 240 thru 247, and 255 thru 258. Regulations for Subtitle D landfills that accept municipal waste (''municipal solid waste landfills'') are given in Part 258.

Residuals from the treatment, storage, or disposal of most listed hazardous wastes are also classified as hazardous wastes based on the ''derived-from'' rule (40 CFR 261.3(c)(2)(i)). For example, ash or other residuals from treatment of the listed wastes generally carry the original waste code and are subject to the hazardous waste regulations. Also, the ''mixture'' rule (40 CFR 261.3(a)(2)(iv)) provides that, with certain limited exceptions, any mixture of a listed hazardous waste and a solid waste is itself a RCRA hazardous waste. However, when these wastes are recycled as described in 40 CFR 261.2(e)(1)(iii) or 261.4(a)(8), they are

not solid wastes and are not subject to hazardous waste regulations. For example, if a waste is collected and returned in a closed-loop fashion to the same process, the waste is not regulated.

All RCRA hazardous wastes are also hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as described in section 101(14)(C) of the CERCLA statute. This applies to wastes listed in 261.31 through 261.33, as well as any wastes that exhibit a RCRA characteristic. Table 302.4 at 40 CFR 302.4 lists CERCLA hazardous substances along with their reportable quantities (RQs). Anyone spilling or releasing a substance at or above the RQ must report this to the National Response Center, as required in CERCLA Section 103. In addition, Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA) requires facilities to report the release of a CERCLA hazardous substance at or above its RQ to State and local authorities. Today's rule proposes to establish RQs for the newly listed wastes. EPA is not taking action at this time to adjust the one-pound statutory RQs for the newly listed hazardous substances.

B. What Industries Are Covered in This Proposed Rule?

1. The Dye and Pigment Industries

Today's proposal applies to the manufacturers of organic dyes and pigments, and does not affect producers of only inorganic dyes or pigments. We have already issued final rules governing the manufacturing of inorganic pigments. Section 261.32 contains wastes codes K002 through K008 that list wastewater treatment sludges and other residues from the production of inorganic pigments.

The organic dye and pigment industries are comprised of three related industries, dye manufacturers, pigment manufacturers, and Food, Drug, and Cosmetic (FD&C) colorant manufacturers. Dyes are colored or fluorescent organic substances which impart color to a substrate. When a dye is applied, it penetrates the substrate in a soluble form, after which it may or may not become insoluble. Dyes are used to color fabrics, leather, paper, ink, lacquers, varnishes, plastics, cosmetics, and some food items. Dye manufacture in the U.S. includes more than 2,000 individual dyes, the majority of which are produced in quantities of less than 50,000 pounds. The U.S. International Trade Commission's (USITC) production data for 1994 showed total production of approximately 156,000 tons for all organic dyes.

Organic pigments possess unique characteristics that distinguish them from dyes and other colorants. The primary difference between pigments and dyes is that, during the application process, pigments are usually insoluble in the substrate. Pigments also retain a crystalline or particulate structure and impart color by selective absorption or by scattering of light. This is different from dyes, which impart color by selective absorption. Pigments are used in a variety of applications; the primary use is in printing inks. There are fewer pigments produced than dyes, though pigment batches are generally larger in size. The USITC publication, Industry and Trade Summary: Synthetic Organic Pigments, USITC (No. 3021, February 1997), indicates that the total U.S. production was an estimated 71,500 tons of organic pigments in 1995.

FD&C colorants are dyes and pigments that have been approved by the Food and Drug Administration (FDA) for use in food items, drugs, and/or cosmetics. Typically, FD&C colorants are azo or triarylmethane dyes and are similar or identical to larger-volume dye products not used in food, drugs, and cosmetics. Manufacture of FD&C colorants is typically the same as that for the corresponding dye or pigment, except that the colorant undergoes additional purification. Each FD&C colorant batch is tested and certified by the FDA.

2. Previous Regulations of Wastes From This Industry

The 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA require EPA to make listing determinations for wastes from the production of dyes and pigments (see RCRA section 3001(e)(2)). On June 1991 EPA entered into a proposed consent decree in a lawsuit filed by the Environmental Defense Fund (*EDF* v. *Browner*, Civ. No. 89–0598 (D.D.C.), hereafter referred to as the consent decree). The consent decree sets out a series of deadlines for promulgating RCRA listing decisions, and has been amended as necessary. Paragraph 1h. of the consent decree obligates EPA to determine whether or not to list as hazardous certain wastes from the production of dyes and pigments.

In the consent decree EPA agreed to examine wastes from the manufacture of three classes of dyes and pigments for regulation: azo/benzidine, anthraquinone, and triarylmethane. The agreement specifies that the listing determination is to address wastes from the azo, monoazo, diazo, triazo, polyazo, azoic, and benzidine categories of the azo/benzidine dye and pigment class; the anthraquinone and perylene categories of the anthraquinone dye and pigment class; and the triarylmethane, triphenylmethane, and pyrazolone categories of the triarylmethane dye and pigment class. The settlement agreement also specifies that the listing determination is to address the following specific types of wastes where they are found: spent catalysts, reactor still overheads, vacuum system condensate, process waters, spent adsorbent, equipment cleaning sludge, product mother liquor, product standardization filter cake, dust collector filter fines, recovery still bottoms, treated wastewater effluent, and wastewater treatment sludge.

Due to the market demand for a wide variety of dye and pigment products, the dye and pigment industries typically operate successive batch processes producing varying dye and pigment products. These batch operations generate a wide variety of solid wastes on a periodic basis. These wastes generally can be divided into two general types: commingled wastes and process-specific wastes. Commingled wastes are wastes combined from multiple processes prior to management (*e.g.*, wastewaters). Commingled wastes include secondary wastes generated from the treatment of other commingled wastes (*e.g.*, wastewater treatment sludges). Process-specific wastes are wastes that are unique to a specific process and may be managed independently of one another (*e.g.*, spent filter aids).

On December 22, 1994, EPA published a notice that proposed listing decisions for 11 of the wastes covered in the consent decree. EPA deferred any listing decisions on three other wastes. (See 59 FR 66072). As a result, EPA and EDF amended the consent decree (paragraph 1h(v)) to establish deadlines for promulgating listing decisions for two of the deferred wastes. In today's notice, EPA is proposing listing determinations for all three of the deferred wastes.

C. Confidential Business Information (CBI) Issues Regarding This Rule

For the purpose of developing the supporting data for listing rulemakings for the dye and pigment industry, a questionnaire was sent out to industry pursuant to RCRA Section 3007. Some of the information collected from industry and used in the 1994 proposed rule, as well as today's proposed rule, was claimed as confidential. As a result of a consent order and a subsequent preliminary injunction in connection

with a case brought by some of the dye and pigment industry to prevent the disclosure of information claimed as CBI, *Magruder et al.* v. *U.S. EPA*, Civ. No. 94–5768 (D.N.J.), the EPA is enjoined from disclosing information claimed as confidential until all CBI determinations have been made on the data intended to be published in connection with these proposed rules.

Therefore, as with the 1994 proposed rule, we have removed information from this preamble and rule (and supporting background documents), if the information may disclose information claimed as CBI. We note the missing information in the text to this rule, where appropriate. However, we have included data that are not claimed as CBI, whenever such data are available. We have also included data that we obtained from public or non-CBI sources. Wherever we are unable to include pertinent data in a table, the following statement appears in a footnote: ''Relevant data are not included at the present time due to business confidentiality concerns.''

At this time EPA expects that this rule will also need some form of notice of data availability (NODA) or reproposal prior to promulgation as a final rule because of CBI problems. However, EPA is proceeding as noted above to allow publication of as much of the proposed rule as can be shared at this time. Thus, commenters can see as much as possible of EPA's current thinking and can comment on the basic approach, the implementation issues, and other portions of the rule that can reasonably be commented upon, even with the current redactions. We intend to supplement the public record prior to issuing a final listing determination.

D. What Wastes Are Covered in Today's Proposed Rule?

Today's proposal applies only to the dye and pigment manufacturing industries. The end-user markets for dyes and pigments, which include textiles, paper, leather, ink, paints, coatings, plastics, fibers, and other low volume markets, are not within the scope of our listing determination. Consistent with both HSWA Amendments of 1984 and the consent decree, EPA is only making proposed determinations on wastes from the production and manufacturing of dyes and pigments.

In the 1994 proposed rule, the Agency deferred action on three waste streams based on insufficient characterization data, or lack of health-based levels for specific constituents of concern. The ''deferred'' dye and pigment waste streams are the subject of today's proposed rule. The three deferred wastes are:

- Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments, or FD&C colorants.
- Wastewater treatment sludge from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).
- Wastewater treatment sludge from the production of anthraquinone dyes and pigments.

This proposed rule will refer to these wastes as ''filter aids,'' ''TAM sludges,'' and ''anthraquinone sludges'' respectively. Brief descriptions of the three wastes are given below.

Filter Aids

Manufacturers add filter aids (*e.g.*, diatomaceous earth) to some reaction processes to remove particulate impurities. The spent filter aids then are collected in a filter press and the press cake, sometimes called a clarification sludge, is disposed as waste. In some cases, facilities also use filter aids following completed reactions to clarify and purify certain products. The Agency grouped spent filter aids, diatomaceous earth, and adsorbents used in the production of all relevant classes of dyes and pigments, because these wastes typically contain unreacted raw materials, by-products, and impurities. The constituent composition of these filter aids varies depending on the dye or pigment produced and the raw materials used. The Agency deferred a determination as to whether to list Filter Aids in 1994 due to insufficient waste characterization data for this widely variable waste (see 59 FR 66103).

TAM Sludges

As described in the 1994 proposed rule, EPA evaluated wastes from the production of TAM pigments that use aniline as starting material (''feedstock'') separately from other TAM wastewaters and wastewater treatment sludges. This was because the process that uses aniline as a feedstock is somewhat different (see 59 FR 66081 and 66096). We proposed listing decisions for wastes from TAM pigments derived from aniline in the 1994 notice, but deferred a decision for wastewater treatment sludge from the production of TAM dyes and pigments that do not use aniline. Today's proposed rule addresses the wastewater treatment sludges from production of TAM dyes and pigments, excluding TAM pigments using aniline as a feedstock.

The typical wastewater treatment sludge is generated via the treatment of the following process waste streams: equipment washdown, plant run-off, spent scrubber liquid and mother liquor. Wastewater treatment steps usually include: neutralization to adjust pH, clarification, and biological treatment. Pretreatment sludges may be generated from precipitation/filtration in neutralization tanks, and from treatment with adsorbents, such as activated carbon. Biological treatment can also lead to generation of a wastewater treatment sludge. Sludge streams are further processed, typically through filtration and dewatering, prior to disposal. Information related to the management of TAM sludges is not included due to business confidentiality concerns.

In support of the 1994 proposed rule, we attempted to sample TAM sludges (from production of TAM pigments that do not use aniline as a feedstock). However, TAM dyes or pigments were not being produced at the time EPA collected its samples, and we could not attribute any constituents detected to TAM production. Thus, EPA deferred any listing decision for sludges from the production of TAM dyes and pigments (excluding TAM pigments using aniline as a feedstock) due to insufficient waste characterization data (see 59 FR 66095).

Anthraquinone Sludges

The typical anthraquinone sludge is generated via the treatment of process wastewater similar to that described for TAM sludges. From the data collected for the 1994 proposed rule, the only constituents detected in the waste that we could attribute to anthraquinone production did not have health-based benchmarks. EPA was unable to identify any appropriate surrogate compound of known toxicity to estimate the toxicity of these constituents. Because of the lack of health-based benchmarks or reliable surrogates, we deferred any listing determination in the 1994 proposal. As part of the deferral, we requested toxicity data or any suitable surrogates for the two waste constituents (see 59 FR 66101).

E. What Information Did EPA Collect and Use?

1. The RCRA Section 3007 Survey

In support of the 1994 proposed rule, EPA distributed a detailed RCRA section 3007 survey to dye and pigment manufacturing facilities in 1992. The purpose of the questionnaire was to collect information on the 12 specific residuals identified in the 1991 consent decree. Most questions in this survey requested information on waste generation and management activities in

1991. From data provided by questionnaire respondents, EPA identified facilities that manufacture azo, anthraquinone, or triarylmethane dyes or pigments (the number of facilities is not included due to business confidentiality concerns). In the questionnaire, EPA collected information regarding the products manufactured at each facility, raw materials and additives used, and 1991 production volumes. The questionnaire also collected information on the management of the wastes generated by each facility, including waste quantity and how the wastes were managed and disposed.

EPA contacted companies generating the three deferred wastes at issue in today's proposed rule to update the information in the 1992 § 3007 survey. The updated information EPA collected includes the quantities of wastes generated (for the year 1997), and the waste management practices used by the facilities for each of the wastes. The Agency used this updated information in its risk assessment, as described in Section III.D. The following discussion summarizes the information collected for each waste.

Filter Aids

In response to the 1992 questionnaire, a number of dye and pigment manufacturers reported generating filter aid wastes. We are not including information on the number of facilities generating this waste, nor the waste quantities reported for 1991, due to business confidentiality concerns. We also cannot include information collected by EPA in 1998 on the number of generators and the quantities for 1997 for the same reason. Facilities that generated spent filter aids may generate this waste from the production of a wide variety of different dyes and pigments. For example, one facility reported generating a total of 90 Mtons of filter aid wastes in 1997, comprised of 18 filter aids arising from the production of dyes and/or pigments.

TAM Sludges

In response to the 1992 questionnaire, a number of dye and pigment manufacturers reported generating TAM wastewater treatment sludges. We are not including information on the number of facilities generating this waste, nor the waste quantities reported for 1991, due to business confidentiality concerns. We also cannot include information collected by EPA in 1998 on the number of generators and the quantities for 1997 for the same reason. As noted previously, EPA was unable to collect samples of this waste.

Anthraquinone Sludges

In response to the 1992 questionnaire, a number of dye and pigment manufacturers reported generating anthraquinone wastewater treatment sludges. We are not including information on the number of facilities generating this waste, nor the waste quantities reported for 1991, due to business confidentiality concerns. We also cannot include information collected by EPA in 1998 on the number of generators and the quantities for 1997 for the same reason.

As noted above, the only chemicals detected in sludge that could be attributed to anthraquinone production in 1994 did not have health-based benchmarks. EPA did not receive any information in comments on the 1994 proposal that would assist us in calculating health benchmarks. Furthermore, EPA has not subsequently found any suitable surrogates to estimate the toxicity of the compounds in question.

2. Sampling and Analysis Data

For the 1994 proposed rule, the Agency performed sampling to characterize the wastes generated at dye and pigment manufacturing facilities. EPA collected a total of 34 waste samples from facilities to characterize the residuals under evaluation. The analytical results for all the wastes are summarized in the Background Document for Identification and Listing of the Deferred Dye and Pigment Wastes, Appendix A (hereafter called the Listing Background Document) for today's proposal, which is available in the docket. (Note however, that we cannot release much of the analytical data due to business confidentiality concerns). The dye and pigment manufacturers also provided a limited amount of additional waste sampling and analysis data in 1994. These additional data include aggregated analytical results from 19 industry analyses of samples that EPA and the facilities split during sampling visits. An industry trade group (Color Pigment Manufacturers' Association, or CPMA) aggregated this analytical information and submitted this information to EPA in April 1994. CPMA also included this information in the group's public comments on the 1994 proposed rule (see Docket No. F–94–DPLP–FFFFF, item DPLP–0025). We used the available sampling data from these sources to identify potential constituents of concern for use in today's proposed rule.

For the 1994 proposed rule, EPA collected limited sampling data for spent filter aids. Our sampling results were inconclusive for TAM sludges because these products were not manufactured during our sampling visit. While we did succeed in obtaining samples of anthraquinone sludge, we do not have health benchmarks for the two constituents that could be attributed to production of anthraquinone products.

III. Approach Used in This Proposed Listing

A. Summary of Today's Action

In 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, in today's rule we are proposing to use a new approach in these listings, a ''concentration-based listing.'' In a concentration-based listing, a waste would be hazardous unless a determination is made that it does not contain any of the constituents of concern at or above specified levels of concern. This approach draws from the concept of the characteristic approach to defining a hazardous waste, in that whether a waste is hazardous depends on the levels of key constituents in the wastes. We describe this concept in detail later in this notice.

We are proposing concentration-based listings for two of the deferred wastes:

- Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments, or FD&C colorants.
- Wastewater treatment sludge from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).

For both wastes, the listings would apply if the wastes contain any of the constituents identified in the regulation at a concentration equal to or greater than the hazardous level set for that constituent (see tables IV–1 and IV–2 for levels). We are also proposing a set of conditions and requirements that must be met if a facility wishes to claim its waste does not exceed these levels and is, therefore, not covered by the listing.

We are proposing not to list as hazardous the third waste considered:

- Wastewater treatment sludge from the production of anthraquinone dyes and pigments.

In the following sections we describe the concept of a concentration-based listing and the risk assessment methodology we used to develop concentration limits for each wastes. We describe our proposed decisions in more detail in Section IV.

B. What Is a Concentration-Based Listing?

A concentration-based listing specifies constituent-specific levels in a waste that causes the waste to become a listed hazardous waste. In this proposed rule, we identify constituents of concern likely to be present in two categories of dye and pigment wastes. Using risk assessment tools developed to support our hazardous waste identification program, we assessed the potential risks associated with the constituents of concern. From this analysis, we developed ''listing concentrations'' for each of the constituents of concern in the two waste categories.

If you generate any of the wastes included in the two categories of dye and pigment wastes referenced above, you must either determine whether or not your waste is hazardous or assume that it is hazardous as-generated. We are proposing that you determine representative concentrations for the constituents of concern in your waste through sampling and analyses, unless you can use process knowledge to demonstrate that certain constituents are not present in your waste. Based on this information, you must make a determination as to whether or not your waste is a listed hazardous waste. Your waste would be a listed hazardous waste if it contains any of the constituents of concern at a concentration equal to or greater than the hazardous concentration identified for that constituent. If all of the constituents of concern in your waste were below their respective listing concentrations, you would need to notify EPA that your wastes are nonhazardous. The detailed descriptions of the steps you would be required to follow to implement the concentration-based listing are described later in this proposed rule.

C. Why Is a Concentration-Based Approach Being Used for This Listing?

There are several reasons for using a concentration-based approach for listing the deferred dyes and pigments wastes. First, these wastes are generated by an industry that uses batch processes to manufacture a variety of products, in response to market demand for a wide variety of dye and pigment products. Batch operations may result in highly variable wastes at the same facility or different facilities. A concentration-based approach allows the variable wastes generated at these facilities to be evaluated individually for hazard, so only the truly hazardous wastes are listed. This tailored approach is more cost-effective for the industry than a standard listing, and avoids the unnecessary regulation of nonhazardous waste.

Alternatively, EPA could have attempted to collect more information on these specific wastes to support a straightforward listing, i.e., without any concentration limits. However, such a data collection effort would have been difficult due to the wide variety of individual dye or pigment products produced and the potential variability in the waste characteristics. For example, one facility generated 18 filter aid wastes in 1997 arising from the production of different dyes and/or pigments. Gathering sufficient samples to evaluate all potential filter aid wastes would require a large commitment of scarce Agency resources that would have been beyond the reasonable scope of this rulemaking, especially given the time constraints of the existing Consent Decree. Given the relatively low quantities of the individual filter aids produced, EPA does not feel such an effort was justified.

Second, many manufacturers in the dye and pigment industries want to keep facility-specific product and waste information confidential. These manufacturers are concerned that release of such information could cause competitive harm. A concentration-based listing allows us to rely less on CBI, since we do not use this information directly to set the listing concentrations. This means we don't use specific information, such as product formulations or concentrations of constituents in the wastes, to set hazardous concentration levels for constituents of concern. As noted earlier, however, in this particular listing EPA still must resolve the CBI claims on some specific data prior to release.

Finally, a concentration-based listing approach may provide an incentive for hazardous waste generating facilities to modify their manufacturing processes or treat their wastes. For example, if a facility has a listed hazardous waste based on constituent-specific concentration levels established by EPA, it also knows the required concentrations levels of constituents in its waste below which its waste would become nonhazardous. Therefore, the facility may decide to modify its manufacturing process in order to generate a nonhazardous waste. Thus, this approach encourages waste minimization.

Section 1003 of the HSWA indicates that one of RCRA's goals is to promote protection of human health and the environment and to conserve valuable material and energy resources by ''minimizing the generation of hazardous waste and the land disposal of hazardous waste by encouraging process substitution, materials recovery, properly conducted recycling, and reuse and treatment.'' Section 1003 further provides that it is a national policy of the United States that, whenever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible.

The Pollution Prevention Act of 1990 (42 U.S.C. 13101 *et seq.*, Pub. L. 101–508, November 5, 1990) provides a hierarchy of pollution prevention approaches. Pollution should be prevented or reduced; pollution that cannot be prevented should be recycled or reused in an environmentally safe manner; pollution that cannot be prevented/reduced or recycled should be treated; and disposal or release into the environment should be chosen only as a last resort. A concentration-based listing may prevent pollution by discouraging generation of wastes with high levels of toxic constituents. If EPA provides a concentration-based target in the listing, generators would have the regulatory and economic incentive to meet the reduced levels.

D. What Risk Assessment Approach Did EPA Use?

Under a concentration-based listing approach, EPA must calculate concentration levels, or ''listing levels,'' in the waste that would present a hazard. To accomplish this, the Agency: (1) Selected constituents of potential concern in the waste, (2) chose a plausible waste management scenario, (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 concentrations that would yield the target risk level at the point of exposure.

The following sections present an overview of the analysis EPA used to calculate risk-based listing levels for filter aids and TAM sludges generated during the manufacture of organic dye and pigment products. You will find more details of how we selected the constituents of concern in the Listing Background Document. Details of the risk assessment are provided in the document in the docket entitled Development of Risk-Based Listing Concentrations for Hazardous Constituents Contained in Spent Filter Aids and Triarylmethane (TAM) Wastewater Treatment Sludges (hereafter called the Risk Assessment Background Document).

1. Choosing the Constituents of Concern

Our initial universe of constituents of potential concern included any constituent detected in any wastestream from the production of all classes of dyes and pigments we examined (i.e., all wastes sampled associated with the production of azo, TAM, and anthraquinone dyes or pigments, including FD& C colorants). We typically obtain samples from the specific wastes of concern for a standard listing evaluation. However, obtaining representative samples of filter aids and TAM sludges was difficult, as noted in the 1994 proposal (see 59 FR 66095 and 66103), due to widely varying wastes and batch processes. We believe that the broad universe of constituents detected in all wastes examined provides an appropriate starting point for selecting constituents of concern for filter aids, because these wastes may be generated from the production of many kinds of dyes and pigments. Because TAM sludge is a much more narrowly defined waste, we relied on available information regarding constituents used in TAM production to determine what constituents we expect in the waste.

Our primary source of potential constituents was the set of analytical data EPA collected to support the 1994 proposed rule described in Section I.E.2 of today's notice. We also examined the limited analytical data from industry to confirm the presence of constituents. These data sets included sampling results for all wastes under consideration in the 1994 proposal, because the available analytical data for the three specific wastes at issue are limited. For filter aids, EPA obtained some samples in support of the 1994 proposed rule. However, filter aids may potentially contain a variety of constituents, depending on what products and processes are in use by different facilities. Therefore, the limited waste analysis data for filter aids alone were not adequate to establish constituents of concern. We have no waste analysis data that would allow us to identify specific constituents of concern for TAM or anthraquinone sludges. As noted in Section II.D, our sampling results were inconclusive for TAM sludges because TAM dyes or pigments were not being produced at the time EPA collected its samples. While we did succeed in obtaining samples of anthraquinone sludge, we do not have health benchmarks for the two constituents that could be attributed to production of anthraquinone products. Thus, we did not pursue a listing for this waste.

We used the analytical data from all wastes to develop an initial list of potential chemicals of concern. We then reduced and augmented this list based on several factors. First, we can only develop a concentration level if a health benchmark exists for the chemical. Therefore, we removed constituents without health benchmarks from further evaluation. The sources we used for health benchmark data are summarized below; the Risk Assessment Background Document contains further information (see Appendix E).

Due to the lack of health-based benchmarks, we excluded certain constituents from consideration in today's proposed rule that we previously evaluated for azo dye and pigment wastes in the 1994 proposed rule. These constituents are acetoacetanilide (AAA), acetoacet-o-toluidine (AAOT), and acetoacet-o-anisidine (AAOA). For the 1994 proposal, we derived health based numbers based on a Structural Activity Relationship (SAR) analysis. The Agency has since reevaluated and revised the SAR analysis based on comments received in response to the 1994 proposal. The revised analysis, which has been independently peer reviewed, concludes that the current available data are insufficient to make a quantitative estimation of the carcinogenic potential of these compounds, or to establish provisional non-cancer benchmarks. The revised toxicological analysis for these compounds and the peer review documents are provided in Appendix A to the Risk Assessment Background Document.

We then screened the remaining potential constituents to remove chemicals that we believed were of little use in defining the hazardous characteristic of the two wastes at issue. In this screen we considered the prevalence with which a constituent is used in the manufacturing of the different classes of dyes and pigments at issue in the consent decree, the likelihood that a chemical could be attributed to such production, and the frequency with which a chemical was detected in wastes samples. In considering if the constituents detected are likely to be derived from dye or pigment production, we used publicly available information from the Colour Index International (3rd edition, 1996). For example, we retained any chemicals that were detected that are commonly used as raw materials in the production of the dyes and pigments at issue (e.g., aniline is widely used in the production of azo products; see Colour Index, vol. 4, pages 4009 and 4699). We also kept some chemicals detected that have no apparent use as raw materials, because they may be impurities or degradation products from chemicals used in the manufacturing process (e.g., naphthalene may be an impurity in a commonly used raw material, beta-naphthol). We removed some constituents, such as acetone and methylene chloride, that were detected frequently in samples, because they are common laboratory contaminants and/or common solvents that have no reported use in the production of these dyes and pigments. While such constituents may be present in wastes, we did not consider them further because we could not reasonably attribute them to dye and pigment production processes sampled. We dropped other constituents that had little or no reported use in the Colour Index; the dropped constituents were also rarely found in waste samples.

We are proposing to include the selected core chemicals in Table III–1 as constituents of concern for defining the two listed wastes. This table summarizes the frequency with which we detected the chemicals in waste samples, and prevalence of use of the chemicals in the production of the three dye and pigment classes (azo, TAM, and anthraquinone) as found in the Colour Index. For filter aids we included constituents on the final list of constituents of concern if we detected the chemicals with at least a low frequency (i.e, in more than one sample), and we found some evidence that industry used the chemicals in the production of the dyes and pigments at issue. We also selected several chemicals that we believe may be degradation products of other raw materials (e.g., p-phenylenediamine), or possible impurities in other starting materials (e.g., naphthalene). Finally, we included several compounds that may arise from TAM production, as described below, even though we do not have analytical data showing these chemicals are present in wastes from this industry. (More details of our rationale for choosing chemicals of concern are given in the Listing Background Document, Section 4).

We chose to add two chemicals for consideration as constituents of concern that were reported to be used in the production of TAM products, even though we did not find them in any waste samples. In the case of benzaldehyde, we did not analyze any of the wastes for this compound. However, this chemical is reported to be used in the production of TAM products (see Colour Index, vol.4, page 4727). We analyzed for the other chemical (the

identity is not given due to business confidentiality concerns), but we did not find it in any samples. However, the 3007 Survey indicated significant use of this chemical in the production of TAM dyes. EPA did not succeed in obtaining waste samples during the production of TAM dye and pigments (excluding TAM pigments using aniline as a feedstock). Therefore, based on the known uses in TAM manufacturing, we considered these two chemicals as potential constituents of concern.

In the case of TAM sludges, we considered proposing the same list of core constituents used for filter aids. We considered this option primarily because we have no analytical data that reflects wastes arising from TAM production. (We do have data for wastes from the production of TAM pigments using aniline as a feedstock; this subset of TAM wastes were dealt with in the 1994 proposed rule and is not at issue in today's notice. We decided to propose a list based on the constituents that are known to be used in the manufacturing of TAM dyes or pigments. Using public sources of information (i.e., Colour Index), we were able to identify reactants reported in use for TAM products. Except as noted previously, the constituents identified in this way are consistent with the constituents reported in the 3007 Survey. This analysis led to the list of constituents of concern for TAM sludges.

The publicly available information we used was consistent with the information provided by industry in responses to the 3007 Survey, except in a few cases. In some instances (the identities are not given due to business confidentiality concerns), the Colour Index showed low to moderate use of the chemicals that was not confirmed in the 3007 Survey. Conversely, in the case of another chemical (the identity is not given due to business confidentiality concerns), the 3007 Survey indicated significant use in the production of TAM dyes, while the Colour Index did not. In cases where we had these discrepancies, we relied on the source that showed use and assumed that these chemicals may be used in production.

In choosing core constituents of concern for a concentration-based listing for filter aids and TAM sludges, we considered adding other constituents shown in Table III–2. We considered these chemicals because they were detected with a moderate frequency, they had some use in manufacturing the dye and pigment products of concern, or they are in a class of compounds that have been historically linked to dye production (benzidines). However, we believe that these constituents are unlikely to be present in these two specific wastes at levels of concern. Some of the chemicals in Table III–2 could not be linked to the production of the dye and pigment classes at issue. We did not include chemicals in the final list of core constituents of concern unless we could find some evidence that the presence of a chemical was related to the production of the classes of the dyes and pigments of interest (for filter aids, the production of azo, TAM, or anthraquinone products; for TAM sludges, the production of TAM products, excluding TAM pigments using aniline as a feedstock). This is because many waste samples were wastewaters or sludges collected from combined wastewater treatment systems, and such systems typically receive waste streams from various other production processes at facilities. We did not include other chemicals because they were never or rarely detected in EPA's analysis.

TABLE III–1.—CORE CONSTITUENTS OF CONCERN IN FILTER AIDS AND TAM SLUDGES

Constituent	Core constituents of concern for filter aids (FA) and/or TAM sludges (T)	Frequency of detection[1]	Use in production of dye and pigment classes[2]	Comments
Aniline	FA	High; S	High use (Azo); some use in TAM pigment (aniline based)	
Benzaldehyde	FA, T	Not analyzed	Moderate use in TAM products**	Not analyzed, but common reactant in TAM production.
Chloroaniline, p-	FA	Moderate, S	Rare use (Azo)	Aromatic amine; possible contaminant.
Cresol, p-	FA	Moderate, S	Low use (Azo) found in Colour Index;**	Industry split samples did not distinguish meta and para isomers.
Dimethoxybenzidine, 3,3′-	FA	Low, S	Moderate use (Azo)	
Dimethylaniline, N,N-	FA, T	Rare	Moderate to high use found for TAM dye production; rare use otherwise.	Rarely detected, but TAM waste not sampled and common reactant in TAM production.
Diphenylamine	FA, T	Moderate	Low use (Azo); rare use in TAMs	Indistinguishable from N-Nitrosodiphenylamine by EPA method (GC/MS).
Diphenylhydrazine, 1,2-	FA	Moderate	None reported	Possible oxidation product of aniline; indistinguishable from azobenzene by EPA method (GC/MS).
Formaldehyde	FA, T	Moderate, S	Moderate use for TAM; low use for others	
Naphthalene	FA	Moderate/High	None reported	Possible impurity in common Azo raw material (beta-naphthol).
Phenol	FA	Moderate/High, S	Moderate use (Azo)	
Phenylenediamine, p-(4-aminoaniline).	FA	Low/Moderate	Moderate use (Azo)	Possible hydrolysis product of other azo raw materials (aminoacetoacetanilide); indistinguishable from o-isomer in EPA analysis.

TABLE III–1.—CORE CONSTITUENTS OF CONCERN IN FILTER AIDS AND TAM SLUDGES—Continued

Constituent	Core constituents of concern for filter aids (FA) and/or TAM sludges (T)	Frequency of detection[1]	Use in production of dye and pigment classes[2]	Comments
Toluidine, o-(2-aminotoluene).	FA, T	Moderate, S	Moderate use (Azo); low use (TAM)	Hydrolysis product of raw materials (AAOT); EPA could not separate o- and p-isomers during analysis.
Toluidine, p-(4-aminotoluene).	FA, T	Moderate, S	Low to moderate uses (TAM and anthraquinone).	EPA could not separate o-and p-isomers during analysis.
(**)				
(**)				

[1] As found in EPA analysis of samples of all dye and pigment wastes from production of azo, TAM, and anthraquinone dyes/pigments and FD&C colorants; ''ND'' means not detected; ''S'' denotes reported in industry split samples.
[2] From the Colour Index International, 3rd edition, 1996.
**Relevant data are not included at the present time for a number of constituents due to business confidentiality concerns.

TABLE III–2.—OTHER CONSTITUENTS OF POSSIBLE CONCERN

Constituent	Frequency of detection[1]	Use in production of dye and pigment classes[2]	Comments
Benzene	Moderate, S	None reported	Found in waste, but no use; common contaminant from many industrial processes.
Benzidine	Low	No reported use domestically.	Used historically (Azo), but no current domestic use reported; only found in wastes from processes that do not use filter aids.
Chlorobenzene	Moderate, S	None reported	No known use; other uses as solvent.
Chloroform	Moderate, S	None reported	No use; contaminant from treated water supplies; other uses as solvent.
Dichlorobenzene, 1,2-	Moderate	None reported	No use in azo/TAM/anthraquinone production; solvent uses in other dye production (Oxazine dyes).[2]
Phenylenediamine, o-(2-aminoaniline).	(See comments)	Low use (anthraquinone)	EPA found analytical methods unreliable (very poor recoveries); may be indistinguishable from p-isomer.
Toluidine, 5-nitro-o-(2-methyl-5-nitroaniline).	ND, S	Moderate use (Azo)	Not detected in any EPA samples of azo wastes and reported in only 1 industry sample.
(**)			

[1] As found in EPA analysis of samples of all dye and pigment wastes from production of azo, TAM, and anthraquinone dyes/pigments and FD&C colorants; ''ND'' means not detected; ''S'' denotes reported in industry split samples.
[2] From the Colour Index International, 3rd edition, 1996.
** Relevant data are not included at the present time for a number of constituents due to business confidentiality concerns.

We believe that using analytical data from all dye and pigment wastes sampled is clearly appropriate for filter aids. This is because filter aids are used to treat and purify a wide variety of wastes derived from all of the classes of dye and pigment products (azo, triarylmethane, and anthraquinone). The shorter list for TAM sludges also is appropriate, due to the more limited set of potential waste constituents for this single dye and pigment class. We calculated concentration limits for all constituents in Tables III–1 and III–2 for both spent filter aids and TAM sludges, as we describe later in this notice.

We are seeking comment on whether the constituents of concern we selected are appropriate for the concentration-based listings for the two wastes under consideration. We are interested in any information on the potential for these, or any other constituents in Table III–2, to be in these wastes at levels of concern. We believe that it is reasonable to select constituents that we can link to the dye and pigment processes under evaluation. To require testing for an extensive list of constituents without adequate reason would lead to unnecessary analysis by industry in evaluating if their wastes meet the listing levels. After considering information provided in comments on today's proposed rule, we may choose to add potential constituents from Table III–2, or delete proposed constituents for the two wastes.

Analytical Issues

We found problems in our chemical analysis of dye and pigment waste samples for some of the constituents in Table III–1. In a few cases, our analyses could not distinguish between two compounds when we used the usual EPA methods for semivolatile organic chemicals, GC/MS method 8270 in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods; SW–846, hereafter called SW–846). We found problems for four pairs of compounds: diphenylamine/N-nitrosodiphenylamine; 1,2-diphenylhydrazine/azobenzene; o-toluidine/p-toluidine; and o-phenylenediamine/p-phenylenediamine. We propose to deal with these problems as outlined below.

N-Nitrosodiphenylamine breaks down to diphenylamine in the method we used; therefore these two chemicals could not be distinguished. This means

that detection by this method could be due to either compound being in the waste. We found no reported use of the N-nitroso-derivative, but we did find diphenylamine has some use in the production of azo and TAM products. Therefore, for this pair we selected diphenylamine as the likely constituent of concern. This means that, if we finalize diphenylamine as a constituent in the concentration based listings, generators would analyze for this constituent and assume any concentration measured is diphenylamine.

Similarly, we could not distinguish the compounds 1,2-diphenylhydrazine and azobenzene in the analytical method used, because these chemicals interconvert readily under analytical conditions. Thus, our data showed that one or both of these compounds were present in waste samples, but we could not tell which one. In this case, we did not find any reported use of either chemical in dye or pigment production processes. However we believe that the presence of either may be explained by oxidation of aniline from processes that use aniline as a reactant. Thus, in this case we are proposing to include the constituent with the lower concentration level (1,2-diphenylhydrazine) to be protective. This means that generators would analyze their waste for the total level of 1,2-diphenylhydrazine/azobenzene, and assume that the amount detected is due only to the more toxic 1,2-diphenylhydrazine. This is also reasonable because these compounds may readily interconvert in wastes or the environment, thus it is prudent to set the listing level for the more toxic component.

In our analysis we also could not separate two isomers of toluidine (o-toluidine and p-toluidine) and phenylenediamine (o-phenylenediamine and p-phenylenediamine). While it may be possible to distinguish these isomers using other analytical methods, we have no data at this time to indicate this. For the toluidine isomers, we are proposing to include both isomers as constituents of concern. If generators cannot separate these isomers, they could determine a total quantity for both. In the absence of information on which isomer is expected in the waste, generators would assume that the measured concentration is due to the more toxic o-toluidine. Generators could use their knowledge of their production processes, however, to definitively rule out the presence of one of the isomers, and in this way identify which isomer is present. For example, if generators know that only one isomer is used in any of the relevant processes, they could document this and claim this as part of their determination. Note that the risk-based concentration levels we propose to set for these two chemicals are similar (i.e, they differ by less than a factor of two for both wastes), thus the practical distinction between these isomers is relatively unimportant, unless generators measure them at levels approaching the listing levels.

For the o- and p-phenylenediamine isomers, we reviewed the analytical data and now believe that o-phenylenediamine cannot be reliably measured. We found that we could not reliably recover the chemical from samples with known concentrations (spiked samples). In addition, the reported usage of o-phenylenediamine in the production of dyes and pigments is relatively limited compared to the use of p-phenylenediamine (see Colour Index, vol. 4, page 4822). Furthermore, p-phenylenediamine may also form from the degradation of a widely used azo precursor, p-aminoacetoacetanilide. Therefore, because of these analytical problems, and also because its use in dye or pigment production is limited, we are proposing not to include o-phenylenediamine in the list of constituents of concern for either waste. Thus, if we finalize phenylenediamine as a constituent of concern for filter aids, generators would be required only to determine if p-phenylenediamine is present in their wastes below the listing levels.

We seek comment on these analytical issues associated with the potential constituents of concern. We are especially interested in any information on methods that may reliably resolve the analytical problems noted above. We also seek comment on the problematic chemicals we identified, and whether EPA should adopt another approach. One approach might be to simply avoid using any of these compounds on the list of constituents of concern due to the analytical problems. However, due to their potential importance, we believe at this time that the above approach is a reasonable attempt to use these chemicals in setting listing levels. Another approach would be to use the approach described for the 1,2-diphenylhydrazine/azobenzene pair, i.e., if the generators cannot resolve the constituents in the chemical analysis, they would always assume that the more toxic constituent was in fact present. We believe this may be overly conservative in some cases, but solicit comment on this and other possible approaches.

2. Choosing the Risk Assessment Scenarios To Evaluate

For both filter aids and TAM sludges, we evaluated the scenario of disposal in unlined municipal landfills and assessed the impact of the release of leachate from these landfills to the groundwater. In past listings we have found that landfill disposal of wastewater treatment sludges and similar solids is quite common (e.g., see EPA's recent listing for petroleum refining wastes, 63 FR 42110; August 6, 1998). The updated information we collected for both wastes showed that some generators sent these wastes to municipal landfills. In both cases, EPA chose to evaluate this scenario. However due to constraints on release of information claimed as CBI, we cannot discuss in detail the prevalence of this disposal practice or the extent of other practices.

We used the updated 1997 waste volumes (i.e., waste quantities) reported by facilities in our modeling of potential releases from municipal landfills. In the case of filter aids, we combined the filter aids generated by each facility and arrayed these combined waste volumes into a distribution that would represent quantities of filter aids that go to municipal landfills. We then used this distribution of waste volumes as a key input parameter into our modeling.

For TAM sludges (excluding sludges associated with TAM pigments using aniline as a feedstock), the updated data showed few generators of this waste. One facility sent 57 metric tons of sludge derived solely from the production of TAM dyes or pigments to a municipal landfill. This specific sludge was generated from wastewater that arose from the production of TAM products, and did not include wastewaters from other production processes. We cannot discuss the volumes or management practices of the other facilities at this time due to CBI constraints. We used the one volume associated with the dedicated sludge in all modeling for TAM sludge disposal in municipal landfills.

Under Federal regulations, generators are free to send either waste to any Subtitle D municipal landfill. We assumed that any municipal landfill described in EPA's nation-wide distribution of municipal landfills was possible, with some geographic limitations reflecting the locations of the dye and pigment manufacturers (described further below). Therefore, we used the distribution of data available for each of the parameters needed to model potential risk associated with disposal of dye and pigment waste

streams in municipal landfills. The primary source of data from which we selected key modeling inputs (e.g., surface area, active life, distance to well) is EPA's 1988 National Survey of Solid Waste Municipal Landfill Facilities. These parameters are described in more detail in the Risk Assessment Background Document (Section 4).

EPA has promulgated regulations governing the design and operation of municipal landfills (see 40 CFR Part 258), and our modeling assumptions reflected some of these requirements when appropriate (e.g., daily cover). We chose to model a landfill without the full liner system described in the regulations, because it is reasonable to assume that many landfills now and in the future may not have synthetic liners. For example, the design criteria in 258.40 apply only to new units or lateral expansions of existing units. Existing landfills (i.e., those in existence prior to the effective date as defined in § 258.1(e)) do not have to meet the design requirements in § 258.40 (e.g., liner systems). Furthermore, the regulations allow exemptions from the standards depending on the location and size of the landfill (Section 258.1(f)), and States may approve alternative designs for new units or lateral expansions based on performance standards (§ 258.40(a)(1)). Finally, EPA is in the process of authorizing States to implement the municipal landfill regulations, and States are still working to issue permits and bring all landfills up to the regulatory requirements. Given the existing exemptions in the regulations, and the uncertainty in how many landfills have liner systems, we believe it is prudent to base our modeling on landfills without a liner.

Another reason the modeling of unlined landfills appears prudent is because industrial wastes also can go to unlined landfills that do not take municipal waste (i.e., industrial nonhazardous waste landfills), and thus would not be subject to those standards. We are unaware of any legal requirement that these wastes could not go to such non-municipal waste landfills. Given the similarities in the disposal practices (municipal and industrial nonhazardous waste landfills), we believe that an unlined landfill scenario is reasonable.

EPA used the approximate geographic locations of the facilities that generated spent filter aids and TAM sludges to estimate location parameters needed to conduct the risk assessment. We used geographic location to identify the soil, climate, and hydrogeologic parameters used in the fate and transport modeling. Location related parameters required for the risk assessment and specific inputs and data distributions used to model risk from these units are described in detail in the Risk Assessment Background Document (Section 4).

As noted above, there is uncertainty in how many landfills that might receive these waste have liner systems in place. EPA acknowledges that a liner system would serve to contain waste leachate, and would lessen the risk while such a liner system was intact. We seek comment as to whether an alternative regulatory approach should be taken for wastes sent to landfills with liners or certain environmental controls.

3. The Receptors and Exposure Pathways Evaluated

The primary receptors we considered in this analysis are adults and children exposed via ingestion (i.e., drinking water) and noningestion (e.g. showering) exposure pathways to water from groundwater wells contaminated by the leachate from the municipal landfill receiving filter aid or TAM sludge wastes. We considered only receptors with residential drinking water wells for the groundwater pathway. We assumed all community wells and other municipal water supplies are treated and, therefore, would not be contaminated with constituents from the wastes of concern.

We also evaluated receptors from nongroundwater pathways in our sensitivity analysis. We assumed the receptors for these pathways were farmers and their children who live in close proximity to the municipal landfill. We chose these receptors because their exposure results in the highest potential risk for nongroundwater pathways, which was appropriate for the initial sensitivity or screening analysis. Nongroundwater exposure pathways for filter aids and TAM sludges disposed in municipal landfills result from the emission of vapors from these landfilled wastes. We evaluated exposure from both direct and indirect nongroundwater pathways. The direct pathway consists of dispersal of vapors from the landfill through the air pathway directly to the receptor via the inhalation. Indirect pathways include deposition to soil, transfer to fruits, vegetables, grain, and forage (air-to-plant transfer and soil-to-plant transfer), and uptake by grazing animals. The plant and animal products are then consumed by the farm family.

E. How Did EPA Estimate Exposure Concentrations?

1. Risk Assessment Methods

To calculate listing levels for constituents of concern, we needed to determine what concentrations at the point of exposure would be associated with levels in the wastes. We conducted the risk assessment in three stages: (1) the sensitivity analysis, (2) the deterministic analysis, and (3) the probabilistic analysis for the groundwater pathways. For the nongroundwater pathways, the Agency used results from the sensitivity analysis to screen out nongroundwater risks, because they were not significant relative to potential groundwater risks associated with disposal of wastes in landfills.

a. Sensitivity Analysis. The purpose of our sensitivity analysis was to identify the most sensitive or risk-driving parameters in the risk assessment model and to determine high-end and central tendency values for subsequent use in the deterministic analysis. A high-end parameter corresponds to its 90th or 10th percentile value depending on whether a high or low value of that parameter results in a higher predicted risk. We conducted the sensitivity analysis by varying each parameter or set of linked parameters to high ends one at a time, while holding all other variables in the analysis at central tendency. We then compared the risk results using a single high-end parameter to the results obtained when all values are set at central tendency. Using this method, we identified the two most sensitive high end parameters that resulted in the highest risks. We then set these parameters to their high-end values in the subsequent deterministic analysis. For the groundwater pathway, we used the sensitivity analysis to identify high-end parameters for use in the deterministic assessment of risk from groundwater.

For the nongroundwater pathway, we were able to use the results from the sensitivity analysis as a screening level analysis of nongroundwater risks. Originally, we intended to use the nongroundwater sensitivity analysis to identify the most sensitive parameters for use in a deterministic analysis of nongroundwater risks from the dye and pigment waste streams. However, we were able to use the results of the nongroundwater sensitivity analysis to screen out or eliminate nongroundwater risks as a primary concern for dye and pigment industry wastes. We screened out nongroundwater risks by comparing the results of the nongroundwater sensitivity analysis to the results of the

groundwater sensitivity analysis, which we performed using the same inputs for common parameters. In all cases, the groundwater risk analysis produced higher risk estimates for all constituents. Since the purpose of this analysis was to set risk-based concentration limits, we focused our analysis on the pathway of most concern (i.e., highest risk) to determine protective concentrations. Because the groundwater pathway presented the highest risk, we only evaluated the groundwater pathway further using deterministic and Monte Carlo analyses. In other words, risk-based concentrations set based on groundwater pathway risks will also be protective of nongroundwater pathway risks. Based on this finding, no further modeling of nongroundwater risks was conducted. The Risk Assessment Background Document describes the sensitivity analysis for both groundwater and nongroundwater pathways and presents the results in Appendices A and H.

b. Deterministic Analysis. The ''deterministic'' method uses single values for input parameters in the models to produce a point estimate of risk or hazard. For this analysis, we used a double high-end risk assessment. In this method, we set the two parameters identified to be most sensitive at their high-end values and all other parameters are set at central tendency. A central tendency risk estimate is the point estimate in which all variables are set at central tendency values. We presume the high-end risk estimate to be a plausible estimate of individual risk for those persons at the upper end of the risk distribution. By using these descriptors we intend to convey estimates of exposure in the upper end of the distribution (i.e., above the 90th percentile), while avoiding estimates that are beyond the true distribution. (See the EPA guidance memo entitled, Guidance on Risk Characterization for Risk Managers, 1992; hereafter known as the Habicht memo, 1992). We applied the deterministic methodology to assess groundwater pathway risks from disposal of spent filter aid and TAM sludges in municipal landfills. The parameters that we found to be the two key high-end parameters varied somewhat by chemical and waste. However, these parameters were some combination of waste quantity, well location, and duration of exposure.

c. Probabilistic Analysis (Monte Carlo Method). In the probabilistic analysis, we vary sensitive parameters for which distributions of data are available. Parameters varied for this analysis include waste volumes, landfill size, parameters related to the location of the landfill such as climate and hydrogeologic data, location of the receptor, and exposure factors (e.g., drinking water ingestion rates). The probabilistic analysis is conducted using a Monte Carlo methodology. Monte Carlo analysis provides a means of quantifying some variability and uncertainty in risk assessments by using distributions that describe the full range of values that the various input parameters may have. Some of the parameters in the probabilistic analysis are set as constant values because (1) there are insufficient data to develop a distribution, (2) simplifying assumptions are made, (3) site specific constants are available, or (4) the analysis has not been shown to be sensitive to the values of the parameter, that is, even if the parameter is varied, the risk results do not vary significantly.

Monte Carlo simulation is a statistical technique that calculates an individual risk value or hazard quotient for each category of parameters that affect or determine risk. For each calculation, the Monte Carlo simulation uses parameter values that are randomly selected from the distribution of values available for each parameter. The range of values selected for the input parameters reflects the distribution of values corresponding to each input parameter. The repetitive calculations take many randomly selected combinations of input parameters to generate a range of risk results. Based on the distribution of the output, we can determine a risk or hazard level representing the high end (e.g., 90th or 95th percentile) or central tendency (i.e., 50th percentile). Although the simulation is internally complex, commercial software performs the calculations as a single operation, presenting a distribution of risk results. From these results, we can determine the percentile distribution of exposure point concentrations and risks for the selected risk assessment scenario. We assessed potential groundwater pathway risks from disposal of filter aid and TAM wastes in municipal landfills using the probabilistic risk assessment method.

Monte Carlo simulation can be used to simulate the effects of natural variability and informational uncertainty that often accompany many actual environmental conditions. Further, information on the range and likelihood of possible values for these parameters is produced using this technique. When compared with alternative approaches for assessing parameter uncertainty or variability, the Monte Carlo technique has the advantages of very general applicability, no inherent restrictions on input distributions or input-output relationships, and relatively straightforward computations. Also, Monte Carlo application results can be used to satisfactorily calculate uncertainty, and to quantify the degree of conservatism used. With deterministic analyses, an alternative to Monte Carlo, it is often not possible to quantify the level of protection represented by the results. However, some potential limitations may exist when applying Monte Carlo techniques in modeling efforts. Variability (inherent variation in a measure over time and space) and uncertainty (lack of knowledge) are often difficult to distinguish within applications. Also, one must account for correlations among the various data parameters to avoid distorting results. As explained in Section III.H, we relied on the Monte Carlo approach to set listing levels for today's proposal.

2. Fate and Transport Modeling

The risk analysis employs several key fate and transport models. The models include a landfill partitioning model based upon the equations presented in a series of articles by Jury *et al.* We used this model to estimate the concentration of leachate from the landfill and the emission rate for volatile constituents from the landfill. We applied EPA's Industrial Source Complex Short Term, version 3 (ISCST3) to estimate the dispersion and deposition of vapors emitted from the municipal landfill. For estimating the concentration of constituents of concern at the residential drinking water well, we used the groundwater model EPACMTP or *EPA's C*omposite *M*odel for Leachate Migration with *T*ransformation *P*roducts. Further details and references for these models are presented in the Risk Assessment Background Document (Section 5.2.2).

a. Landfill Partitioning Model. We used the Jury equations to estimate fate and transport of constituents in the nongroundwater pathways from the landfill to the receptor and to estimate leachate from the landfill. Using a model based on the Jury equations, we projected the contaminant loss from a landfill due to volatilization, run-off, degradation, and leaching. The Jury equations partition the waste in the landfill to waste, air, and pore water and calculate potential losses from leaching, volatilization, and degradation. The landfill partitioning model evaluates contaminant losses over both the active waste disposal period and after the landfill is closed. We used the landfill partitioning model to conduct the

sensitivity, deterministic, and Monte Carlo analyses.

b. Air Model. We used the ISCST3 air dispersion and deposition model to estimate the vapor air concentrations and deposition rates needed to develop relative risk estimates associated with vapor air emissions from the municipal landfill. We estimated air pathway risks using emissions estimates from the landfill partitioning model as inputs to the ISCST3 air model, and using ISCST3 to estimate the air concentration and deposition of vapor for each constituent at receptor locations. This modeling step was only needed for the sensitivity analysis to estimate risks from non-groundwater pathways.

c. Groundwater Model. We used the EPACMTP groundwater model to estimate the concentration of constituents of concern at the residential drinking water well. We conducted the groundwater modeling using six surrogate compounds to represent the movement of all constituents of concern through the groundwater pathway. Identification of surrogate compounds provides a means of minimizing the modeling runs required to model the large number of constituents evaluated for this assessment. For this assessment, organic constituents are grouped into six categories based on like chemical and physical properties. Sorption potential and hydrolysis rate are the key parameters used to group constituents; however, for the constituents of concern in today's proposed rule, hydrolysis was not important. Therefore, the only constituent-specific parameter of importance for transport of the organic compounds of interest was the sorption potential (i.e., the organic carbon partition coefficient, K_{oc}; this is a measure of the tendency for a chemical to adsorb to organic material in soils). For computational efficiency, we only modeled the surrogate constituent in each category, and then applied the modeling results for the surrogate to each constituent in the category. We found that the dilution and attenuation of the constituents we evaluated did not vary significantly (*i.e.*, less that a factor of 2), even with larger differences in K_{oc}. Thus, the use of surrogates did not introduce any appreciable uncertainty into the final results. See Appendix C of the Risk Assessment Background Document for details of the designation of constituent categories and identification of surrogate compounds.

We used the EPACMPT model to conduct the sensitivity analysis, deterministic analysis, and Monte Carlo analysis for the groundwater pathway. The groundwater pathway modeling yields the groundwater exposure concentrations resulting from the release of waste constituents from the landfill. Precipitation that percolates through the waste unit generates leachate, which can infiltrate from the bottom of the landfill into the subsurface. The waste constituents dissolved in the leachate (as predicted by the partitioning model) are then transported via aqueous phase migration through the vadose zone to the underlying saturated zone and then down gradient to a ground water receptor well. We project the concentration at the intake point of a hypothetical groundwater drinking water well or receptor well, located at a specified distance from the down gradient edge of the waste management unit.

We located the residential wells down gradient from the landfill and within the top ten meters of a plume of groundwater contaminated by the leachate from the municipal landfill. As noted previously, we used distances of receptor wells from waste management units from EPA's National Survey of Municipal Landfills. The distance from the landfill to the receptor well, and the location of the well in relation to the plume of contaminated groundwater, are important parameters in the groundwater model. This is because the projected concentrations of constituents at the well, and the corresponding risks, increase as the well location is moved closer to the source within the plume.

For the Monte Carlo analysis, we placed the receptor well downgradient from the waste management unit at a radial distance of up to 1,610 m; the distance for each simulation was taken from the distribution of distances gathered by EPA in its survey noted above. We assumed the lateral location of the well to be randomly distributed within the estimated lateral extent of the plume. For the deterministic analysis, the downgradient receptor well location was fixed within the lateral extent of the plume (most often at the high end value of 102 meters from the landfill).

The objective of this ground-water modeling was to compute the amount of dilution and attenuation a contaminant may undergo as it migrates from a landfill to a ground-water well. The amount of dilution and attenuation is expressed as a dilution/attenuation factor (DAF), which represents the ratio of the initial leachate concentration leaving the landfill to the ground-water receptor well concentration. The high-end DAFs for the different constituents did not vary much for the two wastes, i.e., the DAFs were in the range of 3 to 5.

The groundwater model accounts for the following processes affecting contaminant fate and transport: advection, hydrodynamic dispersion, linear or nonlinear equilibrium sorption, chained first-order decay reactions, and dilution from recharge in the saturated zone. EPACMTP was run in both deterministic mode and Monte Carlo mode. In the deterministic mode, we set the two most sensitive variables to their high end values, while keeping all other parameters set at central tendency. In the probabilistic Monte Carlo mode, the model randomly selected parameter values from their respective statistical distributions. The Monte Carlo procedure allows assessment of the uncertainty associated with ground-water well concentrations that result from uncertainty and variability in climatic and hydrogeologic characteristics of waste management units across the range of locations associated with the Dyes and Pigments industry.

F. What Exposure Assumptions and Toxicity Levels Did EPA Use?

We used values from EPA's Exposure Factors Handbook (EPA, 1997) to set the exposure assumptions for this analysis. We applied the recommended values for the central tendency and high end intake rates in the deterministic analysis, and we used a distribution of values developed from the data presented in the Exposure Factors Handbook in the Monte Carlo analysis. Section 6.0 of the Risk Assessment Background Document discusses these values in detail.

The health benchmark data used in the analysis are based upon the values presented in the Integrated Risk Information System (IRIS) online database of verified health benchmarks or in the Health Effects Assessment Summary Tables (HEAST) document. Appendix E of the Risk Assessment Background Document contains toxicological profiles used in our analysis. The studies used as the basis for these benchmarks have been reviewed and summaries of these studies, along with references to the complete studies, are presented in Appendix E of the Risk Assessment Background Document.

G. What Uncertainties Are Associated With The Risk Assessment?

Uncertainty is inherent in the risk assessment process. It occurs because the risk assessment process is complex, and variability is inherent in the environment. We may classify the sources of uncertainty as parameter uncertainty and variability, exposure

scenario uncertainty, and model uncertainty. Parameter uncertainty occurs when parameters appearing in equations cannot be measured precisely and/or accurately. Variability refers to the normal variations in physical and biological processes that we cannot reduce with additional data. We have addressed variability in this risk assessment by using a probabilistic analysis. Exposure scenario uncertainty occurs because of the inability to measure exposure of receptors to constituents of concern. Model uncertainty is associated with all models used in risk assessment and occurs because computer models require simplifications of reality, and thus exclude some variables and interactions that influence fate and transport but cannot be included in models due to complexity or lack of data. We discuss each of these issues in detail in Section 8 of the Risk Assessment Background Document.

One important area of uncertainty that we believe should be noted is the uncertainty involving estimates of risks to children from carcinogenic compounds. We used the same overall approach for estimating cancer risks in both adults and children from the dye and pigment waste streams evaluated. We modified the exposure factors for children to account for differences between adult and child receptors (e.g., body weight, exposure duration). However, we recognize that significant uncertainties and unknowns exist regarding the estimation of lifetime cancer risks in children. Methodologies for estimating environmental threats to children's health are relatively new. They are currently being debated within the scientific community, and will continue to evolve. The analysis of cancer risks in children undertaken for this assessment has not been externally peer reviewed.

H. What Risk Level Do the Concentration Levels Represent?

In calculating concentration limits for the two wastes, we assumed the residential drinking water well concentration is equal to EPA established protective or health-based level for each constituent for the most sensitive receptor (adult or child). Protective concentrations are those at which adverse health effects from any single constituent present in contaminated drinking water and/or water used for bathing or showering do not exceed a one in 100,000 (1×10^{-5}) individual lifetime cancer risk or a non-cancer hazard quotient of 1 (where the hazard quotient is the ratio of the concentration in the water to the concentration at which no non-cancer effects are expected). The use of these risk levels is consistent with the initial cancer-risk and HQ ''levels of concern'' that we described in the discussion on EPA's hazardous waste listing policy in the 1994 proposed rule for dye pigment wastes (see 59 FR 66075). As noted previously, we based the concentrations on the groundwater pathway, which is the pathway of most concern for all constituents of concern for this industry when disposed in municipal landfills. Section 5 of the Risk Assessment Background Document provides the methodology we used to derive risk limiting waste concentrations in greater detail.

I. What Are the Proposed Listing Levels?

Table III–3 presents the risk-based concentration levels for all potential constituents of concern calculated for both spent Filter Aids and TAM sludges based on our risk assessment. These levels represent protective concentrations for constituents that may be present in the wastes, and are based on the receptor that yielded the lowest allowable waste concentration (i.e, adult or child). Using the partitioning model described above, we calculated protective levels for constituents in both the waste itself and for leachate that is released from the landfill. We are proposing to set the concentration levels in the listing at the levels calculated for the constituents in the two wastes. If you generate either waste under consideration, your waste concentrations would have to be below these levels, or else your waste will be a listed hazardous waste. Therefore, under this proposal, you would be assessing constituent concentrations in the waste itself.

1. Selection of Listing Levels in Wastes Versus Leachate

We considered using the landfill leachate levels in Table III–2 instead of the waste levels to define the listed waste. We could do this if we require generators to evaluate their wastes using a test designed to predict leaching from landfills. The Toxicity Characteristic Leaching Procedure (TCLP) is one possible method available. The Toxicity Characteristic (TC) regulation uses the TCLP to decide whether wastes are hazardous under this characteristic (see 40 CFR 261.24). However, we decided not to use the TCLP approach for several reasons. First, we did not perform TCLP analysis for these constituents in any of the dye and pigment wastes examined. Thus, we are uncertain how the method might perform for the wastes at issue. The partitioning model also factors in the placement of the wastes into the landfill and provides a leaching rate that reflects how the volumes of wastes are assumed to be disposed over time. The TCLP approach is appropriate for defining levels of concern under the TC for all wastes on a nationwide basis, where we have no specific information on waste quantities disposed. In today's proposed rule we have information on the specific quantities of the two selected wastes in the dyes and pigments industries. Finally, we believe that the analysis of the waste itself is more straightforward to implement, and would not require measuring levels in a derived leachate that are much lower than those in the waste. Therefore, we chose to propose the concentration based levels for the waste itself.

However, the TCLP does represent an actual measurement of leach potential as opposed to a value generated by a model. Thus, the Agency may still consider a final regulation based on the TCLP, depending on comments received and additional information provided.

2. Selection of Probabilistic Versus Deterministic Modeling Results

The constituent concentrations in Table III–3 reflect the results of the probabilistic modeling assessment. We chose to use the probabilistic results, rather than rely on the deterministic results. While the Agency has used the results of deterministic analyses for past listing decisions, EPA has more recently used Monte Carlo analyses for additional verification (see Petroleum Listing final rule, 63 FR 42110; August 6, 1998). As we have developed and refined the Monte Carlo approach, we believe it provides some distinct advantages. As noted earlier, when compared with alternative approaches for assessing parameter uncertainty or variability, the probabilistic technique has the advantages of general applicability and no inherent restrictions on input distributions or input-output relationships.

An additional factor the Agency considered was the highly variable nature of the data available. The constituents of concern, their concentrations, and waste volumes can be highly variable across the different industry processes, a factor which made the Agency reluctant to rely on selected point estimates for its assessment. Also of particular concern was the difficulty we found in choosing what set of parameters would truly represent a ''high-end'' analysis for multiple pathways, constituents, and locations. The issues associated with choosing high-end parameters are discussed in the Risk Assessment Background

Document, which presents the deterministic as well as the probabilistic results.

The probabilistic simulations used in this proposed rulemaking assessed the full distributions of critical input data (e.g., distance to well, waste volumes, landfill area) to randomly generate receptor well concentrations of key constituents for certain landfill situations, and then combined the results from many runs to produce a probability distribution of risks. We were then able to choose points along the probability distribution of risk for comparison to the high-end analysis. For example, a risk that corresponds to the 90th percentile for a specific waste constituent in a landfill means that the risk would be below this level in 90 percent of the runs.

The concentration levels in Table III–3 represent the probabilistic modeling results at the 90th percentile. As discussed previously, we are attempting to calculate estimates of exposure in the upper end of the distribution (i.e., above the 90th percentile), while avoiding estimates that are beyond the true distribution. (See Habicht memo, 1992.) The Agency's policies do not indicate that there is any particular point on a Monte Carlo distribution that should be the point at which the Agency regulates or does not regulate. This conceptual range is not meant to precisely define the limits of this descriptor, but should be used by the assessor as a target range for characterizing ''high-end risk.'' Therefore, a high-end estimate that falls within the range (above the 90th percentile but still realistically on the distribution) is a reasonable basis for a decision.

We believe that the 90th percentile levels calculated for the waste concentrations in today's proposed rule are protective. For filter aids, the high-end deterministic results gave concentrations that were somewhat higher than the 90th percentile levels from the probabilistic analysis (by a factor of 2–4 fold). Therefore, we believe that using the 90th percentile values (as opposed to higher percentile values) provides results that are more consistent with previous listing determinations based on high-end deterministic assessments. For TAM sludges, the 90th percentile probabilistic levels are also close to the deterministic results, although for this waste the probabilistic levels for most constituents are slightly above the deterministic values (approximately two-fold). Thus, the 90th percentile results appear to agree reasonably well overall with the deterministic results. Furthermore, the probabilistic DAFs predicted for transport of landfill leachate from the landfill to the receptor well were already quite low at the 90th percentile (i.e., 2–5), also suggesting that the 90th percentile is adequately protective.

We are soliciting comments on both the use of the probabilistic modeling results, rather than the deterministic analyses, and also our use of the 90th percentile risk level, rather than any other level. For example, the 95th percentile probabilistic results yields concentrations that are about two-fold lower. Details of the deterministic modeling results, and levels calculated using other percentiles from the probabilistic analysis, are given in the Risk Assessment Background Document (Appendix F). We also seek comment on the setting of the regulatory levels for the waste itself, rather than the option of using the TCLP values.

TABLE III–3.—CALCULATED RISK-BASED CONCENTRATION LEVELS FOR POSSIBLE CONSTITUENTS OF CONCERN FOR DYE AND PIGMENT WASTES[1]

Constituents	Concentration levels for filter aids**		Concentration levels for TAM sludges	
	Waste (mg/kg)	Leachate (mg/ml)	Waste (mg/kg)	Leachate (mg/ml)
Aniline	.....	.....	17	0.03
Benzaldehyde	.....	.....	5000	5.6
Benzene	.....	.....	370	0.11
Benzidine	.....	.....	0.027	0.000023
Chloroaniline, p-	.....	.....	250	0.25
Chlorobenzene	.....	.....	36	0.0036
Chloroform	.....	.....	100	0.042
Cresol, p-	.....	.....	330	0.33
Dichlorobenzene, 1,2–	.....	.....	1100	0.043
Dimethoxybenzidine, 3,3'-	.....	.....	520	0.38
Dimethylaniline, N,N-	.....	.....	300	0.11
Diphenylamine	.....	.....	27,000	1.1
N-Nitrosodiphenylamine	.....	.....	7,400	0.62
Diphenylhydrazine, 1,2-	.....	.....	31	0.0042
Azobenzene	.....	.....	720	0.013
Formaldehyde	.....	.....	7000	11
Naphthalene	.....	.....	17	0.0028
Phenol	.....	.....	28,000	34
Phenylenediamine, o-(2-aminoaniline)	.....	.....	61	0.11
Phenylenediamine, p-(4-aminoaniline)	.....	.....	5,000	10
Toluidine, o-(2-aminotoluene)	.....	.....	13	0.022
Toluidine, p-(4-aminotoluene)	.....	.....	23	0.029
Toluidine, 5-nitro-o-(2-Methyl-5-nitroaniline) (**)	.....	.....	220	0.15

[1] Levels represent the 90th percentile risk derived from the probabilistic analysis.
** Relevant data are not included at the present time for a number of constituents due to business confidentiality concerns.

IV. Proposed Listing Determinations and Regulations

A. What Are the Proposed Regulations for the Two Wastes?

We are proposing that, if you generate either of the two categories of dye and pigment wastes at issue, you must either determine whether or not your waste is a listed hazardous waste within a specified time, or assume that it is hazardous as generated. Your waste would become a listed hazardous waste if it contains any of the constituents of concern at a concentration equal to or greater than the hazardous concentration identified for that constituent. You must make a determination that all of the constituents of concern in your waste are below the hazardous concentrations to claim that your wastes remain nonhazardous. We are proposing the following specific regulatory language for the two wastes:

K167 Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments, or FD&C colorants, unless these wastes do not contain any of the constituents identified in § 261.32(b)(3)(iii) at a concentration equal to or greater than the hazardous level set for that constituent as demonstrated by the procedures specified in § 261.32(b).

K168 Wastewater treatment sludges from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock), unless these wastes do not contain any of the constituents identified in § 261.32(b)(3)(iii) at a concentration equal to or greater than the hazardous level set for that constituent as demonstrated by the procedures specified in § 261.32(b).

The constituents and levels in these listing descriptions would be those given in Tables IV–1 for Filter Aids and Table IV–2 for TAM sludges. Section V describes the steps you must follow to implement the concentration-based listing.

We solicit comment on the proposed list of constituents and their levels. Specifically, based on the rather high levels set for some constituents (e.g., diphenylamine, formaldehyde for TAM sludges), EPA is considering removing these. These levels may be unlikely in these wastes, and may not merit analysis. We seek any information that may assist us in deciding on whether we should retain all of these constituents. We also solicit comment as to whether any other constituents (e.g., any others in Table III–3) should be added to the regulatory lists in Tables IV–1 or IV–2.

TABLE IV–1.—CONCENTRATION LEVELS FOR SPENT FILTER AIDS

Constituents	Concentration levels (mg/kg)**
Aniline	
Benzaldehyde	
Chloroaniline, p-	
Cresol, p-	
Dimethylaniline, N,N-	
Dimethoxybenzidine, 3,3′-	
Diphenylamine	
Diphenylhydrazine, 1,2-	
Formaldehyde	
Naphthalene	
Phenol	
Phenylenediamine, p-	
Toluidine, o-	
Toluidine, p-	
(**)	
(**)	

** Relevant data are not included at the present time due to business confidentiality concerns.

TABLE IV–2.—CONCENTRATION LEVELS FOR TAM SLUDGES

Constituent	Concentration levels (mg/kg)
Benzaldehyde	5000
Dimethylamine, N,N-	300
Diphenylamine	27,000
Formaldehyde	7000
Toluidine, o-	13
Toluidine, p-	23
(**)	(**)

**Relevant data are not included at the present time due to business confidentiality concerns.

As required under § 261.30(b), we are adding those constituents that are the bases for listings to Appendix VII of Part 261, ''Basis for Listing Hazardous Waste.'' Thus, we are proposing to add the constituents in Table IV–1 for K167 (filter aids), and the constituents in Table IV–2 for K168 (TAM sludges) to Appendix VII. In addition, several constituents in Tables IV–1 and IV–2 are not currently listed on Appendix VIII to Part 261, ''Hazardous Constituents.'' EPA places constituents on Appendix VIII if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms (see 261.11(a)(3)). The Risk Assessment Background Document contains the detailed toxicological data for all constituents we evaluated, including the specific chemicals that we are proposing to add to Appendix VIII in today's rule: benzaldehyde, N,N-dimethylaniline, p-cresol, and p-phenylenediamine, and another chemical, the identity of which is not given due to business confidentiality concerns. While cresol and phenylenediamine are currently listed on Appendix VIII, the precise isomers are not specified. Therefore, we are proposing to add these specific isomers. If, in response to comment, we decide to add any additional constituents to the chemicals of concern in either concentration-based listing, then we would also add those constituents to Appendix VII, and to Appendix VIII, if necessary.

In proposing to promulgate a concentration-based listing for filter aids and TAM sludges under 40 CFR 261.11(a)(3), we considered the factors given under 40 CFR 261.11(a)(3) and believe that these wastes pose a substantial present or potential hazard to human health or the environment at the proposed listing levels. We considered nearly all of these factors as part of the risk assessment described in today's rule. Specifically, we considered the constituents' toxicity/concentration, mobility, persistence, and bioaccumulation potential in setting the concentration-based levels (corresponding to factors (I) through (vi) given in § 261.11(a)(3)). As described in the risk assessment section, we considered municipal landfills as the ''plausible'' management practice (factor (vii)), and evaluated the waste quantities generated by facilities (factor viii). Concerning factor (ix), we examined damage cases for the dye and pigment industries for the 1994 proposed rule (see Risk Assessment Support for Dye and Pigment Listing Determination, November 29 1994; document number S0333, EPA Docket No. F–94–DPLP–FFFFF). However none of those cases provide any information on the possible damages associated with the two wastes at issue in today's proposal. Finally, we considered other regulatory programs (factor (x)), when appropriate. No other regulatory program EPA identified adequately addressed the risks posed by the wastes. However, as noted in Section IV.C, we considered the protection afforded by the Clean Water Act, and the regulations being considered for leachate from landfills. As a result of this consideration, we are proposing to temporarily defer any regulation of landfill leachate that may be derived from the wastes proposed for listing, provided certain conditions are met.

B. What Are We Proposing for Anthraquinone Sludges?

We are proposing not to list wastewater treatment sludges from the production of anthraquinone dyes and pigments. As described earlier in this notice, the only constituents that were

found in wastes that could be attributed to anthraquinone production (the identities are not given due to business confidentiality concerns) do not have health-based benchmarks. We did not receive any data in comments on the 1994 proposed rule that would allow us to estimate such benchmarks.

Discussion of the details of waste generation and management for this waste cannot be released at this time due to business confidentiality concerns.

Therefore, we are proposing not to list anthraquinone sludges because we cannot identify any health threat from these wastes. Further discussion on the generation of this waste cannot be released at this time due to CBI constraints. We do not find any demonstrated risk from the constituents that we can attribute to anthraquinone production. We seek comment on this decision not to list this waste.

C. What Is the Status of Landfill Leachate From Previously Disposed Wastes?

Leachate derived from the treatment, storage, or disposal of listed hazardous wastes is classified as a hazardous waste by virtue of the ''derived-from'' rule in 40 CFR 261.3(c)(2). The Agency has been clear in the past that hazardous waste listings apply to wastes disposed of prior to the effective date of a listing, even if the landfill ceases disposal of the waste when the waste becomes hazardous (see 53 FR 31147; August 17, 1988). We also have a well-established interpretation that listings likewise apply to leachate derived from the disposal of listed hazardous wastes, including leachate derived from wastes disposed before a listing effective date which meet the listing description. We are not reopening any of these issues by the present notice.

Of course, as set out in detail in the August 1988 notice, this does not mean that landfills holding wastes which are subsequently listed as hazardous become subject to Subtitle C regulation. However, previously disposed wastes now meeting a listing description, including residues such as leachate which are derived from such wastes, which are ''actively managed'' do become subject to Subtitle C regulation (*id.*). In many, indeed most circumstances, active management of leachate would be exempt from Subtitle C regulation because the usual management practice is discharge either to POTWs via the sewer system, where leachate mixes with domestic sewage and is excluded from RCRA jurisdiction (see RCRA Section 1004(27) and 40 CFR 261.4(a)(1)), or to navigable waters, also excluded from RCRA jurisdiction (see RCRA Section 1004(27) and 40 CFR 261.4(a)(2)). In addition, management of leachate in wastewater treatment tanks prior to discharge under the CWA is also exempt from RCRA regulation (40 CFR 264.1(g)(6)).

However, we believe, because the proposed listings for the two categories of dye and pigment wastes (K167–K168) are concentration-based listings, it would be difficult to know whether the previously disposed wastes that meet the narrative description of K167–K168 are in fact K167–K168 hazardous wastes that exceed the listing levels. We don't anticipate that records documenting the concentrations of proposed constituents of concern for these wastes exist for previously disposed wastes. Therefore, absent a finding that the wastes, when disposed, would have met the listing being proposed today, the previously disposed wastes (including landfill leachate and gas condensate derived from these wastes that are actively managed) could not be classified as K167–K168.

However, if actively managed landfill leachate and gas condensate derived from the two categories of dye and pigment wastes proposed to be listed in today's rule could be classified as K167–K168, we are concerned about the potential disruption in current leachate management that could occur and the possibility for redundant regulation. Recently, this issue was raised to the Agency in the context of the petroleum refinery waste listings (see 63 FR 42173; August 6, 1998). A commenter expressed concern that, because some of their nonhazardous waste landfills received petroleum wastes which are now listed, the leachate that is collected and managed from these landfills would be classified as hazardous. The commenter argued that this could lead to increased treatment and disposal costs without necessarily any environmental benefit. After examining and seeking comment on this issue, we published a final rule that temporarily defers regulation of landfill leachate and gas condensate derived from certain listed petroleum refining wastes (K169–K172) that were disposed before, but not after, the new listings became effective, provided certain conditions are met (see 64 FR 6806; February 11, 1999).

At the time this issue was brought to the Agency's attention in the context of the petroleum refinery waste listings, EPA's Office of Water had recently proposed national effluent limitations guidelines and pretreatment standards for wastewater discharges—most notably, leachate—from certain types of landfills (see 63 FR 6426; February 6, 1998). In support of this proposal, EPA conducted a study of the volume and chemical composition of wastewaters generated by both Subtitle C (hazardous waste) and Subtitle D (nonhazardous waste) landfills, including treatment technologies and management practices currently in use. EPA proposed effluent limitations (for nine pollutants in the Nonhazardous Subcategory) for direct dischargers (see 63 FR 6463). Most pertinent to finalizing the temporary deferral for the petroleum refining wastes, EPA did not propose pretreatment standards for Subtitle D landfill wastewaters sent to POTWs because the Agency's information indicated that such standards were not required.

The conditions included in the temporary deferral published on February 11, 1999 are that the leachate is subject to regulation under the Clean Water Act, and the leachate is not stored in surface impoundments after February 13, 2001. See 40 CFR 261.4(b)(15). We believed that it was appropriate to temporarily defer the application of the new waste codes to such leachate in order to avoid disruption of ongoing leachate management activities while the Agency decides how to integrate the RCRA and CWA regulations consistent with RCRA section 1006(b)(1). As discussed above, we do not anticipate that this situation is likely to occur because the nature of the concentration-based listing makes it difficult to determine whether the wastes previously disposed met the concentrations at the time of disposal. However, to the extent previously disposed of dye and pigment wastes could be determined to meet the listing description and levels, we believe that the same rationale fully discussed in the February 11, 1999 rulemaking applies in this situation as well. As such, we would be concerned about forcing pretreatment of leachate even though pretreatment is neither required by the CWA nor needed. Therefore, we are proposing to temporarily defer landfill leachate and gas condensate derived from the two categories of dye and pigment wastes, with the same conditions as described in 40 CFR 261.4(b)(15) for petroleum wastes. We believe the issue of whether disruptions can be minimized through integration of CWA and RCRA rules will be more amenable to resolution once the CWA rulemaking is completed.

We request any available information on whether or not the two categories of dye and pigment wastes previously disposed in nonhazardous landfills contained constituents of concern identified for these wastes at

concentrations equal to or greater than the proposed listing levels. Even if we don't receive any information that previously disposed dye and pigment wastes will result in generation of hazardous landfill leachate and gas condensate, we nonetheless intend to finalize the temporary deferral for landfill leachate and gas condensate from these wastes. This is because someone may discover this problem later (after the effective date of the listing), so, by having a temporary deferral in place, it would be possible to avoid disruption of ongoing leachate management activities while we further examine this issue and await the CWA final rule.

V. Generator Requirements for Implementation of Concentration-Based Listings

We are proposing that the concentration-based listings be self-implementing. This requires that you (the waste generator) meet the necessary conditions to determine whether or not your waste is hazardous based on the procedures we describe below. We have identified the constituents of concern for the two categories of dye and pigment wastes in Tables IV–1 and IV–2. We have also identified the listing level for each of these constituents in the same tables. We are proposing that you use this information, in conjunction with waste analysis results, to determine if your waste is a listed hazardous waste.

Unless you make a determination that your waste is nonhazardous using the specified procedures, you are subject to the existing requirements under RCRA for persons who generate hazardous waste. Thus, if you are not already a hazardous waste generator, you must notify the EPA, according to section 3010 of RCRA, that you generate a hazardous waste. You are also subject to all applicable requirements for hazardous waste generators in 40 CFR 262.

If you determine that your waste is nonhazardous, we are proposing to require, under the authority of sections 2002 and 3007 of RCRA, that you keep certain records of your waste and submit a notification and certification to the EPA claiming you have a nonhazardous waste. Following a nonhazardous claim, you would have a continuing obligation to ensure that your waste meets all of the proposed conditions and requirements for the waste to be deemed nonhazardous.

A. Do I Have to Determine Whether or Not My Waste Is Hazardous?

If you want to assume that your waste is hazardous as-generated or you don't want to analyze it to make a hazardous waste determination, you may do that. In such a case, we are proposing your waste would be considered hazardous as-generated and subject to all applicable RCRA Subtitle C hazardous waste requirements, effective as of the effective date of the final rule or initial generation of the waste. However, if you want your waste to be nonhazardous as-generated, you must perform the waste analysis steps in V.C and determine your waste to be nonhazardous. If your waste is determined to be nonhazardous and claimed to be nonhazardous within 60 days (see V.D) following the effective date of the final rule or initial generation of the waste, we are proposing that none of the waste generated following the effective date of the rule or initial generation is hazardous as-generated.

If you elect not to make this determination by the 60th day, or alternatively determine that your waste is hazardous, you may use the same waste analysis procedures (see V.C) to make a nonhazardous determination for your waste at anytime after the 60th day. If this determination shows your waste as-generated is nonhazardous, it can be claimed to be nonhazardous (see V.D). We are proposing that the nonhazardous claim for waste as-generated, if submitted more than 60 days after the effective date of the rule or initial generation, would only become effective on the date when you receive a written receipt or confirmation that your notification and certification has been delivered to the EPA. After you have received this receipt or confirmation, any waste generated on or after the generation date of the waste that was analyzed for the nonhazardous determination may be claimed a nonhazardous waste that is not subject to Subtitle C, including LDR requirements. Any waste generated prior to that generation date remains hazardous.

We request comment on whether the 60 day time limit for making a hazardous or nonhazardous waste listing determination and nonhazardous waste claim should be longer (*e.g.,* 90 days) to allow adequate time for sampling and analyses.

B. How Do I Manage My Waste During the Period Between the Effective Date of the Final Rule and Initial Hazardous Waste Determination for My Waste?

You cannot dispose of your waste as nonhazardous until you complete an initial determination to show that your waste is nonhazardous. Because the potential hazard from your waste is due to its placement on land, we are proposing that, as a condition of the waste being nonhazardous, you must store your waste in containers, or in another manner that does not involve land placement.

Because the interim storage period for the waste prior to a hazardous waste determination is relatively short (60 days), we request comment on whether it is necessary to impose such a condition. Given that the generator would be subject to enforcement for improper storage if the waste turns out to be hazardous, generators may have adequate incentives to store the waste in compliance with Subtitle C requirements during the interim period.

Alternatively, we could condition the waste being nonhazardous on the generator's storing the waste in accordance with the requirements described in 40 CFR 262.34. This would be an appropriate precaution in case the waste turns out to be hazardous. We also request comment on this approach.

C. What Are the Steps I Must Follow To Determine Whether or Not My Waste Is Hazardous?

We are proposing the following waste analysis steps for making a determination that your waste is nonhazardous as-generated:

1. You must collect a minimum of four representative samples of your waste and analyze each for the constituents of concern identified in Tables IV–1 or IV–2. These samples must be adequate to determine the maximum levels of constituents that may be in your waste. Instead of analyzing for a constituent, you may also apply process knowledge (knowledge of the constituents in your waste based on the materials, degradation products, and manufacturing processes used) to document that a constituent could not be present in the waste. You should note, however, that process knowledge cannot be used to determine a level of constituent in your waste.

2. Compare the sampling and analyses results or process knowledge information (documentation that a constituent could not be present in the waste) for the constituents of concern in your waste to the hazardous

concentration levels set for these constituents.

3. If none of your waste samples contain any of the constituents of concern at concentrations equal to or greater than the hazardous concentration levels set for these constituents, you can determine that your waste is nonhazardous. However, if any of your waste samples contains any of the constituents of concern at a concentration equal to or greater than the hazardous concentration level set for that constituent, your waste is a listed hazardous waste and subject to all applicable RCRA Subtitle C hazardous waste requirements.

We would consider requiring less than four representative samples of the waste for the initial hazardous waste determination if this could be supported. We request comment on whether generators can reliably determine the maximum concentration of constituents in the waste with less than four samples. We also request comment on whether the generators should be allowed to use process knowledge information, in lieu of testing, to support claims that constituents of concern could not be present in their wastes. Alternatively, we could require testing for all constituents of concern in the initial testing.

We are proposing that the maximum concentration of any constituent detected in any sample must be below the established listing level in order for you to determine that the waste is nonhazardous. We are proposing this approach because we believe it is the most protective, and because it does not rely on any statistical manipulation of waste analysis data to determine constituent concentrations in the waste. However, we request comment on whether the generator should be allowed to average constituent levels in multiple waste samples. Under that approach, the generator would calculate concentrations using an upper confidence limit on the mean (e.g., 95th percent) and compare this limit to the listing levels established for the constituents.

D. What Are the Requirements for a Waste Determined To Be Nonhazardous, and How Do I Claim My Waste To Be Nonhazardous?

We are proposing that after you have determined your waste is nonhazardous, but prior to disposing the waste as nonhazardous, you must claim your waste to be nonhazardous as follows:

1. You must submit a one-time notification to the EPA. The notification must include the facility name, address, and telephone number of an authorized representative, description of the waste and potential waste code, and an estimate of the average annual volume of waste claimed to be nonhazardous. The notification must also include a certification that none of your waste samples contain any of the constituents of concern identified for your waste at concentrations equal to or greater than the hazardous concentration levels set for these constituents, and these levels were determined without dilution of the waste. By dilution, we mean addition of other waste or media to your waste after generation, which do not meet the narrative listing description for your waste, in order to reduce the concentration of the constituents of concern in your waste to below listing levels.

2. The notification and certification must be sent by certified mail return receipt, or by written confirmation of delivery from a commercial delivery service.

3. The certification must be signed by a responsible corporate official and must state as follows: ''I certify under penalty of law that none of the waste samples contain any of the constituents of concern identified for this waste at concentrations equal to or greater than the hazardous concentration levels set for these constituents, and that these levels were determined without dilution of the waste. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.''

We are proposing to require the notification and certification under the authority of Sections 2002 and 3007 of RCRA. The notification and certification will provide confirmation that certain wastes that meet the narrative description for the two categories of dye and pigment wastes are not RCRA hazardous wastes. We are not proposing to require submission of waste analysis data to the EPA for review or approval. Instead, we propose to require, also under the authority of sections 2002 and 3007 of RCRA, that certain records be kept on-site (see below). We request comment on whether generators should be required to submit waste analyses data along with the notification.

E. What Records am I Required To Keep On-Site To Support a Nonhazardous Claim for My Waste?

We are proposing that you must, at a minimum, keep the following information on-site:

1. A copy of the notification and certification sent to the EPA and documentation that it was received.

2. The sampling and analysis plan used for collecting and analyzing representative samples of your waste.

3. The initial sampling and analyses data and process knowledge information (if used) that support a nonhazardous claim for your waste.

4. All follow-up sampling and analyses data and process knowledge information (if used) for the most recent three years.

F. What Happens if I Do Not Meet the Notification and Recordkeeping Requirements for a Waste That I Have Determined To Be Nonhazardous?

We are requiring notification and recordkeeping under the authority of sections 2002 and 3007 of RCRA. These provisions are requirements, not conditions of the waste being nonhazardous. Failure to comply with these requirements may result in an enforcement action under Section 3008 of RCRA. This section of the statute permits the imposition of civil penalties in an amount up to $27,500 for each day of noncompliance.

G. What Are the Follow-Up Waste Analysis Requirements for My Nonhazardous Waste?

You must analyze a minimum of one representative sample of the nonhazardous waste every calendar year it is generated. You must also analyze a minimum of one representative sample of the nonhazardous waste anytime, after the initial waste analysis, there is a process change that may increase the concentrations of hazardous constituents of concern in the waste. If process change has not occurred, you may use the results of the initial waste analysis to create a more tailored list of the constituents of concern in your waste and test just for those constituents. If your waste is in fact hazardous (*i.e.*, if it contains any constituent of concern at or above the regulatory level), you are liable for compliance with Subtitle C requirements.

We request comment on whether a minimum of four representative samples should be required for follow-up waste analysis and whether follow-up waste analysis required every calendar year should be terminated after three consecutive years of verification that the waste remains nonhazardous. This would be based on the waste generator performing the required follow-up analysis on the waste and finding that none of the waste samples contain any of the constituents of concern at

concentrations at or above the hazardous concentration levels set for these constituents for three consecutive years.

H. What Happens if My Waste Constituent Concentration Are No Longer Below the Listing Concentrations?

If follow-up waste analysis (or any analysis of your waste after the initial waste analysis) finds your waste contains one or more constituents of concern at concentrations at or above their hazardous concentrations, your waste is a listed hazardous waste and subject to all applicable RCRA Subtitle C hazardous waste requirements. To claim the waste nonhazardous again, you must repeat the initial waste analysis and show that none of the waste samples contain any of the constituents of concern at or above their hazardous concentrations. You must also submit a new notification and certification for your waste.

I. Can I Treat My Waste to Below Listing Concentrations and Then Claim My Waste To Be Nonhazardous?

If your waste is hazardous as-generated, you can treat the waste to make it nonhazardous. However, if your waste is hazardous as-generated, it is subject to all applicable RCRA Subtitle C hazardous waste requirements and would be required to be treated in any case to meet the proposed LDR treatment standards before any placement in a land-based unit. Under the proposed LDR treatment standards (see Section VI), the wastes must be treated using specified technologies (''technology standards''). We believe that compliance with LDR treatment standards is likely to result in nonhazardous concentrations of constituents in the waste. However, based on the mixture and derived-from rules, the treated waste would still carry the hazardous waste code. Therefore, you may choose to use the initial waste determination procedures for waste as-generated (see V.C above) to determine if your treated waste is nonhazardous. If your treated waste is determined to be nonhazardous and you want to claim it as nonhazardous, you must follow the same procedures as those required to claim ''as-generated'' waste nonhazardous (see V.D above). We are proposing that the non-hazardous claims for treated waste would only become effective on the date when you receive a written receipt or confirmation that your notification and certification has been delivered to the EPA. Thus, prior to the effective date, your waste still remains a listed hazardous waste and must meet all applicable RCRA Subtitle C hazardous waste requirements.

J. Alternative Implementation Approach

As an alternative to the implementation approach proposed in today's rule, we may adopt a more streamlined approach for waste generators to use in self-implementing the concentration-based listings for these wastes. Under a streamlined approach, we would not require the waste generator to perform sampling and analysis procedures as conditions to determine that its waste (which meets the narrative description of K167 or K168) is nonhazardous. We would also not have notification and recordkeeping requirements for a waste determined to be nonhazardous. However, the levels for the constituents of concern in the waste would have to be below the listing levels, if the waste generated after the effective date of the rule is to be handled as nonhazardous waste. Therefore, after the effective date of the rule, if the waste is in fact hazardous (*i.e.,* if it contains any constituent of concern at or above the regulatory level), the waste would be subject to Subtitle C requirements. We may also adopt an approach somewhere in the middle that includes some minimal waste characterization requirements.

The streamlined implementation approach discussed above for the concentration-based listings would be similar to the existing program for determining whether a waste exhibits a hazardous characteristic. At this time, EPA believes the approach presented earlier in today's proposal (see V. A–I) is the more appropriate approach for this listing since, in contrast to the situation with characteristic wastes, we have performed analyses specific to this industry and have determined that the constituents of concern are likely to be present in the industry's waste. However, we will give careful consideration to any arguments presented or relevant waste analysis data submitted in response to today's proposal (e.g., data showing that only a small portion of the wastestreams in the industry exceed the listing levels) in order to decide whether a more streamlined approach is warranted. We request comment on possibly allowing the waste generators to use a more streamlined approach for self-implementing the concentration-based listings proposed in today's rule.

VI. Proposed Treatment Standards Under RCRA's Land Disposal Restrictions

A. What Are EPA's Land Disposal Restrictions (LDRs)?

The statute requires EPA to establish treatment standards for all hazardous wastes that are land disposed. These are the so called ''land disposal restrictions'' or LDRs. For any hazardous waste identified or listed after November 8, 1984, EPA must promulgate these 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)). The statute 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)).

Wastes that meet treatment standards established by EPA may be land disposed. Wastes that do not meet these standards are prohibited from land disposal (except in units meeting a stringent no-migration test). Each waste proposed for listing as hazardous in this rule will be subject to all the land disposal restrictions on the same day their respective listing becomes effective.

B. How Does EPA Develop LDR Treatment Standards?

To establish LDR treatment standards, EPA first identifies the best demonstrated available technology (BDAT) for the hazardous constituents present in the hazardous waste, and then determines what constituent concentrations can be achieved by the technology or technologies identified as BDAT.

EPA typically has established treatment standards based on performance data from the treatment of the waste at issue, if such data are available, and also from the treatment of wastes with similar chemical and physical characteristics or similar concentrations of hazardous constituents. Treatment standards typically cover both wastewater and nonwastewater waste forms on a constituent-specific basis. The constituents selected for regulation under the LDR program are not necessarily limited to those present in a proposed listing , but also may include those constituents or parameters that will ensure that treatment technologies

are operated properly. For listed waste EPA identifies these as ''regulated constituents'' and they appear individually in the Table at 40 CFR 268.40, along with their respective treatment standards.

EPA may either designate a method of treatment as the treatment standard or develop a numerical treatment standard, which could be satisfied by use of any treatment technology (that doesn't entail impermissible dilution). On the other hand, if the treatment standard is a designated method, that is the only permissible means of treating the waste.

After developing the LDR treatment standards, we must also determine if treatment capacity is available to treat the expected volumes of wastes. If so, the LDR treatment standards become effective essentially at the same time a listing does. If not, EPA may grant up to a two-year national capacity variance (NCV) during which time the LDR treatment standards are not effective.

For a more detailed overview of the Agency's approach for developing treatment standards for hazardous wastes, see the final rule on solvents and dioxins (51 FR 40572, November 7, 1986) and section III.A.1 of the preamble to the final rule that set land disposal restrictions for the ''Third Third'' wastes (55 FR 22535, June 1, 1990). EPA also has explained its BDAT procedures in ''Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/Quality Control Procedures and Methodology (EPA/OSW, October 23, 1991)''. This document is available in the docket supporting this proposed rulemaking.

C. What Treatment Standards Are Proposed?

The Agency has previously promulgated technology-specific standards—*i.e.,* in the words of the statute, ''methods of treatment''—for the following K167 core constituents of concern: 3,3′-dimethoxybenzidine (U091), 1,2-diphenylhydrazine (U099), formaldehyde (U121), o-toluidine (U328), p-toluidine (U353), and other chemical(s), the identities of which are not included due to business confidentiality concerns. We also promulgated technology-specific standards for K168 core constituents of concern: formaldehyde, o-toluidine, and p-toluidine. Analytical complications formed the basis of the Agency's decision to promulgate technology-based BDAT treatment standards (see 55 FR 22611, June 1, 1990).

These pre-existing technology-specific standards provide the starting point for our analysis. We also assessed the potential of developing numerical standards for these and the other constituents of concern in K167 and K168. We found that numerical treatment standards based on performance of BDAT (combustion) would nonetheless potentially result in situations where threats to human health and the environment are not minimized, as required by section 3004(m). This seeming anomaly is explained by the fact that numerical treatment standards based on performance of combustion consist of an analytical detection limit times a variability factor. In this instance, this numerical value would be significantly above the risk-based model levels of concern which justify the listing, largely due to high analytical detection limits for some constituents. Thus, the numerical treatment standards calculated in the accepted manner would arguably not meet the ''minimize threat'' language governing LDR treatment standards in RCRA section 3004(m).[1] As a result, we are not inclined to pursue the use of numerical treatment standards for K167 and K168.

In looking further at technology-specific standards, we find that there is significant structural similarity among all the constituents of concern, including those for which we have not previously set technology-specific standards. The constituents of concern either have been demonstrated to be treated effectively by the BDAT technology to below detection, or are of structural similarity that it can be inferred that they would not be more difficult to treat via combustion or other destructive procedures. Hence, we expect that all constituents of concern for these two wastes are amenable to similar methods of treatment. Therefore, we find the previously promulgated technology-specific standards to be the BDAT for the K167 and K168.

We propose that the technology of combustion (CMBST) be specified for nonwastewater waste forms. For wastewater waste forms, we propose to specify that one of two alternatives be used: either a treatment train consisting wet air oxidation (WETOX) or chemical oxidation (CHOXD) followed by carbon adsorption (CARBN), or treatment by combustion (CMBST). We are confident that these technologies in units subject to either Subtitle C rules, or eventually, MACT standards for hazardous waste combustors, both of which require combustion units to meet specific standards to assure proper combustion at all times, will substantially diminish the toxicity of the K167 and K168 wastes so that short-term and long-term threats to human health and the environment are minimized. We repeat that, because we are proposing to express the treatment standards as specified technologies, wastes must be treated by the required technologies before disposal.[2]

D. Other LDR-Related Provisions

The provisions in 40 CFR 268.45 would also be applicable for the treatment and disposal of hazardous debris cross-contaminated with K167 or K168. Debris contaminated with K167 and/or K168 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. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in 40 CFR 268.45 Table 1 is a hazardous waste and must be managed in a hazardous waste facility. Residuals generated from the treatment of debris contaminated with K167 or K168 would remain subject to the treatment standards proposed today. Residuals that no longer exceed the hazardous listing levels may be disposed in nonhazardous waste units. See 57 FR 37277, August 18, 1992, for additional information on the applicability, scope, and content of the hazardous debris provisions.

Lastly, because land disposal also includes placement in injection wells (40 CFR 268.2(c)) application of the land disposal restrictions to K167 and K168 requires the modification of injection well requirements found in 40 CFR 148. We propose that K167 and K168 be prohibited from underground injection. Therefore, K167 and K168 wastes may not be underground injected unless they have been treated in compliance with the LDR treatment standards or a no migration petition for these wells has been approved.

[1] This is not to say that the listing levels necessarily represent ''minimize threat'' levels for these constituents. EPA is pursuing these questions in the HWIR rulemaking. Our point here is that the levels justifying the listing certainly are not lower than whatever levels EPA may eventually determine minimize threat levels to be, and that a numerical standard developed using our standard methodology would be higher still (essentially due to high detection limits).

[2] There are two exceptions. Where the treatment technology is not appropriate to the waste, regulations provide a petition process whereby the generator or treatment facility may petition the Administrator for a variance (see 40 CFR 268.44). In addition, persons may petition the Administrator for an alternate treatment method by showing that the alternate method can achieve a measure of performance equal to the method specified by rule (see 40 CFR 268.42(b)).

E. Is There Treatment and Management Capacity Available for These Proposed Newly Identified Wastes?

1. What Is a Capacity Determination?

When EPA develops new hazardous waste LDR regulations, the law (RCRA) requires us to determine whether adequate alternative treatment capacity exists nationally to manage the waste and meet the new treatment standards. The LDRs are effective when promulgated unless EPA grants a national capacity variance from the otherwise-applicable date and establishes a different date (not to exceed two years beyond the statutory deadline) based on ''* * * the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available'' (RCRA section 3004(h)(2), 42 U.S.C. 6924(h)(2)).

Our capacity analysis methodology focuses on the amount of waste currently disposed on the land, which will require alternative or additional treatment as a result of the LDRs. The quantities of wastes that are not disposed on the land, such as discharges regulated under NPDES, discharges to a POTW, or treatment in a RCRA exempt tank, are not included in the quantities requiring additional treatment as a result of the LDRs. Also, land disposed wastes that do not require alternative or additional treatment are excluded from the required capacity estimates (*i.e.*, those that are currently treated to meet standards). Land disposed wastes requiring alternative or additional treatment or recovery capacity that is available on-site or within the same company also are excluded from the required commercial capacity estimates. The resulting estimates of required commercial capacity are then compared to estimates of available commercial capacity. If adequate commercial capacity exists, the waste is restricted from further land disposal. If adequate capacity does not exist, EPA has the authority to grant a national capacity variance.

In making the estimates described above, the volume of waste requiring treatment depends on the current waste management practices employed by the waste generators before this proposed regulation is finalized and becomes effective. Data on waste management practices for these wastes were collected during the development of this proposed rule. However, we realize that as the regulatory process proceeds, generators of these wastes may decide to minimize or recycle their wastes or otherwise alter their management practices. Thus, EPA will monitor changes and update data on current management practices as these changes will affect the volume of wastes ultimately requiring commercial treatment or recovery capacity.

The commercial hazardous waste treatment industry can change rapidly. For example, national commercial treatment capacity changes as new facilities come on-line or old facilities go off-line and as new units and new technologies are added at existing facilities. The available capacity at commercial facilities also changes as facilities change their commercial status (*e.g.*, changing from a fully commercial to a limited commercial or ''captive''—company owned—facility). Thus, EPA also continues to update and monitor changes in available commercial treatment capacity.

We request data on the annual generation volumes and characteristics of wastes affected by this proposed rule, including K167 and K168 in wastewater and nonwastewater forms, soil or debris contaminated with these wastes, residuals generated from the treatment or recycling of these wastes, and the current and planned management practices for the wastes, waste mixtures, and treatment residuals. We also request data on the current treatment or recovery capacity capable of treating these wastes, facility and unit permit status related to treatment of the proposed wastes and any plans that facilities may have to expand or reduce existing capacity, or construct new capacity. Of particular interest to us are waste characteristics, such as pH, total organic carbon content, constituent concentrations, and physical forms that may limit the availability of treatment technologies.

2. What Are the Capacity Analysis Results?

This preamble only provides a brief summary of the capacity analysis performed to support this proposed regulation. For additional and more detailed information, please refer to the ''Background Document for Capacity Analysis for Land Disposal Restrictions: Newly Identified Dye and Pigment Process Wastes (Proposed Rule), June 1999.''

For this capacity analysis, we examined data on waste characteristics and management practices gathered for the purpose of the dyes and pigments hazardous waste listing determination. The source for these data is primarily the 1992 RCRA Section 3007 survey and the follow-up survey specific to these wastes conducted in 1997 (see the docket for more information on these survey instruments—Background Document for proposed hazardous waste listing of Dyes and Pigments Wastes). The available data sources indicate that there are no quantities of either the K167 or K168 wastewater that will require alternative commercial treatment, and therefore this volume is assumed to be zero. There is adequate wastewater treatment capacity available should the need for treatment of the wastewater form of these wastes arise. EPA estimates of the quantity of nonwastewater forms of K167 and K168 that may require alternative commercial treatment and be managed off-site at a commercial hazardous waste treatment facility are not included due to business confidentiality concerns. Also, the ultimate volume of waste estimated to require alternative or additional commercial treatment may change if the final listing determination changes; should this occur, we will revise the capacity analysis accordingly. The actual quantity of waste requiring commercial treatment may be smaller due to facility closures after 1992 (the year of RCRA Section 3007 survey) and changes in product formulations. We recognize the batch process nature of this industry and the speed at which facilities may change product formulations.

As described in the BDAT section above, EPA is proposing that the treatment standards be mandated treatment methods. The proposed treatment standard for nonwastewaters is combustion. We estimate that the commercially available sludge and solid combustion capacity is at least 300,000 tons per year and therefore sufficient to treat the lesser volume of these wastes which would newly require treatment. Therefore, we are proposing to not grant a national capacity variance from LDR treatment standards for these wastes.

For soil and debris contaminated with these wastes, we believe that the vast majority of contaminated soil and debris will be managed on-site and therefore would not require substantial commercial treatment capacity. Therefore, we are proposing to not grant a national capacity variance for hazardous soil and debris contaminated with the newly listed wastes covered under this proposal. Based on the questionnaire responses, there are no data showing mixed radioactive wastes or underground injected wastes associated with the proposed listings. We are also proposing to not grant a national capacity variance for mixed radioactive wastes (i.e., radioactive wastes mixed with K167 or K168) or wastes being underground injected.

We solicit any updated or additional information pertinent to this determination. We also request comments on current and future management practices and the volumes managed for these wastes.

VII. State Authority and Compliance

A. How Are States Authorized Under RCRA?

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA hazardous waste program within the State. (See 40 CFR Part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under Sections 3007, 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility.

Before the Hazardous and Solid Waste Amendments of 1984 (HSWA) amended RCRA, a State with final authorization administered its hazardous waste program entirely in lieu of 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 located in the State with permitting authorization. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time-frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

By contrast, under Section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by the HSWA (including the hazardous waste listings finalized in this notice) take effect in authorized States at the same time that they take effect in non-authorized States. While States must still adopt HSWA-related provisions as State law to retain final authorization, EPA is directed to implement those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Authorized States are required to modify their programs only when EPA promulgates Federal standards that are more stringent or broader in scope than existing Federal standards. Section 3009 of RCRA allows States to impose standards more stringent than those in the Federal program. See also 40 CFR 271.1(I). For those Federal program changes, both HSWA and non-HSWA, that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. Less stringent regulations, both HSWA and non-HSWA, do not go into effect in authorized States until those States adopt them and are authorized to implement them.

B. What Is the Effect of Today's Proposal on State Authorizations?

We are proposing today's rule pursuant to HSWA authority. The listing of the new K-wastes 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 either interim or 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 will implement them.

A State submitting a program modification for the portions of this rule promulgated pursuant to HSWA authority may apply to receive either interim authorization under RCRA section 3006(g) or final authorization under 3006(b), if the State requirements are, respectively, substantially equivalent or equivalent to EPA's requirements. States can only receive final authorization for program modifications implementing non-HSWA requirements. The procedures and schedule for final authorization of State program modifications are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations are currently scheduled to expire on January 1, 2003 (see 57 FR 60129, February 18, 1992).

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 must modify their programs to adopt this regulation is determined by the date of promulgation of a final rule in accordance with section 271.21(e)(2). Table 1 at 40 CFR 271.1 is amended accordingly. Once EPA approves the modification, the State requirements become RCRA Subtitle C requirements.

States with authorized RCRA programs already may have regulations similar to those in this proposed rule. These State regulations have not been assessed against the Federal regulations being finalized 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.

C. Who Must Notify EPA That They Have a Hazardous Waste?

Under RCRA Section 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 listings and have already (1) notified EPA that they manage other hazardous wastes, and (2) received an EPA identification number. However, any person who generates, transports, treats, stores, or disposes of these wastes 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 90 days after the effective date.

D. What Do Generators and Transporters Have To Do?

Persons that generate newly identified hazardous wastes may be required to obtain an EPA identification number if they do not already have one (as discussed above). In order to be able to generate or transport these wastes after the effective date of this rule, generators of the wastes listed today will be subject to the generator requirements set forth in 40 CFR 262. These requirements include standards for hazardous waste determination (40 CFR 262.11), compliance with the manifest (40 CFR 262.20 to 262.23), pretransport procedures (40 CFR 262.30 to 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 to 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 units that are container storage units or tank systems; the regulations also place a limit on the maximum amount of time that wastes can be accumulated in these units. If these wastes are managed in units that are not tank systems or containers, these units are subject to the permitting requirements of 40 CFR 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, the regulations require that persons who transport newly identified hazardous wastes to obtain an EPA identification number as described above; such transporters will be subject to the transporter requirements set forth in 40 CFR Part 263.

E. Which Facilities Are Subject to Permitting?

1. Facilities Newly Subject to RCRA Permit Requirements

Facilities that treat, store, or dispose of wastes that are subject to RCRA regulation for the first time by this proposed 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). In order 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 6 months after date of publication of the final rule. 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 6 months after date of publication of the final rule, 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 identified hazardous 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., 6 months after date of publication of a final rule). By doing this, the facility may continue managing the newly listed wastes. 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 wastes (see 40 CFR 270.42(g)). This provision States that a permittee may continue managing the newly listed wastes 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 a final 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 tank or container units 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 permanently authorized (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 6 months after the date of publication of a final rule. 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 identified hazardous wastes are generated or managed will be subject to all applicable requirements of 40 CFR 264 for permitted facilities or 40 CFR 265 for interim status facilities, unless the unit is excluded from such permitting by other provisions, such as the wastewater treatment tank exclusions (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, waste piles, incinerators, and any other miscellaneous units in which these wastes may be generated or managed.

5. Closure

All units in which newly identified hazardous wastes are treated, stored, or disposed after the effective date of this regulation that are not excluded from the requirements of 40 CFR 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 264 or 265 (e.g., Subpart N for landfill units). In addition, EPA promulgated a final rule that allows, under limited circumstances, regulated landfills or surface impoundments 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 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).

VIII. CERCLA Designation and Reportable Quantities

A. What Is the Relationship Between RCRA and CERCLA?

CERCLA defines hazardous substances to include RCRA hazardous wastes. When EPA adds a hazardous waste under RCRA, the Agency also adds the waste to its list of CERCLA hazardous substances. CERCLA also establishes a reportable quantity or RQ for each CERCLA hazardous substance as one pound and authorizes EPA to adjust the RQ based on an evaluation of its physical, chemical, and toxic properties. 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 and State and local authorities. EPA provides a list of the CERCLA hazardous substances along with their RQs in Table 302.4 at 40 CFR 302.

B. Is EPA Proposing To Add Dye and Pigment Production Wastes to CERCLA?

Yes. Today, EPA is proposing to add the dye and pigment production wastes (K167 and K168) to the list of CERCLA hazardous substances. Specifically, EPA is proposing to add the K167 and K168 waste streams as EPA defines them at 40 CFR Part 261 to Table 302.4 at 40 CFR Part 302.

C. Is EPA Proposing To Adjust the Statutory One Pound RQ for K167 and K168 Wastes?

No. Today, EPA is proposing to retain the statutory RQ of one pound for both K167 and K168 wastes. Some of the information on which the Agency is basing its decision to list the waste has been claimed to be confidential business information (CBI) collected for the purposes of RCRA. The Agency would have to rely on some of this information to establish RQs for these wastes under CERCLA. EPA adjusts an RQ of a waste stream based on an evaluation of all of the listed constituents of that waste. Both K167 and K168 wastes may contain hazardous constituents that have been claimed to be CBI. At this point, the Agency has been enjoined from releasing any information claimed as CBI and collected pursuant to this rulemaking. Until the Agency solves pending questions regarding the use of information collected pursuant to RCRA and claimed as CBI for this listing and for the CERCLA RQ determination, EPA is deferring making adjustments to the statutory RQs of these wastes.

D. When Do I Need To Report a Release of K167 and K168 Wastes Under CERCLA?

If EPA promulgates today's proposed rule, you will need to report a release of either K167 or K168 waste if you are the person in charge of a vessel or facility that releases either waste and the amount that is released equals or exceeds one pound.

E. How Do I Report a Release?

To report a release of any CERCLA hazardous substance (including K167 and K168, if EPA promulgates this rule) 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 also are required to report the release to State and local authorities (see 40 CFR 355). 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 to State and local authorities. After the release of an RQ or more of any CERCLA hazardous substance, you must immediately report the release 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.

F. What Is the Statutory Authority for This Program?

Section 101(14) of CERCLA defines the term hazardous substance by referring to substances listed under several other environmental statutes, as well as those substances that EPA designates as hazardous under CERCLA section 102(a). In particular, CERCLA section 101(14)(C) defines the term hazardous substance to include ''any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act.'' CERCLA section 102(a) gives EPA authority to determine RQs for CERCLA hazardous substances. CERCLA section 102(b) establishes a one pound RQ for all hazardous substances unless and until EPA adjusts the RQ under section 102(a). CERCLA section 103(a) requires any person in charge of a vessel or facility that releases a CERCLA hazardous substance in an amount equal to or greater than its RQ to report the release immediately to the federal government. EPCRA section 304 requires owners or operators of certain facilities to report releases of CERCLA hazardous substances and EPCRA extremely hazardous substances to State and local authorities.

We invite comments today's proposal to designate the K167 and K168 wastes under CERCLA and how it may affect you.

IX. Analytical and Regulatory Requirements

A. Is This a Significant Regulatory Action? (Executive Order 12866)

Under Executive Order 12866, EPA must determine whether a regulatory action is significant and, therefore, subject to OMB review and the other provisions of the Executive Order. A significant regulatory action is defined by Executive Order 12866 as one 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 rights and obligations or 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 Executive Order 12866.

Under the terms of Executive Order 12866, we have determined that this rule is a ''significant regulatory action'' because of point four (4) above: the rule raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order. Today's proposed concentration-based listing action deviates from the Agency's standard or historic listing approach. Historically, the Agency's listing program has captured entire quantities of targeted wastestreams posing unacceptable risks to human health and the environment. Today's approach identifies targeted wastestreams but proposes listing only those quantities containing one or more constituents of

concern at concentration levels that reflect unacceptable risks. This action, therefore, was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record.

Although this rule is not ''economically significant,'' the Agency has prepared an economic support document for today's rule entitled: Economic Assessment for the Proposed Listing of Wastewater Treatment Sludge from the Production of Triarylmethane (TAM) Dyes and Pigments, and Spent Filter Aids from Azo, Anthraquinone, or Triarylmethane Dyes, Pigments, and Colorants. This Economic Assessment addresses, among other factors, compliance costs to the regulated community, industry economic impacts, qualitative benefits, small entity impacts, children's health, and environmental justice. A summary of findings from this Economic Assessment is presented below. The complete Economic Assessment document is available in the RCRA docket for today's rule.

Today's proposed action is projected to result in incremental annual compliance costs to the organic dyes and pigments industries, however at this time we cannot include the range of aggregate costs due to business confidentiality concerns. Estimated impacts on potentially affected land disposal facilities are highly variable, depending upon the regulatory option. Due to business confidentiality concerns, we are currently not able to include annual aggregate nationwide compliance costs to land disposal facilities.

B. Why is This Proposed Rule Necessary?

While waste produced by dye and pigment facilities already is regulated to a certain extent, certain waste streams generated by these facilities still pose both human health and ecological risks. Current disposal practices for both spent filter aids and TAM wastewater treatment sludge have the potential to pollute soil and water. To date, the market and other private sector institutions have failed to address pollution issues associated with these two wastestreams for several reasons.

First, because individuals not responsible for the pollution bear the costs in human health and ecological damages, insufficient incentives exist for dye and pigment facilities to incur the additional costs for implementing pollution control measures. In this case, the private industry costs of production do not fully reflect the human health and environmental costs of management of these two wastestreams. This situation, referred to as ''environmental externality,'' represents a type of market failure. A non-regulatory approach, such as educational outreach programs, would be largely ineffective because the people who are made aware of the potential health risks (*e.g.*, those people living near landfills where these two wastestreams are disposed) have limited ability to reduce exposure without incurring significant costs.

Second, the parties harmed by the pollution of soil and water are not likely to obtain compensation from dye and pigment facilities through legal or other means. This is due to the high transaction costs involved, and the difficulty citizens may have in establishing a causal relationship between the damage incurred and activity at the dye or pigment facility. Establishing a direct link between a specific dye or pigment facility and human health and/or other damages incurred would be especially difficult since under current practices many facilities dispose of wastes in landfills where it is co-mingled with many other wastes.

We believe that federal government intervention is necessary to correct for these market distortions and to fairly and consistently internalize costs associated with these negative externalities. We feel that federal regulation is the optimal means of correcting these market failures. EPA, therefore, is proposing a concentration based hazardous waste listing for spent filter aids and TAM wastewater treatment sludge.

C. What Regulatory Options Were Considered?

We considered three regulatory options for management of the two waste streams examined in this assessment. These were: no listing-status quo, the standard listing approach (covering the entire quantity of all affected wastestreams), and a concentration-based listing approach. The no-list option would result in affected facilities not incurring any incremental management and administrative costs under RCRA Subtitle C. This option, however, may result in affected facilities facing future human health and environmental liabilities for groundwater damages. The standard listing (includes all affected wastes) option would require that all affected facilities comply with RCRA Subtitle C regulations. These facilities would incur incremental management and administrative costs required under RCRA Subtitle C. The concentration-based listing approach requires that affected facilities determine whether or not their waste contains constituent concentrations that exceed regulatory limits. If concentrations exceed regulatory limits, the waste is regulated under RCRA Subtitle C and the facility will incur incremental management, administrative, and analytical costs. Because of the wide variation in the types of constituents and concentrations present in these two waste streams, the Agency is proposing a concentration-based listing approach in today's action.

D. What are the Potential Cost Impacts of Today's Proposed Rule?

1. Introduction and Scope of Analysis

The value of any regulatory policy is traditionally measured by the net change in social welfare that it generates. The Economic Assessment conducted in support of today's proposed action examines both costs and benefits in an effort to anticipate the overall change in social welfare. The primary focus of the analysis is on compliance costs and economic impacts potentially borne by the dyes and pigments industries. Benefits are examined on a qualitative basis. Other regulatory issues covered in the Economic Assessment include small entity impacts, environmental justice, children's health, and unfunded mandates. The Economic Assessment also examines potential impacts on land disposal facilities which have received wastes considered in this rulemaking.

2. Key Data Sources

The primary source of information used to establish baseline conditions in the dyes and pigments industries was from RCRA 3007 questionnaires. The RCRA 3007 data used in this analysis represent the total number of facilities believed to be generating TAM and spent filter aid waste. Other key data sources include: the 1992 Census of Manufacturers, the U.S. International Trade Commission, and various news sources which report on industry trends. Because our data were limited, the estimated findings from this analysis should be viewed as national, and not specific to any discernible facility.

3. Industry Profile and Market Overview

Today's proposed action is expected to affect three different industries; the organic dyes industry, the organic pigments industry, and the municipal and industrial solid waste landfill industry. The organic dyes and pigments industries produce dyes and pigments for a wide variety of intermediate and end users including the automotive, textile, printing, and

plastics industries. The municipal and industrial solid waste landfill industry receives and manages waste from industries generating nonhazardous or exempt materials. A hazardous determination for wastes previously accepted as nonhazardous may require modified management procedures for the leachate generated from municipal and industrial facilities that have previously accepted these wastes.

Organic Dyes and Pigments Industries—General

Both the organic dyes industry and the organic pigments industry are classified under the North American Industry Classification System (NAICS) as 325132, Synthetic Organic Dye and Pigment Manufacturing. The Ecological and Toxicological Association of the Dyestuffs Manufacturing Industry (ETAD) defines dyes as ''intensely colored or fluorescent organic substances which impart color to a substrate by selective absorption of light.'' The Color Pigment Manufacturers' Association (CPMA) defines pigments as ''colored, black, white, or fluorescent particulate organic or inorganic solids, which usually are insoluble in, and essentially physically and chemically unaffected by, the vehicle or substrate in which they are incorporated.''

More than 2,000 individual dyes are manufactured, generally in multiple small batch quantities. This large number of dyes is attributable to the many different types of materials to which dyes are applied and the different conditions of service for which dyes are required. There are fewer pigments produced than dyes, however, pigment batches are generally larger in size. Organic dyes are classified in several ways including their chemical structure or class, general dye chemistry, and application process. Chemical structure classifications include azos, triarylmethanes (TAM), diphenylmethanes, anthraquinones, stilbenes, methines, polymethines, xanthenes, phthalocyanines, and sulfurs. Organic pigments are derived in whole or in part from benzenoid chemicals and colors and are described as toners or lakes. These pigments essentially are the same in final form, but differ in their preparation method. This proposed waste listing is concerned with TAM wastewater treatment sludges and spent filter aid waste streams resulting from the production of azo, anthraquinone, or triarylmethane dyes, pigments, and colorants.

In 1992, the most recent year for which consistent data are available, there were reportedly 38 establishments listed under Standard Industrial Classification (SIC) 28652, Synthetic Organic Dyes, and 42 establishments listed under SIC Code 28653, Synthetic Organic Pigments, Lakes, and Toners (Bureau of the Census, 1992 Census of Manufacturers). Total employment was estimated at 5,200 individuals for the synthetic organic dyes industry and 4,500 individuals for the synthetic organic pigments industry. Aggregate annual wages for both the dyes and pigments industries totaled approximately $375 million in 1992.

There are significant barriers to entry in both the dyes and pigments industries in terms of capital investment and environmental liability. Both dyes and pigments are produced by organic synthesis, which translates into capital- and time-intensive requirements, making a certain level of economy to scale a necessity. During the 1980s, many smaller dyes businesses either closed or were acquired by larger companies. The smaller dye producers that remain operating today typically supply niche markets not serviced by the large producers because of profitability, environmental concerns, or small volumes. During the 1980s, the colored pigments industry was dramatically restructured due to globalization of pigment markets, competitive factors, and the increasing cost of plant improvements to meet governmental standards, particularly in the United States. A number of smaller producers, unable to compete with larger international firms, closed their plants or were acquired by larger firms, primarily from Western Europe or Japan.

Consolidation has continued in the dyes and pigments industries throughout the 1990s, and is expected to continue through the year 2000 as the industries face increasing pressure from the growth of low-cost producers in Asia and other developing countries. The synthetic organic pigments industry currently consists of a few large multinational companies and a number of smaller pigment companies that specialize in a few product lines. Sales of organic pigments make up a relatively small portion of these multinational's overall chemical sales. The majority of the U.S. dye business is currently controlled by European-owned companies operating in the United States.

The U.S. International Trade Commission's (USITC) production data for the five-year period from 1990 through 1994 indicated that dye production was highest in 1993 at approximately 160,000 tons. Production declined in 1994 to approximately 156,000 tons. More recent production information is not available. The Chemical Market Reporter, December 22, 1997, indicates that the demand for organic dyes is likely to increase between 2.0 and 2.5 percent annually through the end of the decade. The average unit value of all dyes has varied from approximately $6,000 to $6,800 per ton during the 1990 through 1993 period; data for 1994 are not available. The total production value of dyes in the mid 1990's was approximately $1.0 billion. The Industry and Trade Summary: Synthetic Organic Pigments, USITC Publication 3021, February 1997, indicates that total U.S. production of organic pigments grew from 56,400 tons in 1991 to an estimated 71,500 tons in 1995. The average unit value of all organic pigments has varied from about $14,800 to $16,100 per ton over the 1991 through 1995 period. The total production value of organic pigments is estimated at $1.2 billion for 1997.

The majority of organic dye imports to the U.S. in the mid 1990's came from Western Europe. Most of these imports represented intra company sales between European dye manufacturers and their U.S. subsidiaries. Asia accounted for the vast majority of remaining imports. Industry experts predict that this distribution will remain unchanged through the year 2,000. The pigments industry is a global industry with imports having a significant impact on the U.S. market. The major synthetic organic pigments suppliers to the United States have been Germany, Japan, Switzerland, and the United Kingdom. In 1995, these four countries accounted for 73 percent of the value of organic pigments imports. In recent years, imports of lower technical requirement pigments have increased, with the Republic of Korea and Japan being the major suppliers. In recent years, China and India have emerged as important suppliers to the U.S. synthetic organic pigment market. Analysts expect this trend to continue and indicate that increased Chinese imports place downward pressure on prices.

The largest export markets for the U.S. dye industry in 1992, in terms of quantity, were Canada, Mexico, United Kingdom, the Netherlands, and Japan. U.S. exports to Western Europe were mostly intra company sales between European dye manufacturers and their U.S. subsidiaries. The primary export markets for U.S. synthetic organic pigments are Canada, Belgium, the United Kingdom, and Japan. During 1991–95, total U.S. organic pigments exports increased 50 percent from $200

million in 1991, to $299 million in 1994, with a slight decline in 1995. A large portion of U.S. exports to Europe were believed to be sales by large European-owned multinational companies with production facilities in the U.S. The strength of the U.S. dollar will have a significant impact on the ultimate strength of U.S. exports.

The Municipal and Industrial Solid Waste Landfill Industry

A disposal practice for nonhazardous organic dye and pigment industry wastes is off-site disposal in industrial and/or municipal solid waste landfills. The leachate derived from these wastes has traditionally been collected and recirculated, treated, or disposed. Because of the proposed listing, collected leachate from landfills (i.e., cells) that have accepted these wastes may be hazardous under the Derived-from Rule. Also, when the leachate from these two wastes mixes with leachate from other wastes, the entire leachate quantity from the affected landfill (or cell) may be considered hazardous under the Mixture Rule. By changing the regulatory status of the proposed wastes, the collected leachate from the disposal of these wastes will be covered under Subtitle C of RCRA. Municipal Solid Waste (MSW) and industrial landfills that have previously accepted and generated leachate from these wastes may face increased leachate management costs.

The EPA Report, Characterization of Municipal Solid Waste in the United States: 1997 Update, EPA530–R–98–007, May 1998, estimates there were approximately 2,400 MSW landfills in the contiguous U.S. for 1996. Based on the best available data, we have determined the number of MSW and industrial landfills that received the two organic dye and pigment industry wastes proposed for listing. This information, however, is not included due to business confidentiality concerns.

It is highly probable that these landfills are located within 50 miles of the organic dyes and pigments facilities. Leachate quantities generated by each of these landfills are dependent upon the geographic location, area, leachate collection system design, and operation of the landfill. Recent information from the Solid Waste Digest indicates that landfills receiving anywhere from 250 to 1,500 tons of waste per day are representative of landfills receiving dye and pigment wastes. Based on an average national tipping fee, the approximate annual sales for a landfill that, on average, accepts 750 tons of waste per day, would be about $7.7 million. Aggregate nationwide municipal landfill revenues are estimated in the range of $6.2 to $37.1 billion per year.

4. Baseline Waste Management Procedures and Costs

This section briefly summarizes the baseline management procedures and costs the dyes and pigments industries are subject to in contending with the proposed wastes. Baseline leachate management procedures and costs experienced by landfills accepting the proposed dye and pigment wastes are also discussed.

Organic Dyes and Pigments—Proposed Wastestream Listings

The two wastes generated during the production of dyes and pigments that we are proposing for listing as hazardous under RCRA are identified as K167 and K168. These are described below:

K167—Spent filter aids, diatomaceous earth, or absorbents used in the production of azo, anthraquinone, or triarylmethane dyes or pigments.

K168—Wastewater treatment sludge from the production of TAM dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).

The annual generation of these proposed hazardous wastes are estimated and analyzed as combined quantities. Further discussion on management practices is not included due to business confidentiality concerns. This analysis applies baseline scenarios using both MSW lined and industrial D unlined landfill facilities.

Costs for baseline waste management practices were derived from published sources and industry submitted data. The cost for waste disposal in a lined MSW landfill with leachate collection is estimated at $75 per ton. Disposal in an unlined landfill is estimated at $63 per ton. Waste disposal costs for Facilities currently managing under Subtitle C are estimated at $650 per ton for incineration and $213 per ton for disposal in a Subtitle C landfill. Waste discharge to a POTW is estimated to cost $1.50 per 1,000 gallons. The Subtitle C transportation cost is estimated at $53 per ton, within a 200-mile limit.

Dye and Pigment Leachate Management—Affected Landfills

Our analysis indicates that a number of landfills are likely to be affected by the proposed dye and pigment listing. The number of affected landfills, however, is not included here due to business confidentiality concerns. Data on leachate management practices for these landfills are extrapolated from a petroleum sample leachate management distribution. Applying the distribution of management practices identified in the petroleum sample to the population of landfills affected by the two wastes indicates results that cannot be included due to business confidentiality concerns.

The average leachate and condensate quantities generated per representative landfill over the 5-year expected generation scenario are as follows: 5.0 million gallons per year discharge via a NPDES-permit, 4.2 million gallons per year to a POTW, 2.0 million gallons per year trucked to an off-site POTW, 1.6 million gallons per year for which a portion is trucked and the remainder (0.6 million gallons per year) is recirculated.

Baseline leachate and condensate management cost data were provided by representative landfill facilities. These data were used to develop average unit cost estimates on a per year per landfill basis for each leachate management practice. Average leachate management costs are estimated as follows: truck to an off-site POTW ($0.07/gallon), truck a portion to an off-site POTW and recirculate the remaining fraction ($0.05/gallon), discharge to an NPDES outfall ($0.04/gallon), discharge via pipe to POTW ($0.03/gallon), and recirculate ($0.01/gallon).

5. Compliance Waste Management Procedures and Costs

We considered three regulatory options in analyzing compliant waste management procedures and costs for generators of the proposed waste listings: no listing-status quo, concentration-based listing, and standard listing. The no-list option results in no incremental compliance costs. The concentration-based listing requires sampling and analysis costs not normally required under a standard listing, but may result in reduced waste quantities managed as hazardous waste. The assessment conducted for today's action examines the economic impacts to the affected facilities under the proposed concentration-based listing and assumes 100 percent of all affected wastestreams must be managed as hazardous waste. This assumption results in a high-end, or worst case scenario for examining industry economic impacts.

We also considered three regulatory options in the evaluation of compliant procedures and costs for leachate generated from landfills that have accepted the proposed dye and pigment wastestreams. These options are: no list, a Clean Water Act temporary deferral

option with a two-year impoundment deferral, and, a standard listing leachate management option that treats the leachate as hazardous waste subject to Subtitle C regulation. The no-list option would result in no incremental management and cost impacts to affected landfills. The Clean Water Act temporary deferral option would exempt the landfill leachate from being RCRA Subtitle C regulation if it is managed under the Clean Water Act. After two years, impoundments would no longer be allowed to manage exempt leachate. The standard listing option would require that landfills treat the leachate as hazardous waste and subject to Subtitle C regulation under the Derived-from and Mixture Rules. Existing exemptions would apply. We examined compliance management procedures and incremental cost to landfills under the Clean Water Act temporary deferral and standard listing options.

Organic Dyes and Pigments Industries—Proposed Wastestream Listings

Future post listing compliance waste management practices assume the promulgation of land disposal restrictions (LDRs). The compliance management practice assumed is RCRA Subtitle C hazardous waste incineration, with disposal of the resulting ash in a Subtitle C landfill. Stabilization of the incinerator ash is not assumed given the lack of significant hazardous metal constituents in the wastes. Our assumptions for other management practices reported are not included due to business confidentiality concerns. Cost estimates for compliance management activities have been derived using unit costs from published sources and additional data obtained from Agency and contractor knowledge. Subtitle C incineration and ash disposal in a Subtitle C landfill is estimated at $650/ton and $213/ton, respectively. Shipping costs to Subtitle C facilities is based on a flat fee of $53/ton for a 200-mile radius.

Facilities generating the proposed waste listings are subject to Part 262 of RCRA. There are four primary requirements specified in the Part 262 standards: plants must obtain an EPA identification number, an approved manifest system must be established, pre transport requirements must be satisfied (labeling, marking, placarding), and, specified record keeping and reporting requirements are triggered. All of the facilities affected by this proposed listing are assumed to have already been affected by the previous proposed listing. Therefore, minimal incremental administrative costs are assumed to be incurred as a result of today's proposed listing. This analysis assumes that RCRA Parts 264 and 270 do not apply.

Sampling and analysis costs in this assessment are based on the assumption that wastes produced at each facility will be sampled each year. Aggregate sampling and analysis costs are based on an average and worst case number of chemicals. Sampling and analysis costs include taking the sample, packaging, transportation, analysis of the sample, and reporting the results. Costs were estimated assuming analysis for total concentrations. The annualized sampling costs for constituents are estimated to be $153/sample, and the sampling costs for the worst-case number of constituents are estimated to be $246/sample.

Corrective action compliance costs associated with non-permitted facilities include the cost to conduct a RCRA Facility Investigation (RFI), a Corrective Measures Study (CMS), and remediate solid waste management units (SWMUs) and areas of concern (AOCs). Because of the previous listing, we assumed all facilities affected by this proposed rule will already have triggered quanitification of the above corrective action compliance costs. No incremental costs for corrective action compliance are assumed to be incurred as a result of this proposed listing.

Dye and Pigment Leachate Management—Affected Landfills

Under the Standard Listing regulatory option, the leachate collected from landfill cells that received these two waste streams will be managed according to the requirements specified under Subtitle C of RCRA. Under the Clean Water Act temporary deferral regulatory option, the Agency will exempt the leachate from being regulated as hazardous under Subtitle C if it is managed in tank systems under the Clean Water Act (including POTWs) or through recirculation. Under a no list regulatory option, leachate quantities generated at MSW landfills will continue to be regulated under Subtitle D of RCRA and leachate quantities generated at industrial waste landfills will be subject to state and local regulations.

Cost estimates for leachate compliance management and transportation activities were derived using unit costs from published sources, annualized costs (updated) developed in the previously proposed organic dye and pigment hazardous waste listings, and the recent final listing of four petroleum refining waste streams. Cost estimates have been developed on an annualized per landfill basis for capital and O&M requirements, based on a 5-year, 10-year, and 20-year period of amortization. These periods are designed to reflect the period under RCRA regulation and the remaining life of the landfill. The cost estimate ranges also cover the expected five-year leachate generation and ten-year conservative leachate generation case. Because there are fewer commercial treatment/POTW facilities permitted to receive manifested hazardous wastewaters (i.e., leachate), total transport distances are assumed to increase with the promulgation of the rule.

We have developed compliance cost estimates for the following leachate management practices: truck to a POTW, truck to a POTW plus reticulate, reticulate only, hardpipe to a POTW, and discharge via NPDES. RCRA administrative costs are also estimated. Annualized compliance costs on a per landfill basis, presented in million dollars, are estimated as follows: truck to a POTW ($1.71–$7.00), truck to a POTW plus reticulate ($1.38–$5.64), reticulate only ($0.01–$0.02) , hardpipe to a POTW (same as baseline), and discharge via NPDES ($0.10–$0.27). These costs encompass the full range of amortization over the five, ten, and twenty year period. RCRA administrative costs associated with compliance are estimated to be no more than $4,000 per landfill per year.

6. Incremental Aggregate Compliance Costs

This section summarizes the projected incremental compliance costs associated with today's proposed action. Incremental costs are estimated for the generators of the proposed dye and pigment wastes, and the Subtitle D landfill facilities that accepted these wastes.

Organic Dyes and Pigments—Proposed Wastestream Listings

Total baseline management and compliance management costs were calculated on a per unit basis for each activity. Incremental costs are the difference between baseline and compliance costs, including administrative, and sampling and analysis costs. The total incremental cost is the summation of this difference between baseline and compliance costs across all affected waste quantities/facilities. Our analysis indicates that total incremental costs associated with the proposed listing may fall within a broad range. We are not able to present these findings due to business confidentiality concerns. Presentation of the average incremental cost per ton is

also subject to business confidentiality restrictions. The high-end estimate assumes 100 percent baseline waste management in an unlined landfill, and analytical costs for the high-end estimate of constituents potentially impacted.

Dye and Pigment Leachate Management—Affected Landfills

The total incremental landfill costs are estimated by multiplying the number of affected landfills in each leachate management category by incremental landfill costs, calculated on a unit-by-unit basis. The estimated impacts on the affected land disposal facilities are highly variable, depending on the regulatory option. Under the standard listing option, costs were found to fall within a broad range. Business confidentiality restrictions prevent us from releasing this information. The range reflects a five, ten, or twenty year amortization schedule, and the five or ten year leachate generation period. Presentation of cost impacts under the Clean Waste Act temporary deferral option is also restricted due to business confidentiality concerns.

E. What Are the Potential Economic Impacts to Industry From the Proposed Rule?

We examined the economic impacts to both dye and pigment manufacturers and solid waste landfill facilities. The impacts to the dye and pigment industry were examined by comparing incremental costs to annual estimated sales for the affected product lines. Incremental compliance costs to landfills were examined as a percent of revenues from tipping fees.

Economic Impacts—Organic Dyes and Pigments Industry

Waste generation rates for filter aids and TAM sludge are variable, depending upon the product being manufactured. A model facilities approach was used based on four representative waste generation rate categories. Information regarding waste generation rates, production rates, and product sales was derived from responses to RCRA 3007 questionnaires and from U.S. International Trade Commission Reports. Like waste generation rates, product prices are also highly variable. Product prices used in this analysis ranged from $6,500 to $18,000 per ton. Data provided in U.S. International Trade Commission public reports served as a basis for approximating average industry prices.

Gross sales, based on the above range of waste generation rates and prices, were estimated. These findings, however may not be divulged due to business confidentiality concerns. A midpoint of annual gross sales was also estimated for the waste generation categories examined. It should be noted that individual facilities are likely to produce a variety of products, not all of which will be affected by this proposed rulemaking. The gross sales estimates developed for this analysis only reflect sales of affected product lines and do not reflect aggregate sales for any single facility.

Incremental compliance cost impacts were estimated but may not be released to the public due to business confidentiality concerns. The actual economic impact will likely be dependent on the price elasticity of demand for individual dye and pigment products. For example, if an affected product has many close substitutes, it is possible that the producer of the impacted product may not be able to modify prices in response to increased production costs. Conversely, dye and pigment products with unique applications may have a more inelastic demand. Prices of these products may be increased enough to largely offset any changes associated with the rulemaking. It is important to consider that this rulemaking affects less than a certain percent of the overall combined production of the dyes and pigments industries. While the estimated impacts may be experienced on selected product lines, overall impacts on the industries are expected to be less due to multiple product lines.

Economic Impacts—Solid Waste Landfills Managing Dye and Pigment Leachate

We examined average incremental compliance costs as a percent of sales (tipping fee revenues) for three different sized landfills to estimate potential economic impacts of the proposed listing on landfill management costs. The model landfill facilities were assumed to accept 250, 750, and 1,500 tons of waste per day. These sizes were selected as representative of the industry and landfills accepting dye and pigment wastes.

Annual landfill sales were derived for each of the models using an average national tipping fee of $35.81/ton. It was assumed that the landfills operated approximately 286 days a year (five and one-half days/week). Therefore, approximate annual sales for a landfill that on average accepts 750 tons of waste per day would be $7.68 million. Impact estimates are based on average leachate generation rates.

Incremental costs were examined for both the Standard Regulatory Option and the Clean Water Act temporary deferral. For each option, incremental costs were considered for six management practices. In estimating the potential economic impacts of the Standard Regulatory Option, expected incremental compliance costs based on a five-year amortization schedule were used. The five-year amortization is believed to correspond more closely to the actual leachate generation. Incremental compliance costs for the analysis of the Clean Water Act temporary deferral option are based on a 20-year capital amortization schedule.

Under the standard listing option, we have estimated costs that facilities would face if they have to truck the leachate to a POTW. These impacts cannot be presented to the public due to business confidentiality concerns. Actual incremental compliance costs for the smallest landfill size were estimated but may not be divulged. Impacts in relation to all other technologies in the standard listing scenario were estimated but may not be divulged due to business confidentiality concerns. Under the Clean Water Act temporary deferral option, costs were also estimated. Business confidentiality concerns prevent us from releasing this information also.

F. What Are the Potential Benefits From the Proposed Rule?

We conducted a qualitative benefits analysis of today's proposed listing of filter aids and TAM wastewater treatment sludges. This analysis addresses human health benefits projected as a result of the proposed listing. The analysis also examines benefits associated with waste minimization efforts potentially stimulated by this action. Potential ecological benefits are not examined. The analysis incorporates findings from, and is consistent with, the risk analysis conducted in support of this action. Incremental individual and/or population benefits are not available for incorporation into this benefits analysis.

In determining whether waste generated from the production of dyes and pigments meets the criteria for listing a waste as hazardous as set out at 40 CFR 261.11, we initially evaluated the potential toxicity and intrinsic hazard of the constituents likely to be present in the waste streams. The fate and mobility of these chemicals, the likely exposure routes, the current waste management practices, and plausible management practices were examined. Based on this assessment we identified a core list of constituents associated

with filter aids TAM sludges. We are seeking comment on the inclusion of other constituents of potential concern (see Section IV).

Human Health Benefits

One objective of a human health risk assessment is to estimate the number of chronic health impacts that could be avoided as a result of the implementation of the proposed rule. This would include the exposures by drinking contaminated water from residential wells located near the source of contamination, consuming food products contaminated by blowing dust or vapors, and otherwise being exposed directly to contaminated soil and water.

The benefit associated with today's action is the enhanced security associated with more stringent management requirements for the proposed ''high concentration'' filter aid and TAM wastestreams. When these wastestreams are managed under the more stringent Subtitle C requirements, the risks to human health and the environment associated with their disposal is minimized.

Waste Minimization Benefits

Regulatory compliance costs for the dyes and pigments industries may be lowered through use of waste minimization practices. A previously issued guidance document on pollution prevention, recycling, and reuse practices for the dye manufacturing industry offers a number of general and specific alternatives. Engineering site visits, particularly at newer facilities, indicated that a number of these practices are economically and technically feasible. These visits also pointed out areas of improvement needed at all facilities, most notably reduction of wastewater volume.

Specific waste minimization procedures and corresponding cost reductions tend to be highly dependent on the manufacturing processes at each facility. The following waste minimization opportunities for specific plant operations and waste streams may decrease compliance costs through reduction in waste volume at dye and pigment facilities: filtering devices with reusable membranes, centrifugation, dry collection of dust and fines whenever practicable, automated handling and measurement of raw materials and products, and consideration of process integration for recycling to other parts of the same facility.

As noted earlier in today's notice, a concentration-based listing also provides an added incentive for generators to reduce the level of hazardous constituents of concern. If constituent levels are reduced to below the concentration levels specified in the listing regulation, then their waste will not be regulated as hazardous.

G. What Consideration Was Given to Small Entities?

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities.

We conducted a screening analysis to answer a series of questions regarding the potential impacts of the proposed dyes and pigments waste listing on small entities. This analysis was conducted per the requirements of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), and Agency guidance. Our screening analysis came to a definitive conclusion. However, we are not able to divulge this conclusion due to business confidentiality concerns.

The Small Business Administration (SBA) size standard for small businesses in the dyes and pigments industry, which is part of cyclic crudes and intermediates (NAICS 325132) is 750 employees (13 CFR 121.201). This, and all size standards apply to the owners or parent corporation, of the business, and not individual plant operations which are most directly affected by this proposed regulation. Of the dye and pigment companies potentially affected by the regulation, we have determined the maximum number of small businesses under the SBA size standard. This determination, however, is not available for public release due to business confidentiality concerns. It is possible that some of the landfills affected by this rulemaking may be small according to the SBA size standards for landfills (less than $5 million in sales).

Data are not available on the financial status of the small entities in question, as they are privately held companies. However, we have made a preliminary estimate of the impact on these companies, assuming that 100 percent of all wastes are managed as Subtitle C. We may not release this finding due to business confidentiality concerns.

It is important to recognize that these estimates are based only on product sales which are directly associated with the waste generated. For instance, an individual company may produce 100 different dyes, but spent filter aids may only be generated in the production of 20 of them. In this case, the impact estimate only represents the sales value of the 20 dyes associated with the generation of the spent filter aids, and not on overall company sales. Overall company impacts would be lower. For the landfills potentially affected by the rule, impacts have been estimated but are not available for release due to business confidentiality concerns.

As a result of the screening analysis, the Agency has come to a conclusion concerning small business impacts but is not able to release this information due to business confidentiality concerns. This rule does not require a full regulatory flexibility analysis. The Economic Assessment document presents the complete regulatory flexibility screening analysis conducted in support of today's action.

H. What Consideration Was Given to Children's Health?

Children's Health (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 planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. This proposed rule is not subject to the Executive Order because it is not economically significant as defined in E.O. 12866, 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.

The topic of environmental threats to children's health is growing in regulatory importance as scientists, policy makers, and village leaders continue to recognize the extent to which children are particularly vulnerable to environmental hazards.

Recent EPA actions have been in the forefront of addressing environmental threats to the health and safety of children. Today's proposed rule further reflects our commitment to mitigating environmental 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 are reflected in the higher baseline risk levels for children.

Today's proposed rule will reduce risks posed by the hazardous constituents found in the listed waste streams by requiring more appropriate and safer management practices. EPA considered risks to children in its risk assessment and set allowable concentrations for constituents in the waste at levels that are believed to be protective to children, as well as adults. The more appropriate and safer management practices proposed in this rule are projected to reduce risks to children potentially exposed to the constituents of concern.

The public is invited to submit or identify peer-reviewed studies and data, of which the agency may not be aware, that assess results of early life exposure to the proposed hazardous constituents from filter aids and TAM waste generated in the production of organic dyes and pigments.

I. What Consideration Was Given to Environmental Justice?

Environmental Justice (Executive Order 12898)

Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population'' (February 11, 1994), is designed to address the environmental and human health conditions of minority and low-income populations. EPA is committed to addressing environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental impacts as a result of EPA's policies, programs, and activities, and that all people live in clean and sustainable communities. In response to Executive Order 12898 and to concerns voiced by many groups outside the Agency, EPA's Office of Solid Waste and Emergency Response (OSWER) formed an Environmental Justice Task Force to analyze the array of environmental justice issues specific to waste programs and to develop an overall strategy to identify and address these issues (OSWER Directive No. 9200.3–17).

To comply with the Executive Order, we have assessed whether today's proposed rule may have disproportionate effects on minority populations or low-income populations. We do not have determinative facility location correlated with minority population and impacts data to indicate that the environmental problems addressed by the proposed listing for dye and pigment wastes could disproportionately effect minority or low income communities. The affected facilities, however, are distributed throughout the country and many are located within highly urbanized areas. Because the proposed rule reduces environmental risks associated with the management of the proposed waste streams, the Agency believes that this rule will not result in adverse human health and environmental impacts. Today's proposed rule, therefore, is not expected to result in any disproportionately negative impacts on minority or low income communities relative to affluent or non minority communities.

J. What Consideration Was Given to Unfunded Mandates?

Executive Order 12875

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

Today's rule implements mandates specifically and explicitly set forth by the Congress without the exercise of any policy discretion by EPA. This action is proposed under the authority of Sections 3001(e)(2) and 3001 (b)(1) of the Hazardous and Solid Waste Amendments (HSWA) of 1984, which direct EPA to make a hazardous waste listing determination for certain wastes from the dye and pigment industries. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

Unfunded Mandates Reform Act (UMRA)

The Unfunded Mandates Reform Act (UMRA) of 1995 supersedes Executive Order 12875 and reiterates previously established directives, while imposing additional requirements. Title II of the UMRA, Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions by State, local, and tribal governments and the private sector. Under section 202 of UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed rules and final rules for which the Agency published a notice of proposed rulemaking if those rules contain ''Federal mandates'' that may result in the expenditure by State, local, and tribal governments , in the aggregate, or to the private sector, of $100 million or more in any single year. If a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives. Under section 205, EPA must adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule, unless the Administrator publishes with the final rule an explanation why that alternative was not adopted. The provisions of section 205 do not apply when they are inconsistent with applicable law.

We have determined that this proposed rule will not result in the expenditure of $100 million or more by State, local, and tribal governments, in

the aggregate, or by the private sector in any single year.

K. What Consideration Was Given to Tribal Governments Analysis?

Executive Order 13084

Under Executive Order 13084, ''Consultation with Tribal Governments,'' the EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, or that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If EPA complies by consulting, the EPA must provide the Office of Management and Budget, in a separately identified section of the preamble to the rule, or proposed rule, a description of the extent of our prior consultation with representatives of affected tribal governments, a summary of their concerns, and a statement supporting the need to issue the regulation. Also, Executive Order 13084 requires the EPA to develop an effective process permitting elected and other representatives of Indian tribal governments to, ''provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

For many of the same reasons described above under unfunded mandates, the requirements of Executive Order 13084 do not apply to this proposed rulemaking. While Executive Order 13084 does not provide a specific gauge for determining whether a proposed regulation ''significantly or uniquely affects'' an Indian tribal government, this proposal does not impose substantial direct compliance costs on tribal governments and/or their communities. Tribal communities are not known to own or operate any dye or pigment manufacturing facilities, nor are these communities disproportionately located adjacent to or near such facilities. Finally, tribal governments will not be required to assume any administrative or permitting responsibilities associated with this proposed rule.

L. Was the National Technology Transfer and Advancement Act Considered?

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 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 proposed rulemaking does not involved technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

M. How Is the Paperwork Reduction Act Considered in Today's Proposal?

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1918.01) and a copy may be obtained from Sandy Farmer by mail at Office of Policy (OP) Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M Street, SW; Washington, DC 20460, by email at *farmer.sandy@epamail.epa.gov*, or by calling (202) 260–2740. A copy may also be downloaded off the Internet at http://www.epa.gov/icr.

This proposed rule contains concentration-based listings that generators would be self-implementing. Under the concentration-based listings, a generator of wastes that fall within the K167 or K168 listing descriptions must comply with waste analysis requirements if it wants to determine that its waste is nonhazardous. These requirements are necessary to ensure that the levels of selected constituents in the wastes are below the regulatory levels of concern.

The Agency estimated the worst-case burden associated with complying with the requirements in this proposed rule. In 1992, the most recent year for which consistent data are available, there were reportedly 80 dye and pigment facilities (Industrial Organic Chemicals, Manufacturers-Industry Series, Census Bureau, Department of Commerce, 1992). Because of business confidentiality concerns in using the actual number of facilities that reported generating wastes that fall within the K167 or K168 listing descriptions, EPA assumed that all 80 facilities generate these wastes. In addition, EPA assumed that all 80 facilities would analyze their wastes and find the wastes to be hazardous. Under such assumptions, all of these 80 facilities, as well as subsequent handlers, would need to manage and dispose of the wastes under RCRA Subtitle C regulations.

The estimated worst-case burden results from the following requirements for industry respondents: reading the regulations; performing waste analysis, and incremental burden associated with complying with existing RCRA regulations. To the extent that this rule imposes burden as incremental to the existing RCRA regulations promulgated in previous rulemakings, those requirements have been assigned OMB control numbers 2050–0024 (ICR No. 976.08, Hazardous Waste Report—Biennial Report); 2050–0039 (ICR No. 801.12, Requirements for Generators, Transporters, and Waste Management Facilities under the Hazardous Waste Manifest System); 2050–0120 (ICR No. 1571.05, General Hazardous Waste Facility Standards); 2050–0085 (ICR No. 1442.14, Land Disposal Restrictions); and 2050–0009 (ICR No. 1573.05, Part B Permit Application, Permit Modifications and Special Permits).

EPA estimates that the total annual respondent burden for all activities will be 7,334 hours. The estimated total cost for all activities will be $508,605. If generators determine their wastes to be nonhazardous after performing waste analysis, the proposed rule contains some new notification and recordkeeping requirements. However, the information collection burden associated with these requirements would not be expected to be greater than if the generators determine their wastes to be hazardous.

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 use 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 and 48 CFR Chapter 15.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M Street, SW; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW; Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after July 23, 1999, a comment to OMB is best assured of having its full effect if OMB receives it by August 23, 1999. The final rule will respond to any OMB and public comments on the information collection requirements contained in this proposal.

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous wastes, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: June 30, 1999.

Carol M. Browner,

Administrator.

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

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

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

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

2. Section 148.18 is amended by adding paragraphs (j) and (k) to read as follows:

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

* * * * *

(j) Effective [date six months after date of final rule], the wastes specified in § 261.32 of this chapter as EPA Hazardous Waste Numbers K167 and K168 are prohibited from underground injection.

(k) The requirements of paragraphs (a) through (j) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in Subpart D of part 268 of this chapter; 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.

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 K167, K168, K169, K170, K171, and K172 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) After February 13, 2001, leachate or gas condensate derived from K169–K172 will no longer be exempt if it is stored or managed in a surface impoundment prior to discharge. After [date 24 months after publication date of the final rule], leachate or gas condensate derived from K167–K168 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) after the emergency ends.

* * * * *

5. Section 261.32 is amended by designating the introductory text and the table as paragraph (a) and by amending the newly designated table by adding a new subgroup ''Organic dyes and pigments'' and it's entries at the end of the table and by adding paragraphs (b) and (c) to read as follows.

§ 261.32 Hazardous wastes from specific sources.

(a) * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazardous code
	* * * * * * *	
Organic dyes and pigments:		
K167	Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments, or FD&C colorants, unless these wastes do not contain any of the constituents identified in paragraph (b)(3)(iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent as demonstrated by the procedures specified in paragraph (b) of this section.	(T)
K168	Wastewater treatment sludges from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock), unless these wastes do not contain any of the constituents identified in paragraph (b)(3)(iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent as demonstrated by the procedures specified in paragraph (b) of this section.	(T)

(b) *Procedures for determining potential K167 and K168 wastes to be nonhazardous.* A generator of wastes that fall within the K167 or K168 listing descriptions must use the following waste analysis and handling procedures if it wants to determine that its waste is nonhazardous. If the procedures are completed and the waste is determined to be nonhazardous within 60 days of [the effective date of the final rule], or within 60 days after the waste is first generated, then all of the waste generated after the effective date or the first generation date is nonhazardous (assuming the levels of the relevant constituents identified in paragraph (b)(3)(iii) of this section are in fact below the listing levels). If the determination is made more than 60 days after [the effective date of the final rule] or 60 days after the waste is first generated, the determination will not become effective until the date the generator receives a written receipt or confirmation (e.g., Registered Mail or delivery service receipt) that its notification and certification has been delivered to the EPA. After the generator has received this receipt or confirmation, any waste generated on or after the generation date of the waste that was analyzed for the hazardousness determination is nonhazardous (assuming the levels of the relevant constituents identified in paragraph (b)(3)(iii) of this section are in fact below the listing levels). Any waste generated prior to that generation date remains hazardous.

(1) *Initial waste analysis.* The waste generator must collect a minimum of 4 representative samples of the waste as-generated and analyze it for the constituents identified in the applicable list under paragraph (b)(3)(iii) of this section. Instead of analyzing for a constituent, the generator may also apply knowledge of the constituents in the wastes based on the materials and processes used to document that a constituent is not present in the waste.

(2) *Waste holding and handling.* The waste generator must store the waste until a hazardous waste listing determination is completed as specified in the condition in paragraph (b)(3) of this section. The waste must be stored in containers, or in another manner that does not involve land placement.

(3) *Hazardous or nonhazardous waste listing determination for waste as-generated.* The waste generator, following an initial waste analysis, must make a hazardous or nonhazardous determination for the waste as-generated based on the data obtained from the initial waste analysis.

(i) *Hazardous determination.* If any of the waste sampled contains any of the constituents in the applicable list under paragraph (b)(3)(iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent, the waste is a listed hazardous waste and subject to all applicable RCRA Subtitle C hazardous waste requirements.

(ii) *Nonhazardous determination.* If none of the waste sampled contains any of the constituents in the applicable list under paragraph (b)(3)(iii) of this section at concentrations equal to or greater than the hazardous levels set for these constituents, the waste is determined to be nonhazardous and subject only to notification and recordkeeping requirements described in paragraph (c) of this section.

(iii) *Hazardous (listing) levels.* All concentrations in the waste sample(s) for constituents identified in this paragraph (b)(3)(iii) that are equal to or greater than the following levels:

CONSTITUENT LEVELS FOR K167 (MG/KG)

[Levels are not included due to business confidentiality concerns]

Aniline	
Benzaldehyde	
p-Chloroaniline	
p-Cresol	
N,N–Dimethylaniline	
3,3′–Dimethoxybenzidine	
Diphenylamine	
1,2–Diphenylhydrazine	
Formaldehyde	
Naphthalene	
Phenol	
p-Phenylenediamine	
o-Toluidine	
p-Toluidine	

[Other constituent(s) not included due to business confidentiality concerns]

CONSTITUENT LEVELS FOR K168 (MG/KG)

Benzaldehyde	5000
Dimethylamine, N,N-	300
Diphenylamine	27000
Formaldehyde	7000
Toluidine, o-	13
Toluidine, p-	23

[Constituent not included due to business confidentiality concerns]

(4) *Hazardous or nonhazardous waste listing determination for wastes after treatment.* If a waste that has been determined to be a K167 or K168 listed hazardous waste is treated to below hazardous levels, the waste generator or treater may make a determination that the residue of the treatment process is nonhazardous by applying the process set forth for wastes as-generated in paragraphs (b)(1) through (b)(3) of this section to the treated waste. The effective date of when the residue becomes nonhazardous will be the date when the waste generator or treater receives a return receipt or confirmation that the notification and certification submitted has been delivered to EPA. However, the residue remains subject to the LDR treatment standards for K167 or K168 as appropriate.

(5) *Follow-up analysis.* The waste generator must collect and analyze a minimum of one representative sample of the nonhazardous waste every calendar year it is generated. The waste generator must also analyze a minimum of one representative sample of the nonhazardous waste anytime, after the initial waste analysis, there is a process change that may increase the concentration of hazardous constituents in the waste. If process change has not occurred, the waste generator may use the results of the initial waste analysis to create a more tailored list of constituents for follow-up analysis. If follow-up analysis (or any analysis of your waste after the initial waste analysis) shows that any of the waste sampled contains any of the constituents in the applicable list under paragraph (b)(3)(iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent, the waste is a listed hazardous waste and subject to all applicable RCRA Subtitle C requirements. In order to determine the waste nonhazardous again, the waste generator or treater must apply all of the procedures in paragraphs (b)(1) through (b)(3) or paragraph (b)(4) of this section to the waste.

(c) *Notification and recordkeeping requirements for wastes determined to be nonhazardous.* These requirements apply only for wastes that have been determined to be nonhazardous based on the procedures described in paragraph (b) of this section. The waste generator must meet the following notification and recordkeeping requirements prior to disposing any wastes as nonhazardous.

(1) *Submit notification.* The waste generator claiming that its waste is nonhazardous must submit a one-time notification to EPA (by mail or delivery service which provides return receipt) within 60 days following [the effective date of the final rule] or initial generation of the waste. The notification must include the waste generator's name and address, a representative's name and telephone number, description of the waste and potential waste code, and an estimate of the average annual volume of waste claimed to be nonhazardous. The notification must also include a certification signed by an authorized representative and must state as follows:

I certify under penalty of law that none of the waste sampled contains any of the constituents of concern identified for this waste at concentrations equal to or greater than the hazardous concentration levels set for these constituents, and that these levels were determined without dilution of the waste. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(2) *Maintain records on-site.* At a minimum, the waste generator is required to keep the following information on site:

(i) A copy of the notification and certification sent to EPA and return receipt.

(ii) The sampling and analysis plan used for collecting and analyzing representative sample(s) of the waste.

(iii) The initial sampling and analyses data and process knowledge information (if used) that support a nonhazardous claim for the waste.

(iv) All follow-up sampling and analyses data and process knowledge information (if used) for the most recent three years.

6–7. Appendix VII to Part 261 is amended by adding the following waste streams entries 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
*	* * * * * * *
K167	Aniline, benzaldehyde, p-chloroaniline, p-cresol, N,N-dimethylaniline, 3,3-dimethoxybenzidine, diphenylamine, 1,2-diphenylhydrazine, formaldehyde, naphthalene, phenol, p-phenylenediamine, o-toluidine, o-toluidine, and other constituents not included due to business confidentiality concerns.
K168	Benzaldehyde, N,N-dimethylaniline, diphenylamine, formaldehyde, o-toluidine, p-toluidine, and other constituents not included due to business confidentiality concerns.
*	* * * * * * *

* * * * *

8. Appendix VIII to Part 261 is amended by adding the following waste streams entries in alphanumeric order to read as follows.

Appendix VIII to Part 261—Hazardous Constituents

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * *	* * *		*
Benzaldehyde	Same	100–52–7	
* * *	* * *		*
p-Cresol	Phenol, 3-methyl-	106–44–5	U052
* * *	* * *		*
N,N–Dimethylaniline	Benzenamine, N,N-dimethyl-	121–69–7	
* * *	* * *		*
p-Phenylenediamine	Benzenediamine, 1,4-	106–50–3	
	Identity of other constituent(s) not included due to business confidentiality concerns.		

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * *	* * *	*	*

PART 268—LAND DISPOSAL RESTRICTIONS

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

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

10. Section 268.32 is added to subpart C to read as follows:

§ 268.32 Waste specific prohibitions—dye and pigment wastes.

(a) Effective [date 6 MONTHS from date of publication of final rule], the following wastes are prohibited from land disposal: the wastes specified in part 261 of this chapter as EPA Hazardous Waste Numbers K167 and K168, soil and debris contaminated with these wastes, radioactive wastes mixed with these hazardous wastes, and soil and debris contaminated with these radioactive mixed wastes.

(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 alternate treatment standards established pursuant to a petition granted under § 268.44; or

(4) 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.

11. Section 268.40 is amended by adding K167 and K168 in alphanumeric order to the Table of Treatment Standards to read as follows: (The footnotes are republished without change.)

§ 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	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3], or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP", or technology code
*	* *	*		* *	*
K167	Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments of FD&C colorants.	NA	NA	(WETOX or CHOXD) fb CARBN: or CMBST.	CMBST.
K168	Wastewater treatment sludges from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).	NA	NA	(WETOX or CHOXD) fb CARBN: or CMBST.	CMBST.
*	* *	*		* *	*

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 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.

Subpart A—Requirements for Final Authorization

13. Section 271.1(j) is amended by adding the following entry to Table 1 in

chronological order by date of publication in the **Federal Register**, and by adding the following entry to Table 2 in chronological order by effective date, 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
*	*	*	*
[Date of publication in the Federal Register of final rule].	Dye and Pigment Production Waste Listing.	[Federal Register page numbers for final rule].	[Effective date of final rule].
*	*	*	*

* * * * *

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

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	*	*	*
[Effective date of final rule]	Prohibition on land disposal of K167 and K168 wastes, and prohibition on land disposal of radioactive waste mixed with K167 and K168 wastes, including soil and debris.	3004(g)(4)(C) and 3004(m)	[Date of publication of final rule], [FR 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 entries in alphanumerical 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	Regulatory synonyms	Statutory			Final RQRQ	
			RQ	Code†	RCRA waste No.	Category	Pounds (Kg)
*	*	*	*	*	*	*	*
K167 Spent filter aids, diatomaceous earth, or adsorbents used in the production of azo, anthraquinone, or triarylmethane dyes, pigments or FD&C colorants.	.....	.....	1*	4	K167	.....	##
K168 Wastewater treatment sludges from the production of triarylmethane dyes and pigments (excluding triarylmethane pigments using aniline as a feedstock).	.....	.....	1*	4	K168	.....	##

† Indicates the statutory sources as defined by 1, 2, 3, and 4 below.

* * * * * * *

4—Indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001.

1*—Indicates that the 1-pound RQ is a CERCLA statutory RQ.

* * * * * * *

##—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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