

assay, and a statement that the U.S. Nuclear Regulatory Commission has approved distribution of the (name of source or device) to persons licensed to use byproduct material identified in §§ 35.58, 35.400, or 35.500, as appropriate, and to persons who hold an equivalent license issued by an Agreement State. However, labels worded in accordance with requirements that were in place on March 30, 1987 may be used until March 30, 1989.

* * * * *

PART 40—DOMESTIC LICENSING OF SOURCE MATERIAL

13. The authority citation for Part 40 continues to read as follows:

Authority: Sec. 161, Pub. L. 83-703, 68 Stat. 948, as amended (42 U.S.C. 2201); Sec. 201, Pub. L. 93-438, 88 Stat. 1242, as amended (42 U.S.C. 5841).

14. Section 40.4 is amended by revising paragraph (g) to read as follows:

§ 40.4 Definitions.

* * * * *

(g) "Physician" means a medical doctor or doctor of osteopathy licensed by a State or Territory of the United States, the District of Columbia, or the Commonwealth of Puerto Rico to prescribe drugs in the practice of medicine;

* * * * *

Dated at Washington, DC, this 7th day of October 1986.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,

Secretary of the Commission.

[FR Doc. 86-23168 Filed 10-15-86; 8:45 am]

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Federal Register

Thursday
October 16, 1986

Part IV

Department of Defense General Services Administration

National Aeronautics and Space Administration

48 CFR Parts 1, 6, 8, 13, 15, 31, 33, 36, 44,
52, and 53

Federal Acquisition Regulations; Final
Rule

DEPARTMENT OF DEFENSE

GENERAL SERVICES
ADMINISTRATIONNATIONAL AERONAUTICS AND
SPACE ADMINISTRATION48 CFR Parts 1, 6, 8, 13, 15, 31, 33, 36,
44, 52, and 53

[Federal Acquisition Circular 84-23]

Federal Acquisition Regulation

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Final rule.

SUMMARY: Federal Acquisition Circular (FAC) 84-23 amends the Federal Acquisition Regulation (FAR) with respect to the following: Changes to FAR 6.302-5(c)(2) to clarify procedures for certain noncompetitive purchases; Extension of Agency Policies and Procedures concerning Acquisition of Utility Services; OFPP Policy Letter 80-6 concerning appeal rights; Should-Cost Analysis to clarify its definition; Revision to FAR 33.210, Contracting Officer's Authority, to emphasize limitations in settlement of claims involving fraud; Definition of Architect-Engineer Services; Subcontracts—Clause Preface and Title (FAR 44.201, 52.244-1, and 52.222-28); and Editorial Corrections.

EFFECTIVE DATE: September 30, 1986.

FOR FURTHER INFORMATION CONTACT: Margaret A. Willis, FAR Secretariat, Room 4041, GS Building, Washington, DC 20405, Telephone (202) 523-4755.

SUPPLEMENTARY INFORMATION:**A. Public Comments**

Public comments have not been solicited with respect to these revisions since such revisions either (a) do not alter the substantive meaning of any coverage in the FAR having a significant impact on contractors or offerors, or (b) do not have a significant effect beyond agency internal operating procedures.

B. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because these final rules do not contain information collection requirements which require the approval of OMB under 44 U.S.C. 3501, et seq.

C. Regulatory Flexibility Act

Analyses of these revisions indicate that they are not "significant revisions" as defined in FAR 1.501-1; i.e., they do not alter the substantive meaning of any coverage in the FAR having a significant

cost or administrative impact on contractors or offerors, or a significant effect beyond the internal operating procedures of the issuing agencies. Accordingly, and consistent with section 1212 of Pub. L. 98-525 and section 302 of Pub. L. 98-577 pertaining to publication of proposed regulations (as implemented in FAR Subpart 1.5, Agency and Public Participation), solicitation of agency and public views on these revisions is not required. Since such solicitation is not required, the Regulatory Flexibility Act (Pub. L. 96-354) does not apply.

List of Subjects in 48 CFR Parts 1, 6, 8, 13, 15, 31, 33, 36, 44, 52, and 53

Government procurement.

Dated: October 9, 1986.

Lawrence J. Rizzi,
Director, Office of Federal Acquisition and
Regulatory Policy.

Federal Acquisition Circular

[Number 84-23]

Unless otherwise specified, all Federal Acquisition Regulation (FAR) and other directive material contained in FAC 84-23 is effective September 30, 1986.

Eleanor R. Spector,
Deputy Assistant Secretary of Defense for
Procurement.

Terence C. Golden,
Administrator.

S.J. Evans,
Assistant Administrator for Procurement.

Federal Acquisition Circular (FAC) 84-23 amends the Federal Acquisition Regulation (FAR) as specified below.

Item I—Changes to FAR 6.302-5(c)(2)

FAR 6.302-5(c) is revised to clarify that written justifications and approvals described in FAR 6.303 and 6.304 are not required when a statute expressly requires that a procurement be made from a specified source.

Item II—Extension of Agency Policies and Procedures Concerning Acquisition of Utility Services

The Civilian Agency Acquisition Council and the Defense Acquisition Regulatory Council are considering a revision of FAR Subpart 8.3, Acquisition of Utility Services. A proposed rule was published in the Federal Register on May 7, 1986 (51 FR 16988), with comments due July 7, 1986. The public comment period was extended on June 26, 1986 (51 FR 23248) to September 7, 1986, to ensure the adequacy of the time made available for public consideration of the proposed rule. Comments received to date raise a number of significant policy issues. Until these issues are resolved, a final rule will not

be promulgated and FAR 8.300 is amended to extend the period in which agency policies and procedures predating the effective date of the FAR may continue to be used for the acquisition of utility services. If, after the policy issues are resolved, a revision to the FAR is necessary, a proposed rule again will be issued for full public comment.

Item III—OFPP Policy Letter 80-6

FAR 13.105 is revised to clarify that existing appeal rights of small business specialists and SBA representatives with respect to set-asides apply to small business-small purchase set-asides.

Item IV—Should-Cost Analysis

FAR 15.801 is revised to clarify the definition of cost analysis as it relates to should-cost analysis. FAR 15.810 is revised to (1) provide a definition of should-cost analysis, which distinguishes it from cost analysis; (2) clarify the objective of a should-cost analysis; (3) provide guidance in determining the scope and size of the should-cost analysis team; and (4) require the submission of a separate audit report, if a report is appropriate.

Item V—Revision to FAR 33.210, Contracting Officer's Authority

The current instructions in FAR 33.210 are revised to emphasize the limitations on the contracting officer's authority in the settlement of claims involving fraud.

Item VI—Definition of Architect-Engineer Services

The revision to FAR 36.102, Definitions, corresponding revisions to FAR 53.236-2 of the definition on Standard Form (SF) 254, Architect-Engineer and Related Services Questionnaire, and SF 255, Architect-Engineer and Related Services Questionnaire for Specific Projects, and FAR 36.601, Policy, implement the Office of Federal Procurement Policy Letter 83-3, June 8, 1983. The revisions add a definition and guidance regarding the acquisition of architect-engineer services.

Item VII—Subcontracts—Clause Preface and Title (FAR 44.201-1, 52.244-1, and 52.222-28)

In the April 1984 edition of the FAR the clause preface at 52.244-1 included an instruction to the contracting officer which authorized lowering the subcontract dollar threshold for contracting officer consent under certain circumstances. This authority was deleted when the preface was revised by FAC 84-7, thereby creating an

ambiguity as to whether lowering the threshold is still permissible. There has been no change in policy, and the present revision simply reinstates the instruction in the clause preface.

Item VIII—Editorial Corrections

FAR 15.805-5(h) and 52.233-1(c) are revised to make corrections to FAC 84-18 published in the Federal Register on July 29, 1986 (51 FR 27114). FAR 1.105 and 31.205-46(a)(2)(ii) are revised to make corrections to FAC 84-19 published in the Federal Register on July 31, 1986 (51 FR 27488).

Therefore, 48 CFR Parts 1, 6, 8, 13, 15, 31, 33, 36, 44, 52, and 53 are amended as set forth below.

1. The authority citation for 48 CFR Parts 1, 6, 8, 13, 15, 31, 33, 36, 44, 52, and 53 continues to read as follows:

Authority: 40 U.S.C. 486(c); 10 U.S.C. Chapter 137; and 42 U.S.C. 2453(c).

PART 1—FEDERAL ACQUISITION REGULATIONS SYSTEM

2. Section 1.105 is amended by adding, in numerical order, a FAR segment and a corresponding OMB Control Number to read as follows:

1.105 [Amended]

FAR segment	OMB control No.
31.205-46(a)(3).....	9000-0088

PART 6—COMPETITION REQUIREMENTS

3. Section 6.302-5 is amended in paragraph (c)(2) by inserting a dash following the word "for" and removing the remainder of the sentence and by adding paragraphs (c)(2)(i) and (c)(2)(ii) to read as follows:

6.302-5 [Amended]

(c) ***

(2) ***

(i) Contracts awarded under (a)(2)(ii), (b)(2), or (b)(4) of this subsection; or

(ii) Contracts awarded under (a)(2)(i) of this subsection when the statute expressly requires that the procurement be made from a specified source.

(Justification and approval requirements apply when the statute authorizes, but does not require, that the procurement be made from a specified source.)

PART 8—REQUIRED SOURCES OF SUPPLIES AND SERVICES

8.300 [Amended]

4. Section 8.300 is amended by inserting in the second sentence a period following the word "used" and removing the remainder of the sentence and by removing in the third sentence the words "or any policies or procedures to be used after September 30, 1986,".

PART 13—SMALL PURCHASE AND OTHER SIMPLIFIED PURCHASE PROCEDURES

5. Section 13.105 is amended by adding in paragraph (d)(2) a second sentence to read as follows:

13.105 Small business-small purchase set-asides.

* * * * *

(d) ***

(2) *** If the SBA procurement center representative disagrees with a contracting officer's decision not to proceed with a small business-small purchase set-aside, the SBA procurement center representative may appeal the decision in accordance with the procedures set forth in 19.505.

PART 15—CONTRACTING BY NEGOTIATION

6. Section 15.801 is amended by revising the definition of "Cost Analysis" to read as follows:

15.801 Definitions.

"Cost analysis" means the review and evaluation of the separate cost elements and proposed profit of (a) an offeror's or contractor's cost or pricing data and (b) the judgmental factors applied in projecting from the data to the estimated costs in order to form an opinion on the degree to which the proposed costs represent what the cost of the contract should be, assuming reasonable economy and efficiency.

* * * * *

15.805-5 [Amended]

7. Section 15.805-5 is amended in paragraph (h) by removing in the first sentence the words "the contracting officer believes" and by inserting in the second sentence a period following the word "necessary" and removing the remainder of the sentence.

8. Section 15.810 is amended by revising paragraphs (a) and (e), by redesignating the existing paragraph (c) as (f), and by adding a new paragraph (c) to read as follows:

15.810 Should-cost analysis.

(a) Should-cost analysis is a specialized form of cost analysis which is used to evaluate the cost of production programs by evaluating and challenging a contractor's management and operating systems or portions thereof. It does not assume the use of the contractor's existing workforce, methods, materials, facilities, or management and operating systems. It addresses significant cost drivers and may be tailored to a specific part of the contractor's operations, for example, indirect expense activities, factory layout, etc. This analysis is accomplished by an integrated team of Government contracting, contract administration, pricing, audit, and engineering representatives. The objective of should-cost analysis is to promote both short- and long-range improvements in the contractor's economy and efficiency by evaluating and challenging the contractor's existing workforce, methods, materials, facilities, or management and operating systems to identify uneconomical or inefficient practices. In addition, by providing rationale for any recommendations and quantifying their impact on cost, the Government will be better able to develop realistic price objectives for negotiation.

* * * * *

(c) The scope of a should-cost analysis can range from a large-scale review examining the contractor's entire operation (including plant-wide overhead and selected major subcontractors) to a small-scale review examining specific portions of a contractor's operation. When a should-cost analysis is conducted relative to a contractor proposal, a separate audit report on the proposal is required. In determining the team size for the review, the various factors outlined in this paragraph (c) should be considered.

* * * * *

(e) In acquisitions for which a should-cost analysis is conducted, a separate should-cost analysis team report, prepared in accordance with agency procedures, is required. Field pricing reports are required only to the extent that they contribute to the combined team position. The contracting officer shall consider the findings and recommendations contained in the should-cost analysis team report when negotiating the contract price. After completing the negotiation, the contracting officer shall provide the administrative contracting officer a report of any identified uneconomical or inefficient practices, together with a

report of correction or disposition agreements reached with the contractor. The contracting officer shall establish a follow-up plan to monitor the correction of the uneconomical or inefficient practices.

PART 31—CONTRACT COST PRINCIPLES AND PROCEDURES

31.205-46 [Amended]

9. Section 31.205-46 is amended in paragraph (a)(2)(ii) by removing "Stock No. 906-010-00000-1" and inserting in its place "Stock No. 908-010-00000-1".

PART 33—PROTESTS, DISPUTES, AND APPEALS

10. Section 33.210 is amended by revising paragraph (b) to read as follows:

33.210 Contracting officer's authority.

(b) The settlement, compromise, payment or adjustment of any claim involving fraud.

PART 36—CONSTRUCTION AND ARCHITECT-ENGINEER CONTRACTS

11. Section 36.102 is amended by adding in alphabetical order the definition "Architect-Engineer Services" to read as follows:

36.102 Definitions.

"Architect-Engineer Services" means—

(a) Professional services of an architectural or engineering nature associated with research, development, design, construction, alteration, or repair of real property that are required by virtue of law to be performed by a registered or licensed architect or engineer; or

(b) Such other professional services, as determined by the contracting officer, which uniquely or to a substantial or dominant extent logically require performance by a registered or licensed architect or engineer; and

(c) Incidental services that members of the architect or engineering professions or those in their employ may logically or justifiably perform in conjunction with professional architect-engineer services acquired by Pub. L. 92-582 procedures.

12. Section 36.601 is amended by designating the existing text as paragraph (a) and adding paragraph (b) to read as follows:

36.601 [Amended]

(a) * * *

(b) Other than "incidental services" as specified in the definition of architect-engineer services in 36.102, services that do not require performance by a registered or licensed architect or engineer, notwithstanding the fact that architect-engineers also may perform those services, should be acquired pursuant to Parts 13, 14, and 15.

PART 44—SUBCONTRACTING POLICIES AND PROCEDURES

44.201-1 [Amended]

13. Section 44.201-1 is amended by removing in paragraph (d) the words "Under Fixed Price Contracts" and inserting in their place the words "(Fixed-Price Contracts)".

PART 52—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

52.222-28 [Amended]

14. Section 52.222-28 is amended by inserting a colon in the introductory text following the word "clause" and removing the remainder of the sentence.

52.233-1 [Amended]

15. Section 52.233-1 is amended by removing in the first sentence of paragraph (c) of the clause the words "certain sum" and inserting in their place the words "sum certain".

16. Section 52.244-1 is amended by removing the colon in the introductory text following the word "clause" and inserting a period in its place and by adding a second sentence to read as follows:

52.244-1 Subcontracts (Fixed-Price Contracts).

* * * The threshold in subparagraphs (b)(2) and (b)(3) of the clause may be lowered when closer surveillance of subcontracting is necessary because of the nature of the industry involved, criticality of the work expected to be subcontracted, absence of competition in placing the prime contract, uncertainties as to the adequacy of the contractor's purchasing system, or novelty of the supplies or services being purchased.

PART 53—FORMS

17. Section 53.236-2 is amended by adding at the end of paragraph (b) a second sentence and the definition "Architect-engineer services"; and by adding at the end of paragraph (c) a

second sentence and the definition "Architect-engineer services" to read as follows:

53.236-2 Architect-engineer services (SF's 252, 254, 255, 1421).

(b) * * * Pending issuance of a new edition of the form, the definition "Architect-engineer and related services" is replaced by the following: "Architect-Engineer Services" means—

(1) Professional services of an architectural or engineering nature associated with research, development, design, construction, alteration, or repair of real property that are required by virtue of law to be performed by a registered or licensed architect or engineer; or

(2) Such other professional services, as determined by the contracting officer, which uniquely or to a substantial or dominant extent logically require performance by a registered or licensed architect or engineer; and

(3) Incidental services that members of the architect-engineer professions or those in their employ may logically or justifiably perform in conjunction with professional architect-engineer services acquired by Pub. L. 92-582 procedures.

(c) * * * Pending issuance of a new edition of the form, the definition "Architect-engineer and related services" is replaced by the following: "Architect-Engineer Services" means—

(1) Professional services of an architectural or engineering nature associated with research, development, design, construction, alteration, or repair of real property that are required by virtue of law to be performed by a registered or licensed architect or engineer; or

(2) Such other professional services, as determined by the contracting officer, which uniquely or to a substantial or dominant extent logically require performance by a registered or licensed architect or engineer; and

(3) Incidental services that members of the architect-engineer professions or those in their employ may logically or justifiably perform in conjunction with professional architect-engineer services acquired by Pub. L. 92-582 procedures.

[FR Doc 86-23299 Filed 10-15-86; 8:45 am]

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Environmental Protection Agency

Thursday
October 16, 1986

Part V

Environmental Protection Agency

40 CFR Part 261

Hazardous Waste Management System;
Identification and Listing of Hazardous
Waste; Proposed Exclusions

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[SW-FRL-3095-3]

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Proposed Exclusions

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule and request for comment.

SUMMARY: The Environmental Protection Agency (EPA) today is proposing to exclude the solid wastes generated at three facilities from the lists of hazardous wastes contained in 40 CFR 261.31 and 261.32. This action responds to delisting petitions submitted under 40 CFR 260.20, which allows any person to petition the Administrator to modify or revoke any provision of Parts 260 through 265, 124, 270, and 271 of Title 40 of the Code of Federal Regulations, and 40 CFR 260.22, which specifically provides generators the opportunity to petition the Administrator to exclude a waste on a "generator-specific basis" from the hazardous waste list. The effect of this action, if promulgated, would be to exclude certain wastes generated at three particular facilities from listing as hazardous wastes under 40 CFR Part 261.

The Agency has previously evaluated all three of the petitions which are discussed in today's notice. Based on our review at that time, all three of these petitions were granted temporary exclusions. Due to changes to the delisting criteria required by the Hazardous and Solid Waste Amendments of 1984, however, these petitions have been evaluated both for the factors for which the wastes were originally listed, as well as other factors which reasonably could cause the wastes to be hazardous.

DATES: EPA will accept public comments on the proposed exclusions and denials until October 31, 1986. Comments postmarked after the close of the comment period will be stamped "late".

Any person may request a hearing on these proposed decisions by filing a request with Bruce Weddle, whose address appears below, by October 27, 1986. The request must contain the information prescribed in 40 CFR 260.20(d).

ADDRESSES: Send three copies of your comments to EPA. Two copies should be sent to the Docket Clerk, Office of Solid

Waste (WH-562), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. A third copy should be sent to Jim Kent, Variances Section, Assistance Branch, PSP/OSW (WH-563), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Identify your comments at the top with this regulatory docket number: "F-86-TRPE-FFFFF".

Requests for a hearing should be addressed to Bruce Weddle, Director, Permits and State Programs Division, Office of Solid Waste (WH-563), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

The RCRA regulatory docket for this proposed rule is located at U.S. Environmental Protection Agency, 401 M Street SW. (subbasement), Washington, DC 20460, and is available for viewing from 9:30 a.m. to 3:30 p.m., Monday through Friday, excluding Federal holidays. Call Mia Zmud at (202) 475-9327 or Kate Blow at (202) 382-4675 for appointments. The public may copy a maximum of 50 pages of material from any one regulatory docket at no cost. Additional copies cost \$.20 per page.

FOR FURTHER INFORMATION CONTACT: RCRA Hotline, toll free at (800) 424-9346, or at (202) 382-3000. For technical information, contact Lori DeRose, Office of Solid Waste (WH-562B), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202) 382-5096.

SUPPLEMENTARY INFORMATION:

Background

On January 16, 1981, as part of its final and interim final regulations implementing section 3001 of RCRA, EPA published an amended list of hazardous wastes from non-specific and specific sources. This list has been amended several times, and is published in 40 CFR 261.31 and 261.32. These wastes are listed as hazardous because they typically and frequently exhibit any of the characteristics of hazardous wastes identified in Subpart C of Part 261 (*i.e.*, ignitability, corrosivity, reactivity, and extraction procedure [EP] toxicity) or meet the criteria for listing contained in 40 CFR 261.11 (a)(2) or (a)(3).

Individual waste streams may vary, however, depending on raw materials, industrial processes, and other factors. Thus, while a waste that is described in these regulations generally is hazardous, a specific waste from an individual facility meeting the listing description may not be. For this reason, 40 CFR 260.20 and 260.22 provide an exclusion procedure, allowing persons to demonstrate that a specific waste from a

particular generating facility should not be regulated as a hazardous waste.

To be excluded, petitioners must show that a waste generated at their facility does not meet any of the criteria under which the waste was listed. (See 40 CFR 260.22(a) and the background documents for the listed wastes.) In addition, the Hazardous and Solid Waste Amendments of 1984 (HSWA) require the Agency to consider factors (including additional constituents) other than those for which the waste was listed, if there is a reasonable basis to believe that such additional factors could cause the waste to be hazardous. Accordingly, a petitioner also must demonstrate that the waste does not exhibit any of the hazardous waste characteristics, as well as present sufficient information for the Agency to determine whether the waste contains any other toxicants at hazardous levels. (See 40 CFR 260.22(a); section 222 of the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6921(f); and the background documents for the listed wastes.) Although wastes which are "delisted" (*i.e.*, excluded) have been evaluated to determine whether or not they exhibit any of the characteristics of a hazardous waste, generators remain obligated to determine whether their waste remains non-hazardous based on the hazardous waste characteristics.

In addition to wastes listed as hazardous in 40 CFR 261.31 and 261.32, residues from the treatment, storage, or disposal of listed hazardous wastes also are eligible for exclusion and remain hazardous wastes until excluded. (See 40 CFR 261.3 (c) and (d)(2).) Again, the substantive standard for "delisting" is: (1) That the waste not meet any of the criteria for which it was listed originally; and (2) that the waste is not hazardous after considering factors (including additional constituents) other than those for which the waste was listed, if there is a reasonable basis to believe that such additional factors could cause the waste to be hazardous. Where the waste is derived from one or more listed hazardous waste, the demonstration may be made with respect to each constituent or the waste mixture as a whole. (See 40 CFR 260.22(b).) Generators of these excluded treatment, storage, or disposal residues remain obligated to determine on a periodic basis whether these residues exhibit any of the hazardous waste characteristics.

Approach Used to Evaluate Delisting Petitions

The Agency first will evaluate the petition to determine whether the waste (for which the petition was submitted) is

non-hazardous based on the criteria for which the waste was originally listed. If the Agency believes that the waste is still hazardous (based on the original listing criteria), it will propose to deny the petition. If, however, the Agency agrees with the petitioner that the waste is non-hazardous with respect to the criteria for which the waste was listed, it then will evaluate the waste with respect to other factors or criteria, if there is a reasonable basis to believe that such additional factors could cause the waste to be hazardous.

The Agency is using a hierarchical approach in evaluating petitions for the other factors or contaminants (*i.e.*, those listed in Appendix VIII of Part 261). This approach may, in some cases, eliminate the need for additional testing. The petitioner can choose to submit a raw materials list and process descriptions. The Agency will evaluate this information to determine whether any Appendix VIII hazardous constituents are used or formed in the manufacturing and treatment process and are likely to be present in the waste at significant levels. If so, the Agency then will request that the petitioner perform additional analytical testing. If the petitioner disagrees, he may present arguments on why the toxicants would not be present in the waste, or, if present, why they would pose no toxicological hazard. The reasoning may include descriptions of closed or segregated systems, or mass balance arguments relating volume of raw materials used to the rate of waste generation. If the Agency finds that the arguments presented by the petitioner are not sufficient to eliminate the reasonable likelihood of the toxicant's presence in the waste, the petition would be tentatively denied on the basis of insufficient information. The petitioner then may choose to submit the additional analytical data on representative samples of the waste during the public comment period.

Rather than submitting a raw materials list, petitioners may test their waste for any additional toxic constituents that may be present and submit this data to the Agency. In this case, the petitioner should submit an explanation of why any constituents from Appendix VIII of Part 261, for which no testing was done, would not be present in the waste or, if present, why they would not pose a toxicological hazard.

In making a delisting determination, the Agency evaluates each petitioned waste against the listing criteria and factors cited in 40 CFR 261.11(a)(2) and

(a)(3). Specifically, the Agency considers whether the waste is acutely toxic, as well as the toxicity of the constituents, the concentration of the constituents in the waste, their tendency to migrate and bioaccumulate, their persistence in the environment once released from the waste, plausible types of management of the waste, and the quantities of waste generated. In this regard, the Agency has developed an analytical approach to the evaluation of wastes that are landfilled and land treated. See 50 FR 7882 (February 26, 1985), 50 FR 48886 (November 27, 1985), and 50 FR 48943 (November 27, 1985). The overall approach, which includes a ground water transport model, is used to predict reasonable worst-case contaminant levels in ground water in nearby hypothetical receptor wells—the "compliance point" (*i.e.*, the model estimates the ability of an aquifer to dilute the toxicant from a specific volume of waste). The land treatment model also has an air component and predicts the concentration of specific toxicants at some distance downwind of the facility. The compliance point concentration determined by the model then is compared directly to a level of regulatory concern. If the value at the compliance point predicted by the model is less than the level of regulatory concern, then the waste could be considered non-hazardous and a candidate for delisting. If the value at the compliance point is above this level, however, then the waste probably still will be considered hazardous, and not excluded from Subtitle C control.¹

This approach evaluates the petitioned wastes by assuming reasonable worst-case land disposal scenarios. This approach has resulted in the development of a sliding regulatory scale which suggests that a large volume of waste exhibiting a particular extract level would be considered hazardous, while a smaller volume of the same waste could be considered non-hazardous.² The Agency believes this to be a reasonable outcome since a larger quantity of the waste (and the toxicants in the waste) might not be diluted sufficiently to result in compliance point concentrations that are less than the

level of regulatory concern. The selected approach predicts that the larger the waste volume, the higher the level of toxicants at the compliance point. The mathematical relationship (with respect to ground water) yields at least a six-fold dilution of the toxicant concentration initially entering the aquifer (*i.e.*, any waste exhibiting extract levels equal to or less than six times a level of regulatory concern will generate a toxicant concentration at the compliance point equal to or less than the level of regulatory concern). Depending on the volume of waste, an additional five-fold dilution may be imparted, resulting in a total dilution of up to thirty-two times.

The Agency is using this approach as one factor in determining the potential impact of the unregulated disposal of petitioned waste on human health and the environment. The Agency has used this approach in evaluating each of the wastes discussed in today's publication. As a result of this evaluation, the Agency is proposing to delist the wastes from three petitioners.

It should be noted that EPA has not verified the submitted test data before proposing to grant these exclusions. The sworn affidavits submitted with each petition bind the petitioners to present truthful and accurate results. The Agency, however, has initiated a spot sampling and analysis program to verify the representative nature of the data for some percentage of the submitted petitions before final exclusions will be granted.

Finally, before the Hazardous and Solid Waste Amendments of 1984 were enacted, the Agency granted temporary exclusions without first requesting public comment. The Amendments specifically require the Agency to provide notice and an opportunity for comment before granting an exclusion. All of the exclusions proposed today will not become effective unless and until made final. A notice of final exclusion will not be published until all public comments (including those that requested hearings, if any) are addressed.

Petitioners

The proposed exclusions published today involve the following petitioners:

Tricil Environmental Services, Inc.,
Hilliard, Ohio;

Tricil Environmental Services, Inc.,
Muskegon, Michigan;

Tricil Environmental Services, Inc.,
Nashville, Tennessee.

¹ The Agency proposed a similar approach, including a ground water transport model, as part of the proposed toxicity characteristic (see 51 FR 21648, June 13, 1986). The Agency has not completed its evaluation of the comments on this proposal, however. If a regulation is promulgated, using the ground water transport model, Agency will consider revising the delisting analysis.

² Other factors may result in the denial of a petition, such as actual ground water monitoring data or spot check verification data.

I. Tricil Environmental Services, Inc.—Hilliard, Ohio

A. Petition for Exclusion

Tricil Environmental Services, Inc., (Tricil), located in Hilliard, Ohio, operates a waste treatment facility for treatment of multiple metal-bearing waste streams for industrial clients. Tricil has petitioned the Agency to exclude the residue of specific segregated wastes produced by its treatment facility. This sludge is generated from the treatment of EPA Hazardous Wastes Nos. K062—Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332); and F006—Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum. The listed constituents of concern for EPA Hazardous Waste No. K062 are hexavalent chromium and lead. The listed constituents of concern for EPA Hazardous Waste No. F006 are cadmium, hexavalent chromium, nickel, and cyanide (complexed).

Based upon the Agency's review of the petition, Tricil was granted a temporary exclusion on March 18, 1981 (see 46 FR 17197). The Agency's basis for granting the temporary exclusion (at that time) was the low concentration of cadmium, chromium, lead, nickel, and cyanide and the low migration potential of cadmium, chromium (hexavalent), lead, and nickel in the waste.

Since that time, the Hazardous and Solid Waste Amendments (HSWA) of 1984 were enacted. In part, the Amendments require the Agency to consider factors (including additional toxicants) other than those for which the waste was listed, if the Agency has a reasonable basis to believe that such additional factors could cause the waste to be hazardous. (See section 222 of the Amendments, 42 U.S.C. 6921(f).) As a result, the Agency has re-evaluated Tricil's petition to: (1) Determine whether the temporary exclusion should be made final based on the factors for which the waste was originally listed; and (2) determine whether the waste is nonhazardous with respect to factors and toxicants other than those for which the waste was originally listed. Today's notice is the result of the Agency's re-evaluation of Tricil's petition.

In support of their petition, Tricil has submitted a detailed description of its pre-screening process, bench-scale and proposed full-scale treatment process (which has since been installed), and contingency testing plan; total constituent analyses and EP toxicity test results of the treatment residue for cadmium, total chromium, lead, and nickel; and analytical results for total oil and grease, total cyanide, and total sulfide. Tricil also submitted total constituent analyses and EP toxicity test results for arsenic, barium, mercury, selenium, and silver; and results from total constituent analyses for selected Appendix VIII hazardous constituents. As noted above, the Agency requested this information to determine whether toxicants, other than those for which the waste was originally listed, are present in the waste at levels of regulatory concern.³

The Tricil process treats spent pickle liquor with electroplating wastes. The treatment process involves waste combination, neutralization with lime, metal precipitation, equalization, and final dewatering of the sludge by vacuum filtration. Monitored mixing of pickling and electroplating wastes at controlled ratios results in the reduction of hexavalent chromium by the ferrous ions present in the pickling wastes. Subsequent lime addition elevates the pH and converts lead, nickel, chromium, and cadmium to a hydroxide form. The sludge generated has a pH of 8.5–9.7.

Tricil claims that no cyanide-bearing wastes are accepted for treatment at the Hilliard facility. The Tricil pre-screening process includes analytical monitoring of incoming wastes for the presence of free cyanide. No wastes bearing free cyanides over 1 ppm are accepted for treatment. The absence of cyanide was confirmed through analyzing Tricil treatment residue. In addition, analytical monitoring of incoming wastes is used to pre-qualify wastes which, when treated, will generate a residue that meets the Agency's

³ The Agency generally requests that raw materials lists be submitted from single waste stream petitioners to determine whether additional Appendix VIII hazardous constituents may be present in the waste at levels of regulatory concern. For Multiple Waste Treatment Facilities (MWTFs), however, the Agency realizes that hundreds of clients may be involved, therefore making it impossible for raw materials lists to be presented. The Agency has decided to request testing of a minimum of eight samples of waste for all Appendix VIII hazardous constituents reasonably expected to be present in the waste. (At a minimum, testing should be conducted for the priority pollutants.) The MWTF petitioner may choose to limit the number of Appendix VIII hazardous constituents tested by submitting suitable explanations of why specific toxicants are not present in the waste at levels of regulatory concern.

requirements. Tricil claims that its treated wastewater sludge is non-hazardous because the constituents of concern are present either in insignificant concentrations or, if present at significant levels, are essentially in immobile forms. Tricil also believes that the waste is not hazardous for any other reason.

Tricil initially presented analytical data on four samples collected from the vacuum filter. As a result of HSWA requirements, Tricil submitted additional organics sampling data. Nine composite samples of the sludge were collected from the sludge storage pile weekly over a 2-month period. Tricil claims that the treatment facility is operated in a consistent manner, and is monitored to verify compliance with pretreatment standards and delisting requirements. Tricil submitted additional EP toxicity analytical data for cadmium, chromium, nickel, and lead for 8 samples collected over a 2-month period to demonstrate the effectiveness of the bench-scale treatment process. Tricil further claims that all samples collected are representative of any variation of the listed and non-listed constituent concentrations in the waste. In addition to Tricil's sampling efforts, EPA conducted a spot check sampling visit to the facility in May 1983. A composite sample was taken from randomly selected areas of the treated sludge contained in four piles on the concrete storage pallet.

Tricil's total constituent and EP toxicity analyses of the filter press sludge for the listed constituents revealed the maximum concentrations reported in Table 1.

TABLE 1.—MAXIMUM CONCENTRATIONS

Listed constituents	Total constituent analyses (mg/kg)	EP leachate analyses ¹ (mg/l)
Cadmium	11.4	0.049
Chromium (total) ²	2,860.0	.203
Lead	1,880.0	.110
Nickel	684.0	1.198
Cyanide (total)	4.2	³ .21

¹ EP leachate values were taken from Tricil's data submitted of May 16, 1986. This data is representative of segregated F006 and K062 wastes; earlier submittals were for unsegregated wastes which are not representative of the wastes that may be delisted under the contingency plan outlined later in this notice. Tricil claims that one data point for chromium (0.78 ppm) was an outlier. The Agency believes this claim and supports this conclusion using the Dixon Extreme Value Test.

² Hexavalent chromium is listed as the constituent of concern for this waste; however, the concentration of total chromium is low enough to make a determination of hexavalent chromium unnecessary.

³ Leachable cyanide was not measured by Tricil. The Agency estimated the maximum leachable cyanide by assuming a theoretical leaching of 100 percent and twenty-fold dilution (100 grams of solids diluted with 2.0 liters of water) of the maximum total constituent concentration of cyanide.

Tricil's total constituent and EP toxicity analyses of the filter press sludge for the non-listed EP toxic metals

revealed the maximum concentrations reported in Table 2.

TABLE 2.—MAXIMUM CONCENTRATIONS

Non-listed constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Arsenic	52.0	<0.005
Barium	695.0	<.025
Mercury	2.5	.0013
Selenium	3.0	<.005
Silver	2.0	<.002

Note.—< Denotes concentrations below the detection limit.

Tricil also submitted total constituent analyses for Appendix VIII hazardous constituents potentially present in the waste. Tricil analyzed the samples for all Appendix VIII hazardous constituents except those that are reactive or hydrolyze in water and those that require special analytical methods. A more detailed explanation and list of these compounds is available in the public docket. Maximum concentrations for these constituents in the sludge are reported in Table 3. (The maximum concentrations for organics detected are reported in Table 3.)

TABLE 3.—MAXIMUM CONCENTRATIONS OF ORGANICS IDENTIFIED BY TRICIL'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)

Constituents	Total constituent analyses
Acrolein	27.3
Anthracene	1.18
Benzene	.054
Bis(2-ethylhexyl)phthalate	14.2
Butyl benzyl phthalate	303.0
p-Chloro-m-cresol	3.34
m- and p-Cresols	6.888
1,1-Dichloroethane	2.73
Di-n-octyl phthalate	6.09
Fluorene	1.19
Methylene chloride	1.30
Methyl ethyl ketone	1.48
Naphthalene	8.26
Phenanthrene	4.39
Phenol	20.7
2,4,5-TP (Silvex)	.69
Tetrachloroethylene	1.83
Toluene	2.67
1,1,1-Trichloroethane	2.31
Trichloroethylene	.069

The sludge sample collected by EPA from the sludge storage piles was analyzed for total and leachable concentrations of the EP metals, nickel, and cyanide. These concentrations are reported in Table 4.

TABLE 4.—MAXIMUM SLUDGE CONCENTRATIONS

Constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Arsenic	57.0	<0.02
Barium	540.0	.102
Cadmium	9.0	<.025
Chromium	990.0	<.20

TABLE 4.—MAXIMUM SLUDGE CONCENTRATIONS—Continued

Constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Lead	2,900.0	.35
Mercury	2.8	<.001
Nickel	1,110.0	11.0
Selenium	<50.0	<.05
Silver	<4.0	<.02
Cyanide (total)	5.5	<.010
Cyanide (amenable)	5.5	(¹)

¹ Not applicable.

Note.—< Denotes concentrations below the detection limit.

The sludge sample also was analyzed by EPA for the 126 priority pollutants and volatile organics. (See 47 FR 52309, November 19, 1982—Appendix A.) Table 5 summarizes concentrations of Appendix VIII hazardous constituents detected in EPA's samples.

TABLE 5.—MAXIMUM CONCENTRATIONS OF ORGANICS IDENTIFIED BY EPA'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)

Constituents	Total constituent analyses
Bis(2-ethylhexyl)phthalate	11.0
p-Chloro-m-cresol	14.0
1,1-Dichloroethane	2.0
Ethyl benzene	18.0
Fluorene	4.3
Methylene chloride	450
Naphthalene	3.4
N-Nitrosodiphenylamine	3.1
Pentachlorophenol	.63
Phenanthrene	9.4
Pyrene	1.4
Tetrachloroethylene	25
Toluene	160
Trichloroethylene	11

The maximum total oil and grease value reported by Tricil was 0.12 percent. Tricil also provided test data indicating that the sludge is not ignitable, corrosive, or reactive. Tricil, in addition, analyzed the filter press sludge for total sulfides; the maximum reported concentration in the sludge was 27 ppm. Tricil claims to generate a maximum of 9,000 tons of filter press sludge per year.

B. Agency Analysis and Action

Tricil has demonstrated that its waste treatment system, under specified controlled conditions, produces a non-hazardous sludge. The Agency believes that the eight samples collected by Tricil from the sludge storage pile over 2 months and the additional sample collected in EPA's spot check sampling visit were non-biased and adequately represent any variations that may occur in the filter press sludge. The key factors that could vary toxicant concentrations in the residue at MWTFs are the addition of new clients, the variation of client processes occurring from time to time, and variations in raw materials used at generator facilities on the

original client list of a MWTF. This variation in raw materials can be expected when the clients of the MWTF perform as job shops or when the product line changes on a seasonal basis. The Agency does not believe it is possible to represent this variation without sampling that would be considered excessive for a delisting petition demonstration. The Agency, therefore, has requested all MWTF petitioners to submit analytical data collected during a 2-month period on a minimum of eight composite samples.⁴ The Agency believes that the sampling period used by Tricil was long enough to cover any variations in the treatment process.

The Agency has evaluated the mobility of the listed constituents from Tricil's waste using the vertical and horizontal spread (VHS) model.⁵ The VHS model generated compliance point values using the 9,000 ton per year maximum waste generation rate and the maximum reported extract levels reported by Tricil or EPA as input parameters. These predicted compliance point concentrations are reported in Table 6. (When leachate concentrations were below the detection limits, the value of the detection limit was used.) The conditions specified below will require batch testing for oil and grease contents. If content exceeds 1 percent the OWEF would be required. The EP is used here since the oil and grease content did not exceed 1 percent. (See 49 FR 42591, October 23, 1984.) (The sludge sample collected by EPA was not analyzed for total oil and grease content.)

TABLE 6.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Listed constituents	Compliance point concentrations	Regulatory standards
Cadmium	0.008	0.01
Chromium (total)	.032	.05
Lead	.055	.05
Nickel	1.74	.35
Cyanide	.03	.2

¹ Maximum concentrations obtained from EPA's sampling results.

The sludge exhibited cadmium and chromium levels (at the compliance point) below their respective National Interim Primary Drinking Water Standards, and cyanide levels below the

⁴ The Agency's intention is to grant conditional exclusions requiring continuous batch testing where the initial demonstration is successful.

⁵ See 50 FR 7882, Appendix I, February 26, 1985, for a detailed explanation of the development of the VHS model for use in the delisting program. See also the final version of the VHS model, 50 FR 48896, Appendix, November 27, 1985.

U.S. Public Health Service's suggested drinking water standard.⁶ Using the maximum reported lead and nickel concentrations (from the EPA sampling results), the VHS model generated compliance point concentrations that exceeded the National Interim Primary Drinking Water Standard for lead and the Agency's interim health-based standard for nickel.⁷ The Agency notes, however, that these extract levels did not exceed the limits set in Tricil's temporary exclusion. In addition, all other reported lead and nickel concentrations (*i.e.*, nine other segregated waste samples) did not fail the VHS model evaluation. Under the pre-screening controls, the Agency believes that, for the majority of the time, this facility can generate a non-hazardous treatment residue with respect to mobile lead and nickel. Furthermore, under the continuous testing provisions of a conditional exclusion, Tricil will be required to retreat or dispose as hazardous any batch exhibiting lead or nickel extract levels above 0.31 and 2.2 ppm, respectively. (The Agency specifically requests comments on this interpretation.) The waste's maximum sulfide and cyanide contents (27 and 5.5 ppm, respectively) also are low enough not to be of regulatory concern from an air contamination route. That is, the Agency believes these levels to be sufficiently low so as to preclude the generation of hazardous levels of toxic gases.⁸ (The capability of a sulfide- or cyanide-bearing waste to generate hazardous levels of toxic gases, vapors, or fumes is a property of the reactivity characteristic.) These constituents, therefore, are not of regulatory concern.

The Agency also concluded, through using the VHS model, that no other EP toxic metals are present in the sludge at levels of regulatory concern (*i.e.*, none are above any regulatory standard at the compliance point in the VHS model). The compliance point values generated from these extract levels are displayed in Table 7.

TABLE 7.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Non-listed constituents	Compliance point concentrations	Regulatory standards
Arsenic	¹ <0.003	0.05
Barium	1.02	1.0
Mercury	.0002	.002
Selenium	¹ <.008	.01
Silver	¹ <.003	.05

¹ Maximum concentrations from EPA's sampling results.

TABLE 8.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS ^{1 2} (ppm)

Constituents	Predicted leachate concentrations		Compliance point concentrations		Regulatory standards
	(Base)	(95%)	(Base)	(95%)	
Acrolein	1.91	2.76	0.303	0.437	0.5
Anthracene	.0008	.0011	.0001	.0002	.002
Benzene	.0047	.0066	.0007	.0010	.0012
Bis(2-ethylhexyl)phthalate	.009	.012	.0014	.0019	.070
Butyl benzyl phthalate	.15	.188	.024	.029	8.75
p-Chloro-m-cresol ³	.274	.349	.043	.055	.2
m- and p-Cresols	.369	.503	.059	.080	1.8
1,1-Dichloroethane	.103	.136	.016	.022	.00038
Di-n-octyl phthalate	.0044	.006	.0007	.0009	.6
Ethyl benzene ³	.108	.117	.017	.018	3.5
Fluorene ³	.007	.009	.001	.0014	.002
Methylene chloride ³	5.3	7.4	.84	1.17	.056
Methyl ethyl ketone	.286	.426	.045	.067	1.8
Naphthalene	.032	.039	.005	.0062	9.0
N-Nitrosodiphenylamine ³	.018	.022	.0029	.0035	.0071
Pentachlorophenol ³	.005	.0055	.0008	.0009	1.1
Phenanthrene ³	.010	.012	.0015	.002	.002
Phenol	1.18	1.65	.187	.262	3.5
Pyrene ³	.001	.002	.0002	.0003	4.0
2,4,5-TP (Silvex)	.103	.0135	.0016	.0021	.01
Tetrachloroethylene ³	.121	.145	.019	.02	.0007
Toluene ³	.682	.835	.108	.132	10.5
1,1,1-Trichloroethane	.057	.0729	.009	.012	1.2
Trichloroethylene ³	.145	.18	.023	.03	.0032

¹ Combines detectable EPA and Tricil data (*i.e.*, uses the maximum concentrations found either by EPA or Tricil) from Tables 3 and 5.

² Since the OLM has not been finalized, both the baseline equation and the 95 percent confidence interval (applied to the baseline) are calculated here. Once it has been finalized only one of these two versions will apply.

³ Maximum concentration obtained from EPA's sampling results.

⁴ Concentration exceeds standard.

Methylene chloride and trichloroethylene levels for one of eight samples generated compliance point concentrations that exceeded the Agency's regulatory standards. 1,1-Dichloroethane levels for all eight samples generated compliance point concentrations that exceeded the Agency's regulatory standards. Tetrachloroethylene levels for six of nine samples also generated compliance point concentrations that exceeded the Agency's regulatory standard. The Agency believes that since trichloroethylene and methylene chloride were not present at levels of concern for the majority of the samples analyzed, and since Tricil performs stringent pre-screening, the sources of these organic constituents can be traced and eliminated. The Agency has previously granted Tricil a conditional exclusion which required batch testing.

⁵ For a discussion of the Agency's proposed OLM, see 50 FR 48944, Appendix, November 27, 1985. See

The Agency also has evaluated the mobility of organic constituents detected in the sludge by first estimating their leachate concentrations with the Agency's Organic Leachate Model (OLM), and then predicting their compliance point concentrations with the VHS model.⁹ Predicted leachate concentrations, compliance point levels, and regulatory standards are presented in Table 8.

Through this batch testing condition of their exclusion, Tricil has periodically identified "problem" batches. Treatment failures under the temporary exclusion were identified only in terms of cyanide or heavy metals. If process adjustments did not successfully treat the waste, Tricil has successfully eliminated acceptance of "problem" wastes through their pre-screening program. The Agency did not previously specify limitations on trace organics in the temporary exclusion nor did the Agency specify acceptable concentrations of trace organics. Tricil has not had, therefore, the opportunity to adjust its treatment system or eliminate clients to address tetrachloroethylene and 1,1-dichloroethane. Under these circumstances the Agency feels it inappropriate to penalize Tricil's petition effort due to the unacceptable levels of tetrachloroethylene and 1,1-

⁶ Drinking Water Standards, U.S. Public Health Service, Publication 958, 1962 (0.2 ppm).

⁷ See 50 FR 20247 (May 15, 1985) for a complete description of the development of the Agency's interim standard for nickel.

⁸ See Internal Agency Memorandum entitled "Interim Thresholds for Toxic Gas Generation Reactivity" in the RCRA public docket (July 12, 1985).

51 FR 27081, Notice of Data Availability and Request for Comment, July 29, 1986, for a discussion of the revised OLM.

dichloroethane found to be present. Instead the Agency is proposing to add these constituents (as well as other potential organic constituents) to Tricil's conditional batch testing program. The Agency believes if Tricil cannot successfully treat the present level of organic contaminants, that they can eliminate the wastes containing these constituents through their pre-screening operations. The Agency believes it necessary, therefore, to incorporate organics batch testing into the contingency testing program to ensure that organic constituents are not present in the treatment residue at levels of regulatory concern.

The Agency believes that a conditional exclusion can be granted to the Tricil Hilliard facility. The conditions of the exclusion would necessitate testing each batch of treated waste for the EP toxic metals, nickel, cyanide, and a group of organics. The Agency believes this testing requirement is necessary due to the inherent variability encountered by a changing client base, the process variation associated with each of the clients serviced, the high concentrations of toxic constituents in the incoming wastes and in the treatment residue, and the high volumes of treatment residue generated annually by Tricil.

This testing requirement is self-implemented, that is, the results of testing each batch need not be reviewed by state or Federal EPA representatives prior to disposal. The test data must be recorded and kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis.

The Agency, therefore, proposes to grant an exclusion to the Tricil Hilliard facility providing that the following contingency testing program is followed:

(1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP test if the oil and grease content of the waste exceeds one percent) for the EP toxic metals (As, Ba, Cd, Cr, Pb, Se, Ag, and Hg) and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the

waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm¹¹ or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(3) Each batch of waste must be tested for the total content of the organic toxicants listed below. If the total content of any of these constituents exceeds the maximum levels listed below, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. This list of organic constituents is a compilation of organics detected at each of Tricil's three facilities.¹²

Compound	Maximum acceptable level ^{1, 2, 3} (ppm)	
	(Base)	(95%)
Acrolein.....	39.9	22.3
Anthracene.....	72	45
Benzene.....	.106	.060
p-Chloro-m-cresol.....	132.4	92.1
m- and p-Cresols.....	1,030	619
1,1-Dichloroethane.....	.01	.005
Fluorene.....	10.4	7.23
Methylene chloride.....	8.18	5.27
Methyl ethyl ketone.....	313	175
N-Nitrosodiphenylamine.....	11.9	9.1
Phenanthrene.....	13.95	9.57
Phenol.....	1,560	882
Tetrachloroethylene.....	.188	.113
Trichloroethylene.....	.59	.38
Chloroform.....	.012	.0061
1,2-Dichloroethane.....	.0082	.0038
2,4-Dimethylphenol.....	126	87
Vinyl chloride.....	.18	.105
1,2-Diphenylhydrazine.....	1.95	.917

¹ Since the OLM has not been finalized, both versions of the model (i.e., the baseline equation and the 95 percent confidence interval applied to the baseline) are calculated here. Once it has been finalized, only one of these two versions will apply.

² Includes constituents identified at all of Tricil's petitioning facilities.

³ Although the original list of constituents was the same for all of Tricil's petitioning facilities (i.e., constituents detected at each facility are to be tested for at all of the facilities), the actual tabulation in each proposed exclusion may vary due to the facility's specific generation rate and our subsequent 1,000 ppm VHS model limitation.

¹¹ See footnote 8.

¹² The Agency's VHS model was used to calculate the maximum extract levels of the EP toxic metals, nickel, and cyanide corresponding to Tricil's reported maximum annual waste volume. Similarly, the Agency's OLM and VHS models were used to calculate the maximum acceptable levels for organic constituents. These maximum levels are the highest concentrations that can be present in the leachate (for metals and cyanide) and in the waste (for organics) and still pass the VHS model evaluation. When the OLM and VHS model resulted in a compliance point concentration greater than 1,000 ppm, the organic constituent was not included in this testing requirement because the pre-

(4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds listed above, as well as for the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, Appendix A—126 Priority Pollutants) These data must be kept on file at the facility and submitted to the Administrator by certified mail semi-annually. The Agency has required that these additional scans be run on monthly composites to determine whether additional organic constituents should be added to the group of parameters tested on a batch basis due to variation of existing client wastes or variation of the client base. The Agency will review this information and, if needed, will propose to modify or withdraw the exclusion.

The Agency notes that the limits specified above are based on the VHS model and a treatment residue generation rate of greater than 8000 tons per year. Based on total constituent analyses, the pre-screening process, the VHS analyses, and the contingency plan, the Agency believes that the treatment residue generated at Tricil Environmental Services' MWWF located in Hilliard, Ohio, from their wastewater treatment processes, under the conditions specified above, is non-hazardous (for all reasons). The Agency, therefore, proposes to exclude conditionally Tricil's treatment residue from hazardous waste control for the EPA Hazardous Waste Nos. F006 and K062, as described in their petition. (The Agency notes that the exclusion remains in effect unless the waste varies from that originally described in the petition (e.g., the waste is altered as a result of changes in the treatment process).¹³ In addition, Tricil is still obligated to determine whether their treatment residue exhibits any of the characteristics of a hazardous waste.

II. Tricil Environmental Services, Inc.—Nashville, Tennessee

A. Petition for Exclusion

Tricil Environmental Services, Inc., (Tricil), located in Nashville, Tennessee, is involved in the pretreatment of industrial wastes, including a chrome electroplating waste. Tricil has

screening procedures are not expected to allow acceptance of wastes that will result in concentrations at this level.

¹³ The current exclusion applies only to the processes covered by the original demonstration. A facility may file a new petition if it alters its process. The facility must treat its waste as hazardous, however, until a new exclusion is granted.

¹⁰ The Agency is defining "batch" as the volume of waste generated for periodic disposal. That is, if a dumpster of filter cake is generated every 2 days, but is accumulated for a week before disposal, representative samples would be collected from each dumpster of waste and composited for analysis prior to disposal.

petitioned the Agency to exclude its wastewater treatment residue presently listed as EPA Hazardous Waste No. F019—Wastewater treatment sludges from the chemical conversion coating of aluminum. The listed constituents of concern for this waste are hexavalent chromium and cyanide (complexed).

Based upon the Agency's review of the petition, Tricil was granted a temporary exclusion on March 18, 1981 (see 46 FR 17197). The Agency's basis for granting the temporary exclusion (at that time) was the low concentration of cyanide and the low migration potential of chromium in the waste. Since that time, the Hazardous and Solid Waste Amendments (HSWA) of 1984 were enacted. In part, the Amendments require the Agency to consider factors (including additional toxicants) other than those for which the waste was listed, if the Agency has a reasonable basis to believe that such additional factors could cause the waste to be hazardous. (See section 222 of the Amendments, 42 U.S.C. 6921(f).) As a result, the Agency has re-evaluated Tricil's petition to: (1) Determine whether the temporary exclusion should be made final based on the factors for which the waste was originally listed; and (2) determine whether the waste is non-hazardous with respect to factors and toxicants other than those for which the waste was originally listed. Today's notice is the result of the Agency's re-evaluation of Tricil's petition.

In support of their petition, Tricil has submitted a detailed description of its waste screening process and sludge treatment system; total constituent analyses and EP toxicity test results of the residue for total chromium; and analytical results for total cyanide and total sulfide. Tricil also submitted total constituent analyses and EP toxicity test results for arsenic, barium, cadmium, lead, mercury, nickel, selenium, and silver; results of total oil and grease analyses on representative waste samples; and total constituent analyses for Appendix VIII hazardous constituents. As noted above, the Agency requested this information to determine whether toxicants, other than those for which the waste was originally listed, are present in the waste at levels of regulatory concern.¹⁴

Tricil's treatment process uses waste combination, neutralization, metal precipitation, settling and final dewatering of the sludge by vacuum filtration. Tricil claims that no cyanide-bearing wastes are accepted for treatment at the Nashville facility. The

Tricil pre-screening process includes analytical monitoring of incoming wastes for the presence of free cyanide. No wastes bearing free cyanides over 1 ppm are accepted for treatment. The absence of cyanide was confirmed through analyzing Tricil treatment residue. In addition, analytical monitoring of incoming wastes is used to pre-qualify wastes which, when treated, will generate a residue that meets the Agency's requirements.

Tricil claims that its treated wastewater residue is nonhazardous because the constituents of concern are present either in insignificant concentrations or, if present at significant levels, are essentially in immobile forms. Tricil also believes that the waste is not hazardous for any other reason.

Tricil presented analytical data on seven composite samples collected from the filter drum. Each weekly composite sample was composed of 60 grab samples collected from the filter drum. The grab samples were collected at random times over a 1-week period. As a result of HSWA requirements, Tricil submitted additional organics sampling data. Eight composite samples of the residue were collected from the filter drum at random times over a 2-month period. Tricil claims that the treatment facility is operated in a consistent manner, and is monitored to verify compliance with pretreatment standards and delisting requirements. In addition, Tricil claims that the sampling period was long enough to cover any scheduled changes in the wastes received and, therefore, all samples collected are representative of any variation of the listed and non-listed constituent concentrations in the waste. In addition to Tricil's sampling efforts, EPA conducted a spot check sampling visit to the facility in June 29, 1984. A total of six samples were taken of the sludge; two from the filter press and four from the storage dumpsters.

Tricil's total constituent and EP toxicity analyses of the residue for the listed constituents revealed the maximum concentrations reported in Table 1.

TABLE 1.—MAXIMUM CONCENTRATIONS

Listed constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Chromium (total) ¹	8880.0	0.75
Cyanide.....	1.40	0.07

¹ Seven EP toxicity values for total chromium were reported in the March 26, 1986 Tricil data. Tricil claims that three values (14.4, 10.6, and 3.29 ppm) reflect influent wastes which will be diverted from the F019 waste treatment residue proposed for delisting.

² Leachable cyanide was not measured by Tricil. The Agency estimated the maximum leachable cyanide by as-

suming a theoretical leaching of 100 percent and a twenty-fold dilution (100 grams of solids diluted with 2.0 liters of water) of the maximum total constituent concentration of cyanide.

Tricil's total constituent and EP toxicity analyses of the residue for the non-listed EP toxic metals revealed the maximum concentrations reported in Table 2.

TABLE 2.—MAXIMUM CONCENTRATIONS (ppm)

Non-listed constituents	Total constituent analyses	EP leachate analyses
Arsenic.....	4.0	0.2
Barium.....	82.4	.31
Cadmium.....	21.0	.11
Lead.....	480.0	.37
Mercury.....		1.0095
Nickel.....	258.0	4.2
Selenium.....	7.0	.30
Silver.....	<1.0	.007

¹ Six EP toxicity values for mercury were reported in the March 26, 1986 Tricil data. Tricil claims that one value (i.e., 0.2 ppm) is an outlier. The Agency also believes that this value does not reflect the typical mobility of mercury. The Agency's conclusion is supported by the Dixon Extreme Value Test. The Agency, therefore, considers that a maximum mercury level of 0.0095 ppm (the second-highest value) to more accurately reflects mercury mobility from the waste.

Tricil also submitted total constituent analyses for Appendix VIII hazardous constituents potentially present in the waste. Tricil analyzed the samples for all Appendix VIII hazardous constituents except those that are reactive or hydrolyze in water and those that require special analytical methods. A more detailed explanation and list of these compounds is available in the public docket.

Maximum concentrations for these constituents in the residue are reported in Table 3. (The maximum concentrations for organics that were detected are reported in Table 3.)

TABLE 3.—Maximum Concentrations of Organics Identified by Tricil's Analyses of the Filter Press Sludge (ppm)

Constituents	Total constituent analyses
Anthracene.....	8.61
Bis(2-ethyl hexyl)phthalate.....	13
Butyl benzyl phthalate.....	393
Chlorobenzene.....	104
p-Chloro-m-cresol.....	4.73
m- and p-Cresols.....	2.630
Di-n-butyl phthalate.....	6.96
1,1-Dichloroethane.....	2.59
1,2-Dichloroethane.....	0.152
1,2-trans-Dichloroethylene.....	2.43
2,4-Dimethylphenol.....	26.1
Dimethyl phthalate.....	28.614
Methylene chloride.....	2.18
Methyl ethyl ketone.....	2.18
Naphthalene.....	21.7
N-Nitrosodimethylamine.....	363
Phenanthrene.....	105
Phenol.....	232
2,4,5-TP (Silvex).....	1.3
Tetrachloroethylene.....	1.99
Toluene.....	2.53
1,1,1-Trichloroethane.....	.030
Trichloroethylene.....	6.12
Vinyl chloride.....	.223

¹⁴ See footnote 3.

The sludge samples collected by EPA from the filter press and dumpster were analyzed for total and leachable concentrations of the EP metals, nickel, and cyanide. These concentrations are reported in Table 4.

TABLE 4.—MAXIMUM SLUDGE CONCENTRATIONS (ppm)

Constituents	Total constituent analyses	EP leachate analyses
Arsenic	11	<0.02
Barium	130	<.5
Cadmium	30	.221
Chromium	16,200	<.20
Lead	1,300	.147
Mercury	.33	<.001
Nickel	680	1.5
Selenium	9.9	<.02
Silver	1.2	<.02
Cyanide (total)	5.2	1.26
Cyanide (amenable)	5.2	(*)

¹ Leachable cyanide was not measured by EPA. The Agency estimated the maximum leachable cyanide by assuming a theoretical leaching of 100 percent and a twenty-fold dilution (100 grams of solids diluted with 2.0 liters of water) of the maximum total constituent concentration of cyanide.

² Not applicable.

Note.—<Denotes concentrations below the detection limit.

The sludge samples also were analyzed by EPA for the 126 priority pollutants and volatile organics. (See 47 FR 52309, November 19, 1982—Appendix A.) Table 5 summarizes concentrations of Appendix VIII hazardous constituents detected in EPA's samples.

TABLE 5.—MAXIMUM CONCENTRATIONS OF ORGANICS IDENTIFIED BY EPA'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)

Constituents	Total constituent analyses
Anthracene	3.6
Bis(2-ethyl hexyl)phthalate	46.0
p-Chloro-m-cresol	4.3
Di-n-octyl-phthalate	9.3
Ethyl benzene	4.5
Fluorene	3.2
Phenanthrene	5.5
Phenol	17.0
Tetrachloroethylene	27.0
Toluene	15.0
Trichloroethylene	2.1

The maximum total oil and grease value reported by Tricil was 0.4 percent. EPA detected total oil and grease levels for the sample of 8.32 percent. Tricil also provided test data indicating that the residue is not ignitable, corrosive, or reactive. In addition, Tricil analyzed the residue for total sulfides; the maximum concentration reported was 17 ppm. Tricil claims to generate a maximum of 700 tons of residue per year from F019 segregated waste.

B. Agency Analysis and Action

Tricil has demonstrated that its waste treatment system produces a non-hazardous sludge. The Agency believes that the eight samples collected by Tricil

from the filter drum over a 2-month period were non-biased and adequately represent any variations that may occur in the residue.¹⁵ The key factors that could vary toxicant concentrations in the residue at MWTFs is the addition of new clients, the variation of client processes occurring from time to time, and variations in raw materials used at generator facilities on the original client list of a MWTF. Variations in raw materials can be expected when the clients of the MWTF perform as job shops or when the product line changes on a seasonal basis. The Agency does not believe it is possible to represent this variation without sampling that would be considered excessive for a delisting petition demonstration. The Agency, therefore, has requested all MWTF petitioners to submit analytical data collected during a 2-month period on a minimum of eight composite samples.¹⁶ The Agency believes that the sampling period used by Tricil was long enough to cover any variations in the treatment process.

The Agency has evaluated the mobility of the listed constituents from Tricil's waste using the vertical and horizontal spread (VHS) model.¹⁷ The VHS model generated compliance point values using the 700 tons per year maximum waste generation rate and the maximum extract levels reported by Tricil or EPA as input parameters. These predicted compliance point concentrations are reported in Table 6. (When leachate concentrations were below the detection limits, the value of the detection limit was used.) The Agency notes that since the samples tested by Tricil did not exhibit oil and grease levels above one percent, the EP data is acceptable. EPA's sample, however, exceeded one percent oil and grease content. (See 49 FR 42591, October 23, 1984.) The Agency believes that this variability will require verification in the conditional batch testing program described below.

TABLE 6.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Listed constituents	Compliance point concentrations	Regulatory standards
Chromium (total)	0.034	0.05
Cyanide	1.012	.2

¹ Maximum concentration obtained from EPA's sampling results.

¹⁵ The authoritative grab samples collected by EPA confirm that the samples collected by Tricil are representative.

¹⁶ The Agency's intention is to grant conditional exclusions requiring continuous batch testing where the initial demonstration is successful.

¹⁷ See footnote 5.

The residue exhibited chromium levels (at the compliance point) below the National Interim Primary Drinking Water Standard; and cyanide levels below the U.S. Public Health Service's suggested drinking water standard.¹⁸ The waste's maximum sulfide and cyanide contents (17 and 5.2 ppm, respectively) also are low enough not to be of regulatory concern from an air contamination route. That is, the Agency believes these levels to be sufficiently low so as to preclude the generation of hazardous levels of toxic gases.¹⁹ (The capability of a sulfide- or cyanide-bearing waste to generate hazardous levels of toxic gases, vapors, or fumes is a property of the reactive characteristic.) These constituents are, therefore, not of regulatory concern.

The Agency also concluded, through using the VHS model, that no other EP toxic metals, except selenium, are present in the residue at levels of regulatory concern (*i.e.*, none are above any regulatory standard at the compliance point in the VHS model). The compliance point values generated from these extract levels are displayed in Table 7.

TABLE 7.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Nonlisted constituents	Compliance point concentrations	Regulatory standards
Arsenic	0.009	0.05
Barium	¹ <.023	1.0
Cadmium	1.0099	.01
Lead	.017	.05
Mercury	.0004	.002
Nickel	.19	.35
Selenium	² 0.13	.01
Silver	1.0009	.05

¹ Maximum concentrations obtained from EPA's sampling results.

² Exceeds regulatory standard.

Using the maximum reported selenium concentration, the VHS model generated a compliance point concentration that exceeded the National Interim Primary Drinking Water Standard for selenium. (The Agency notes that only the maximum selenium value reported failed the VHS model evaluation. Extract values reported for 13 other samples generated compliance point concentrations well below the drinking water standard.) Under the pre-screening controls, the Agency believes that, for the majority of the time, this facility can generate a non-hazardous treatment residue with respect to mobile selenium. Furthermore, under the continuous testing provisions of a conditional exclusion, Tricil will be

¹⁸ See footnote 6.

¹⁹ See footnote 8.

required to retreat or dispose as hazardous any batch exhibiting selenium levels above 0.22 ppm. Selenium values, therefore, are also not of regulatory concern. (The Agency specifically requests comments on this interpretation.)

The Agency also has evaluated the mobility of organic constituents detected

in the sludge by first estimating their leachate concentrations with the Agency's organic leachate model (OLM), and then predicting their compliance point concentrations using the VHS model.²⁰ Predicted leachate concentrations, compliance point levels, and regulatory standards are presented in Table 8.

TABLE 8.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS^{1 2} (ppm)

Constituents	Predicted leachate concentrations		Compliance point concentrations		Regulatory standards
	(Base)	(95%)	(Base)	(95%)	
Anthracene	0.003	0.004	0.0001	0.0002	0.0002
Bis(2-ethyl hexyl) phthalate ¹	.02	.026	.0009	.0012	.70
Butyl benzyl phthalate	1.12	1.40	.051	.063	8.75
Chlorobenzene	.004	.006	.0002	.0003	1.1
p-Chloro-m-cresol	.13	.169	.0059	.0076	.2
m- and p-Cresols	.19	.26	.0086	.012	1.8
Di-n-butyl phthalate	.020	.025	.0009	.0011	3.5
1,1-Dichloroethane	.10	.13	.0045	.0059	.00038
1,2-Dichloroethane	.017	.024	*.0008	*.0011	.0004
1,2-trans-Dichloro-ethylene	.10	.13	.0045	.006	.35
2,4-Dimethyl phenol	.21	.25	.0095	.011	.02
Dimethyl phthalate	.46	.59	.021	.027	350
Di-n-octyl phthalate ²	.0059	.0079	.0003	.0004	.6
Ethyl benzene ³	.018	.047	.0008	.0021	3.5
Fluorene ⁴	.006	.007	.0003	.0003	.002
Methylene chloride	.14	.19	.006	.0086	.056
Methyl ethyl ketone	.378	.556	.017	.025	1.8
Naphthalene	.061	.074	.003	.003	9.0
N-Nitrosodimethylamine	.0042	.0056	.00019	.0003	.0071
Phenanthrene	.049	.062	*.0022	*.0028	.002
Phenol	6.02	6.65	.27	.39	3.5
2,4,5-TP (Silvex)	.016	.02	.0007	.0009	.01
Tetrachloroethylene ²	.127	.15	*.006	*.0068	.0007
Toluene ⁵	.14	.17	.006	.0077	10.5
1,1,1-Trichloroethane	.003	.0043	.0001	.0002	1.2
Trichloroethylene	.098	.12	*.004	*.0054	.0032
Vinyl chloride	.069	.075	*.003	*.0034	.002

¹ Since the OLM has not been finalized, both versions of the model, baseline equation and 95 percent confidence interval (applied to the baseline) are calculated here. Once the OLM has been finalized only one of these two versions will apply.

² Combines detectable EPA and Tricil data (i.e., uses maximum concentrations found either by EPA or Tricil, from Tables 3 and 5).

³ Maximum concentration obtained from EPA's sampling results.

⁴ Value exceeds regulatory standard.

The 1,2-dichloroethane level for 1 of 15 samples generated a compliance point concentration that exceeded the Agency's regulatory standard. Tetrachloroethylene levels for 8 of 16 samples generated compliance point concentrations that exceeded the Agency's regulatory standard. Phenanthrene levels for 1 of 14 samples generated compliance point concentrations that exceeded the Agency's regulatory standard. Trichloroethylene levels for 1 of 16 samples also generated compliance point concentrations that exceeded the Agency's regulatory standard. The maximum vinyl chloride value also generated a compliance point concentration that exceeded the Agency's regulatory standard.

The Agency believes that since 1,2-dichloroethane, trichloroethylene, and vinyl chloride were not present at levels of concern for the majority of the samples analyzed, and since Tricil performs stringent pre-screening, the sources of 1,2-dichloroethane, trichloroethylene, and vinyl chloride can

be traced and eliminated. The Agency has previously granted Tricil a conditional temporary exclusion which required batch testing. Through this batch testing condition of their exclusion Tricil has periodically identified "problem" batches. Treatment failures under the temporary exclusion were identified only in terms of cyanide or heavy metals. If process adjustments did not successfully treat the waste, Tricil has successfully eliminated acceptance of "problem" wastes through their pre-screening program. The Agency did not previously specify any limitations on trace organics in the temporary exclusion nor did the Agency specify acceptable concentrations of trace organics. Tricil has not had the opportunity, therefore, to adjust its treatment system or eliminate clients to address tetrachloroethylene. Under these circumstances the Agency feels it inappropriate to penalize Tricil's petition effort due to the unacceptable levels of tetrachloroethylene found to be

²⁰ See footnote 9.

present. Instead the Agency is proposing to add this constituent (as well as other potential organic constituents) to Tricil's conditional batch testing program. The Agency believes that if Tricil cannot successfully treat the present level of organic contaminants, that they can eliminate the wastes containing these constituents through their pre-screening operations. The Agency, therefore, believes it is necessary to incorporate organics batch testing into the contingency testing program to ensure that organic constituents are not present in the treatment residue at levels of regulatory concern.

The Agency believes that a conditional exclusion can be granted to the Tricil Nashville facility. The conditions of the exclusion would necessitate testing each batch of treated waste for the EP toxic metals, nickel, and a group of organics. The Agency believes this testing requirement is necessary due to the inherent variability encountered by a changing client base, the process variation associated with each of the clients serviced, and the high concentrations of toxic constituents in the incoming wastes and in the treatment residue.

This testing requirement is self-implemented. That is, the results of testing each batch need not be reviewed by state or Federal EPA representatives prior to disposal. The test data must be recorded and kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis.

The Agency, therefore, proposes to grant an exclusion to the Tricil Nashville facility, providing that the following contingency testing program is followed:

(1) Each batch²¹ of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP test if the oil and grease content of the waste exceeds one percent) for the EP toxic metals (As, Ba, Cd, Cr, Pb, Se, Ag, and Hg) and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 1.1 ppm; barium levels exceed 22.2 ppm; cadmium and selenium levels exceed 0.22 ppm; mercury levels exceed 0.044 ppm; or nickel levels exceed 7.8 ppm, the waste will be retreated or managed and

²¹ The Agency is defining "batch" as the volume of waste generated for periodic disposal. That is, if a dumpster of filter cake is generated every 2 days, but is accumulated for a week before disposal, representative samples would be collected from each dumpster and composited for analysis prior to disposal.

disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm²² or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 4.4 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(3) Each batch of waste must be tested for the total content of the organic toxicants listed below. If the total content of any of these constituents exceeds the maximum levels listed below, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. This list of organic constituents is a compilation of organics detected at each of Tricil's three facilities.²³

Compound	Maximum acceptable level ^{1, 2, 3} (ppm)	
	(Base)	(95%)
Acrolein	254	145
Anthracene	465	267
Benzene	.67	.43
p-Chloro-m-cresol	847	560
1,1-Dichloroethane	.067	.036
Fluorene	86.6	48.24
Methylene chloride	52.2	34.1
n-Nitrosodiphenylamine	76.1	59.6
Phenanthrene	89.4	63.4
Tetrachloroethylene	1.2	.81
Trichloroethylene	3.78	2.63
Chloroform	.081	.044
1,2-Dichloroethane	.082	.044
1,2-trans-Dichloroethylene	1,474	934
2,4-Dimethylphenol	79.7	60
Vinyl chloride	1.15	.75
1,2-Diphenyl hydrazine	12.51	6.24

¹ Since the OLM has not been finalized, both versions of the model, (i.e., the baseline equation and the 95 percent confidence interval applied to the baseline) are calculated here. Once finalized, only one of these two versions apply.

² Includes constituents identified at all of Tricil's petitioning facilities.

³ Although the original list of constituents was the same for all of Tricil's petitioning facilities (i.e., constituents detected at each facility are to be tested for at all of the facilities) the actual tabulation in each proposed exclusion may vary due to the facility's specific generation rate and our subsequent 1000 ppm VHS limitation.

(4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds listed above, as well as for the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, Appendix A—126 Priority Pollutants.) These data must be kept on file at the facility, and submitted to the Administrator by certified mail semi-annually. The Agency has required that these additional scans be run on monthly composite samples to

determine if additional organic constituents should be added to the group of parameters tested on a batch basis due to variation of existing client wastes or variation of the client base. The Agency will review this information and, if needed, will propose to modify or withdraw the exclusion.

(5) The Agency notes that the limits specified above are based on the VHS model and a maximum treatment residue generation rate of 700 tons per year. These limits and the exclusion do not apply to generation rates exceeding 700 tons per year. If Tricil anticipates increasing this generation rate, a new petition would need to be filed. Based on the VHS analyses, total constituent analyses, the pre-screening process, and the contingency plan, the Agency believes that the treatment residue generated at Tricil Environmental Services' MWTW located in Nashville, Tennessee, from their wastewater treatment processes, under the conditions specified above, is non-hazardous (for all reasons). The Agency, therefore, proposes to exclude conditionally Tricil's treatment residue from hazardous waste control for the EPA Hazardous Waste No. F019, as described in their petition. (The Agency notes that the exclusion remains in effect unless the waste varies from that originally described in the petition (e.g., the waste is altered as a result of changes in the treatment process).²⁴ In addition, Tricil is still obligated to determine whether their treatment residue exhibits any of the characteristics of a hazardous waste.)

III. Tricil Environmental Services, Inc.—Muskegon, Michigan

A. Petition for Exclusion

Tricil Environmental Services, Inc. (Tricil), located in Muskegon, Michigan, operates a waste treatment facility for treatment of multiple metal-bearing waste streams for industrial clients. Tricil has petitioned the Agency to exclude the residue produced by its treatment facility. This sludge is generated from the treatment of EPA Hazardous Wastes Nos. K062—Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332); and F006—Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/

stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum. The listed constituents of concern for EPA Hazardous Waste No. K062 are chromium and lead. The listed constituents of concern for EPA Hazardous Waste No. F006 are cadmium, chromium, nickel, and cyanide (complexed).

Based upon the Agency's review of the petition, Tricil was granted a temporary exclusion on March 18, 1981 (see 46 FR 17197). The Agency's basis for granting the temporary exclusion (at that time) was the low concentration of cadmium, chromium, lead, nickel, and cyanide and the low migration potential of cadmium, chromium (hexavalent), lead, and nickel in the waste. Since that time, the Hazardous and Solid Waste Amendments (HSWA) of 1984 were enacted. In part, the Amendments require the Agency to consider factors (including additional toxicants) other than those for which the waste was listed, if the Agency has a reasonable basis to believe that such additional factors could cause the waste to be hazardous. (See section 222 of the Amendments, 42 U.S.C. 6921(f).) As a result, the Agency has re-evaluated Tricil's petition to: (1) Determine whether the temporary exclusion should be made final based on the factors for which the waste was originally listed; and (2) determine whether the waste is non-hazardous with respect to factors and toxicants other than those for which the waste was originally listed. Today's notice is the result of the Agency's re-evaluation of Tricil's petition.

In support of their petition, Tricil has submitted a detailed description of its pre-screening process, treatment process, and contingency testing plan; total constituent analyses and EP toxicity test results of the treatment residue for cadmium, total chromium, lead, and nickel; and analytical results for total cyanide and total sulfide. Tricil also submitted total constituent analyses and EP toxicity test results for arsenic, barium, mercury, selenium, and silver; results of total oil and grease analyses on representative waste samples; and results of total constituent analyses for Appendix VIII hazardous constituents. As noted above, the Agency requested this information to determine whether toxicants, other than those for which the waste was originally listed, are present in the waste at levels of regulatory concern.²⁵

²² See footnote 8.

²³ See footnote 12.

²⁴ See footnote 13.

²⁵ See footnote 3.

The Tricil process treats spent pickle liquor with electroplating wastes, waste acids, and oils. The treatment process involves waste combination, neutralization, and metal precipitation; a 5-day settling/equalization period; and final dewatering of the sludge by vacuum filtration. Monitored mixing of pickling and electroplating wastes at controlled ratios results in the reduction of hexavalent chromium by the iron present in the pickling wastes. Waste combination also neutralizes acidic wastes and subsequent lime addition elevates the pH and converts lead, nickel, chromium, and cadmium to a hydroxide form. The sludge generated has a pH of 8.5-9.7, thus confirming the acid neutralization.

Tricil claims that no cyanide-bearing wastes are accepted for treatment at the Muskegon facility. The Tricil pre-screening process includes analytical monitoring of incoming wastes for the presence of free cyanide. No wastes bearing free cyanides over 1 ppm are accepted for treatment. In addition, analytical monitoring of incoming wastes is used to pre-qualify wastes which, when treated, will generate a residue that meets the Agency's requirements. Tricil claims that its treated wastewater sludge is non-hazardous because the constituents of concern are present either in insignificant concentrations or, if present at significant levels, are essentially in immobile forms. Tricil also believes that the waste is not hazardous for any other reason.

Tricil initially presented analytical data on one composite sample collected from the vacuum filter. The composite sample was composed of five grab samples collected from the vacuum filter; the grab samples were collected at random times over 5 days of operation. As a result of HSWA requirements, Tricil submitted additional organics sampling data. Nine composite samples of the sludge were collected from the sludge storage pile weekly over a 2-month period. Tricil claims that the treatment facility is operated in a consistent manner, and is monitored to verify compliance with pretreatment standards and delisting requirements. Tricil further claims that all samples collected are representative of any variation of the listed and non-listed constituent concentrations in the waste. In addition to Tricil's sampling efforts, EPA conducted a spot check sampling visit to the facility in April 1984. Three composite samples were taken of the sludge contained in the filter press storage shed, and two composite

samples were taken of the sludge in a filtered sludge pile.

Tricil's total constituent and EP toxicity analyses of the filter press sludge for the listed constituents revealed the maximum concentrations reported in Table 1.

TABLE 1.—MAXIMUM CONCENTRATIONS

Listed constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Cadmium.....	1.4	0.047
Chromium (total) ¹	21,500	.29
Lead.....	15,300	.6
Nickel.....	9,340	5.5
Cyanide (total).....	19	.95

¹ Hexavalent chromium is listed as the constituent of concern for this waste; however, the concentration of total chromium is low enough to make a determination of hexavalent chromium unnecessary.

² Leachable cyanide was not measured by Tricil. The Agency estimated the maximum leachable cyanide by assuming a theoretical leaching of 100 percent and a twenty-fold dilution (100 grams of solids diluted with 2.0 liters of water) of the maximum total constituent concentration of cyanide.

Tricil's total constituent and EP toxicity analyses of the filter press sludge for the non-listed EP toxic metals revealed the maximum concentrations reported in Table 2.

TABLE 2.—MAXIMUM CONCENTRATIONS

Nonlisted constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Arsenic.....	<5.0	0.06
Barium.....	1,240.0	.65
Mercury.....	0.4	.003
Selenium.....	4.0	.005
Silver.....	22.0	.032

Tricil also submitted total constituent analyses for Appendix VIII hazardous constituents potentially present in the waste. Tricil analyzed the samples for all Appendix VIII hazardous constituents except those that are reactive or hydrolyze in water and those that require special analytical methods. A more detailed explanation and list of these compounds is available in the public docket. Maximum concentrations for those organics that were detected are reported in Table 3.

TABLE 3.—MAXIMUM CONCENTRATIONS OF ORGANICS IDENTIFIED BY TRICIL'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)

Constituents	Total constituent analyses
Anthracene.....	0.263
Benzyl chloride.....	35.4
Bis(2-ethylhexyl)phthalate.....	46.5
Butyl benzyl phthalate.....	10.1
Carbon disulfide.....	.094
p-Chloro-m-cresol.....	1.08
m- and p-Cresols.....	.715
o-Cresol.....	.43
2,4-D.....	1.0
1,1-Dichloroethane.....	.567
1,2-trans-Dichloroethylene.....	.025

TABLE 3.—MAXIMUM CONCENTRATIONS OF ORGANICS IDENTIFIED BY TRICIL'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)—Continued

Constituents	Total constituent analyses
2,4-Dimethyl phenol.....	1.17
Fluorene.....	1.017
Methylene chloride.....	1.38
Methyl ethyl ketone.....	2.24
Naphthalene.....	5.0
Pentachlorophenol.....	1.77
Phenanthrene.....	5.28
Phenol.....	14.0
2,4,5-TP (Silver).....	2.0
Tetrachloroethylene.....	.243
Toluene.....	6.57
1,2,4-Trichlorobenzene.....	.545
1,1,1-Trichloroethane.....	.474
Trichloroethylene.....	.844

The sludge samples collected by EPA were analyzed for total and leachable concentrations of the EP metals, nickel, and cyanide. These concentrations are reported in Table 4.

TABLE 4.—MAXIMUM SLUDGE CONCENTRATION

Constituents	Total constituent analyses (mg/kg)	EP leachate analyses (mg/l)
Arsenic.....	22	<0.02
Barium.....	14	<.5
Cadmium.....	13	.052
Chromium.....	12,000	.31
Lead.....	640	.12
Mercury.....	0.13	<.001
Nickel.....	2,300	.34
Selenium.....	<7	<.02
Silver.....	<1.5	.064
Cyanide (total).....	90	(²)

< Denotes concentrations below the detection limit.

¹ This value represents the second highest reported concentration. The Agency has concluded, using the Dixon Extreme Value Test, that the maximum reported concentration is an outlier. The Agency notes that even the maximum chromium value of 1.0 did not exceed the limits of the temporary exclusion.

² Not tested.

The sludge samples also were analyzed by EPA for the 126 priority pollutants and volatile organics. (See 47 FR 52309, November 19, 1982—Appendix A.) Table 5 summarizes concentrations of Appendix VIII hazardous constituents detected in EPA's samples.

TABLE 5.—MAXIMUM CONCENTRATIONS OF ORGANICS DETECTED IN EPA'S ANALYSES OF THE FILTER PRESS SLUDGE (ppm)

Constituents	Total constituent analyses
Bis(2-ethylhexyl)phthalate.....	1.90
Di-n-butyl phthalate.....	1.5
Di-n-octyl phthalate.....	1.2
1,2-Diphenyl hydrazine.....	1.3
Ethyl benzene.....	5.9
Fluorene.....	.205
Naphthalene.....	1.2
N-Nitrosodiphenylamine.....	.88
Phenanthrene.....	2.5
Phenol.....	2.040
Tetrachloroethylene.....	39.0
Toluene.....	4.5
Trichloroethylene.....	.65

The maximum total oil and grease value reported by Tricil was 1.7 percent. EPA detected a maximum total oil and grease level equal to 6 percent. Tricil also provided test data indicating that the sludge is not ignitable, corrosive, or reactive. Tricil, in addition, analyzed the filter press sludge for total sulfides; the maximum reported concentration in the sludge was 26 ppm. Tricil claims to generate 12,000 tons of filter press sludge per year.

B. Agency Analysis and Action

Tricil has demonstrated that its waste treatment system, under specified controlled conditions, produces a non-hazardous sludge. The Agency believes that the nine samples collected by Tricil from the sludge storage pile over 8 weeks and the additional samples collected in EPA's spot check sampling visit were non-biased and adequately represent any variations that may occur in the filter press sludge. The key factors that could vary toxicant concentrations in the residue at MWTs are the addition of new clients, the variation of client processes occurring from time to time, and variations in raw materials used at generator facilities on the original client list of a MWT. Variations in raw materials can be expected when the clients of the MWT perform as job shops or when their products line change on a seasonal basis. The Agency does not believe it is possible to represent this variation without sampling that would be considered excessive for a delisting petition demonstration. The Agency, therefore, has requested all MWT petitioners to submit analytical data collected during a 2-month period on a minimum of eight composite samples.²⁶ The Agency believes that the sampling period used by Tricil was long enough to cover any variations in the treatment process.

The Agency has evaluated the mobility of the listed constituents from Tricil's waste using the vertical and horizontal spread (VHS) model.²⁷ The VHS model generated compliance point values using the 12,000 ton per year maximum waste generation rate and the maximum reported extract levels reported by Tricil or EPA as input

parameters. These predicted compliance point concentrations are reported in Table 6. (When leachate concentrations were below the detection limits, the value of the detection limit was used.) The Agency has used the EP data in its VHS model analyses, however, since the oil and grease content of Tricil's waste exceed one percent, the oily waste EP (OWEP) should have been run. (See 49 FR 42591, October 23, 1984.) Tricil did not furnish OWEP data since the conditions of their temporary exclusion only require that the EP test be run. The Agency has, as noted below, conditioned Tricil's exclusion to require each batch of waste to be tested for oil and grease content. If the oil and grease content exceeds one percent the OWEP must be run instead of the EP to determine if the residue meets the conditions of the exclusion.

TABLE 6.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Listed constituents	Compliance point concentrations	Regulatory standards
Cadmium	¹ 0.0082	0.01
Chromium (total)	1.049	.05
Lead	² .095	.05
Nickel	² .87	.35
Cyanide15	.2

¹ Maximum concentration obtained from EPA's sampling results.

² Value exceeds regulatory standard. (The extract level generating this compliance point concentration, however, is well below the maximum acceptable limit in Tricil's temporary exclusion.)

The sludge exhibited cadmium and chromium levels (at the compliance point) below the National Interim Primary Drinking Water Standards, and cyanide levels below the U.S. Public Health Service's suggested drinking water standard.²⁸ The maximum reported concentration for lead (*i.e.*, one of fifteen samples) generated a compliance point concentration that exceeded the National Interim Primary Drinking Water Standard for lead. Nickel levels for two of fourteen samples generated compliance point concentrations that exceeded the Agency's interim health-based standard for nickel.²⁹ Under the pre-screening controls, the Agency believes that, for the majority of the time, this facility can generate a non-hazardous treatment

residue with respect to mobile lead and nickel. Furthermore, under the continuous testing provisions of a conditional exclusion, Tricil will be required to retreat or dispose as hazardous any batch exhibiting lead or nickel extract levels above 0.31 and 2.2 ppm, respectively.³⁰ (The Agency specifically requests comments on this interpretation.)

The waste's maximum sulfide and cyanide contents (26 and 90 ppm, respectively) also are low enough not to be of regulatory concern from an air contamination route. That is, the Agency believes these levels to be sufficiently low so as to preclude the generation of hazardous levels of toxic gases.³¹ (The capability of a sulfide- or cyanide-bearing waste to generate hazardous levels of toxic gases, vapors, or fumes is a property of the reactivity characteristic.) These constituents, therefore, are not of regulatory concern.

The Agency also concluded, through using the VHS model, that no other EP toxic metals are present in the sludge at levels of regulatory concern (*i.e.*, none are above any regulatory standard at the compliance point in the VHS model). The compliance point values generated from these extract levels are displayed in Table 7.

TABLE 7.—VHS MODEL: CALCULATED COMPLIANCE POINT CONCENTRATIONS (ppm)

Nonlisted constituents	Compliance point concentrations	Regulatory standards
Arsenic	0.0095	0.05
Barium1	1.0
Mercury0005	.002
Selenium	¹ < .003	.01
Silver03	.05

¹ Maximum concentrations obtained from EPA's sampling results.

The Agency also has evaluated the mobility of organic constituents detected in the sludge by first estimating their leachate concentrations with the Agency's organic leachate model (OLM), and then predicting their compliance point concentrations with the VHS model.³² Predicted leachate concentrations, compliance point levels, and regulatory standards are presented in Table 8.

²⁶ The Agency's intention is to grant conditional exclusions requiring continuous batch testing where the initial demonstration is successful.

²⁷ See footnote 5.

²⁸ See footnote 6.

²⁹ See footnote 7.

³⁰ It should be noted that these extract levels were below the maximum acceptable limits set in Tricil's temporary exclusion.

³¹ See footnote 8.

³² See footnote 9.

TABLE 8.—VHS MODEL: CALCULATED COMPLIANCE POINT ^{1 2} CONCENTRATIONS (ppm)

Constituents	Predicted leachate concentrations		Compliance point concentrations		Regulatory standards
	(Base)	(95%)	(Base)	(95%)	
Anthracene	0.0003	0.0004	0.00005	0.00006	0.002
Benzyl chloride	.50	.61	.079	.097	.2
Bis(2-ethylhexyl)phthalate	.020	.026	.0032	.0041	.7
Butyl benzyl phthalate	.035	.043	.0055	.0068	8.75
Carbon disulfide	.0083	.012	.0013	.0019	3.5
p-Chloro-m-cresol	.048	.064	.0076	.010	.2
Cresols	.108	.152	.017	.024	1.8
2,4-D	.027	.035	.004	.006	.4
Di-n-butyl phthalate ³	.0071	.0092	.0011	.0014	3.5
1,1-Dichloroethane	.042	.058	*.0067	*.0092	.00038
1,2-trans-Dichloroethylene	.0042	.0065	.0007	.001	.35
2,4-Dimethyl phenol	.059	.079	.009	.012	.02
Di-n-octyl phthalate ³	.095	.115	.015	.018	.6
1,2-Diphenyl hydrazine ³	.041	.053	*.0065	*.0084	.00004
Ethyl benzene ³	.046	.056	.007	.009	3.5
Fluorene	.0026	.0035	.0004	.0006	.002
Methylene chloride	.105	.143	.017	.023	.056
Methyl ethyl ketone	.384	.567	.061	.090	1.8
Naphthalene	.023	.028	.0036	.0044	9.0
N-Nitrosodiphenylamine ³	.007	.0099	.0012	.0016	.0071
Pentachlorophenol	.0082	.010	.0013	.0016	1.1
Phenanthrene	.0065	.0085	.001	.0013	.002
Phenol	.902	1.27	.143	.201	3.5
2,4,5-TP (Silvex)	.0210	.026	.003	.004	.01
Tetrachloroethylene ³	.16	.185	*.026	*.029	.0007
Toluene	.079	.097	.012	.015	10.5
1,2,4-Trichlorobenzene	.0050	.0066	.0008	.0011	.7
1,1,1-Trichloroethane	.029	.040	.0046	.0064	1.2
Trichloroethylene	.026	.034	*.0041	*.0054	.0032

¹ Since the OLM has not been finalized, both versions of the model baseline equation and 95 percent confidence interval (applied to the baseline) are calculated here. Once finalized, only one of these two versions will apply.

² Combines detectable EPA and Tricil data (i.e., uses the maximum concentrations found either by EPA or Tricil, from Tables 3 and 5).

³ Maximum concentration obtained from EPA's sampling results.

* Exceeds regulatory standard.

1,2-Diphenyl hydrazine was detected in one sample; the waste concentration generated a compliance point concentration that exceeded the Agency's regulatory standard. Tetrachloroethylene levels for ten of fourteen samples also generated compliance point concentrations that exceeded the regulatory standard. Three of fourteen (four for the 95% version of the OLM model) samples failed the VHS model evaluation for trichloroethylene levels. All nine samples failed the VHS model evaluation for 1,1-dichloroethane levels. The Agency believes that since 1,2-diphenyl hydrazine and trichloroethylene were not present at levels of concern for the majority of the samples analyzed, and since Tricil performs stringent pre-screening, the sources of these organic constituents can be traced and eliminated.

The Agency has previously granted Tricil a conditional exclusion which required batch testing. Through this batch testing condition of their exclusion Tricil has periodically identified "problem" batches. Treatment failures under the temporary exclusion were identified only in terms of cyanide or heavy metals. If process adjustments did not successfully treat the waste, Tricil has successfully eliminated acceptance of "problem" wastes through their prescreening program. The Agency did not previously specify any limitations on trace organics in the temporary exclusion nor did the Agency

specify acceptable concentrations of trace organics. Tricil has not, therefore, had the opportunity to adjust its treatment system or eliminate clients to address 1,1-dichloroethane and tetrachloroethylene. Under these circumstances the Agency feels it inappropriate to penalize Tricil's petition effort due to the unacceptable levels of 1,1-dichloroethane and tetrachloroethylene found to be present. Instead the Agency is proposing to add these constituents (as well as other potential organic constituents) to Tricil's conditional batch testing program. The Agency believes that if Tricil cannot successfully treat the present level of organic contaminants, that they can eliminate the wastes containing these constituents through their prescreening operations. The Agency, therefore, believes it is necessary to incorporate organics batch testing into the contingency testing program to ensure that stray organic constituents are not present in the treatment residue at levels of regulatory concern.

The Agency believes that a conditional exclusion can be granted to the Tricil Muskegon facility. The conditions of the exclusion would necessitate testing each batch of treated waste for the EP toxic metals, nickel, cyanide, and a group of organics. The Agency believes this testing requirement is necessary due to the inherent variability encountered by a changing client base, the process variation

associated with each of the clients serviced, the high concentrations of toxic constituents in the incoming wastes and in the treatment residue, and the high volumes of treatment residue generated annually by Tricil.

This testing requirement is self-implemented. That is, the results of testing each batch need not be reviewed by state or Federal EPA representatives prior to disposal. The test data must be recorded and kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis.

The Agency, therefore, proposes to grant an exclusion to the Tricil Muskegon facility providing that the following contingency testing program is followed:

(1) Each batch ³³ of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP test if total oil and grease levels are greater than one percent) for the EP toxic metals (As, Ba, Cd, Cr, Pb, Se, Ag and Hg) and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.315 ppm; barium levels exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm ³⁴ or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.

(3) Each batch of waste must be tested for the total content of the organic toxicants listed below. If the total content of any of these constituents exceeds the maximum levels listed below, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270. This list of organic constituents is a compilation of

³³ The Agency is defining "batch" as the volume of waste generated for periodic disposal. That is, if a dumpster of filter cake is generated every 2 days, but is accumulated for a week before disposal, representative samples would be collected prior to disposal from each dumpster of waste and composited for analysis.

³⁴ See footnote 8.

organics detected at each of Tricil's three facilities.³⁵

Compound	Maximum acceptable level ^{1,2,3} (ppm)	
	Baseline	95 percent
Acrolein	39.9	22.3
Anthracene	72	45
Benzene	0.106	0.060
p-Chloro-m-cresol	132.4	92.1
m- and p-Cresols	1,030	619
1,1-Dichloroethane	.01	.005
Fluorene	10.4	7.23
Methylene chloride	8.18	5.27
Methyl ethyl ketone	313	175
N-Nitrosodiphenylamine	11.9	9.1
Phenanthrene	13.95	9.57
Phenol	1,560	882
Tetrachloroethylene	.188	.113
Trichloroethylene	.59	.38
Chloroform	.012	.0061
1,2-Dichloroethane	.0082	.0038
2,4-Dimethylphenol	126	87
Vinyl chloride	.18	.105
1,2-Diphenyl hydrazine	1.95	.917

¹ Since the OLM has not been finalized, both versions of the model (i.e., the baseline equation and the 95 percent confidence interval applied to the baseline) are calculated here. Once finalized, only one of these two versions will apply.

² Includes constituents identified at all of Tricil's petitioning facilities.

³ Although the original list of constituents was the same for all of Tricil's petitioning facilities (i.e., constituents detected at each facility are to be tested for at all of the facilities), the actual tabulation in each proposed exclusion may vary due to the facility's specific generation rate and our subsequent 1000 ppm VHS limitation.

(4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the compounds listed above, as well as for the remaining organics on the priority pollutant list. (See 47 FR 52309, November 19, 1982, Appendix A—126 Priority Pollutants.) These data must be kept on file at the facility and submitted to the Administrator by certified mail semi-annually. The Agency has required that these additional scans be run on monthly composites to determine whether additional organic constituents should be added to the group of parameters tested on a batch basis due to variation of existing client wastes or variation of the client base. The Agency will review this information and, if needed, will propose to modify or withdraw the exclusion.

The Agency notes that the limits specified above are based on the VHS model and a treatment residue generation rate of greater than 8000 tons per year. Based on the VHS analyses, total constituent analyses, the pre-

screening process, and the contingency plan, the Agency believes that the treatment residue generated at Tricil Environmental Services' MWTF located in Muskegon, Michigan, from their wastewater treatment processes, under the conditions specified above, is non-hazardous (for all reasons). The Agency, therefore, proposes to exclude conditionally Tricil's treatment residue from hazardous waste control for the EPA Hazardous Waste Nos. F006 and K062, as described in their petition. (The Agency notes that the exclusion remains in effect unless the waste varies from that originally described in the petition (e.g., the waste is altered as a result of changes in the treatment process).³⁶ In addition, Tricil is still obligated to determine whether their treatment residue exhibits any of the characteristics of a hazardous waste.)

IV. Effective Date

The Hazardous and Solid Waste Amendments of 1984 amended section 3010 of RCRA to allow rules to become effective in less than six months when the regulated community does not need the six-month period to come into compliance. That is the case for the three proposed exclusions since this rule reduces, rather than increases, the existing requirements for generating hazardous wastes. In light of the unnecessary hardship and expense which would be imposed on these petitioners by an effective date six months after promulgation and the fact that such a deadline is not necessary to achieve the purpose of section 3010, we believe that the exclusions, if promulgated, should be effective immediately.

V. Regulatory Impact

Under Executive Order 12291, EPA must judge whether a regulation is "major" and, therefore, subject to the requirement of a Regulatory Impact Analysis. The granting of the three exclusions is not major since its effect is to reduce the overall costs and economic impact of EPA's hazardous waste management regulations. This reduction is achieved by excluding wastes generated at specific facilities

from EPA's lists of hazardous wastes, thereby enabling these facilities to treat their wastes as non-hazardous.

VI. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601-612, whenever an Agency is required to publish a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis which describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). The Administrator may certify, however, that the rule will not have a significant economic impact on a substantial number of small entities.

This amendment will have no effect of increasing overall waste disposal costs. For the three facilities that may be excluded, this amendment will reduce the overall costs of EPA's hazardous waste regulations. The overall economic impact, therefore, on small entities is small. Accordingly, I hereby certify that this proposed regulation will not have a significant economic impact on a substantial number of small entities.

This regulation, therefore, does not require a regulatory flexibility analysis.

List of Subjects in 40 CFR Part 261

Hazardous waste, Recycling.

(Sec. 3001 RCRA, 42 U.S.C. 6921)

Dated: October 8, 1986.

Jeffrey D. Denit,

Acting Director, Office of Solid Waste.

For the reasons set out in the preamble, 40 CFR Part 261 is proposed to be amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for Part 261 continues to read as follows:

Authority: Secs. 1006, 2002(a), 3001, and 3002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended [42 U.S.C. 6905, 6912(a), 6921, and 6922].

2. In Appendix IX, add to tables 1 and 2 the following wastestreams in alphabetical order:

³⁵ See footnote 8.

³⁶ See footnote 13.

Appendix IX—Wastes Excluded Under §§ 260.20 and 260.22

TABLE 1.—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES

Facility	Address	Waste description
Tricil Environmental Services, Inc.	Hilliard, OH	<p>Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after [insert date of final rule's publication]. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oil Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (3) Each batch of the waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.</p> <p style="text-align: center;">Maximum Acceptable Levels (ppm)</p> <p>Acrolein, 39.9 Anthracene, 72 Benzene, 0.106 p-Chloro-m-cresol, 132.4 m- and p-Cresols, 1,030 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.18 Methyl ethyl ketone, 313 N-Nitrosodiphenylamine, 11.9 Phenanthrene, 13.95 Phenol, 1,560 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.012 1,2-Dichloroethane, 0.0082 2,4-Dimethylphenol, 126 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 1.95</p> <p>(4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the organic compounds shown above as well as the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982, Appendix A—126 Priority Pollutants); (5) The test data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion.</p>
Tricil Environmental Services, Inc.	Nashville, TN	<p>Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F019) generated the chemical conversion coating of aluminum after [insert date of final rule's publication]. To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oil Waste EP test if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 0.31 ppm; barium levels exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 4.4 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (3) Each batch of waste must be tested for the total content of the following organic toxicants. If the content of any of these constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.</p> <p style="text-align: center;">Maximum Acceptable Levels (ppm)</p> <p>Acrolein, 254 Anthracene, 465 Benzene, 0.67 p-Chloro-m-cresol, 847 1,1-Dichloroethane, 0.067 Fluorene, 66.6 Methylene chloride, 52.2 N-Nitrosodiphenylamine, 76.1 Phenanthrene, 89.4 Tetrachloroethylene, 1.2 Trichloroethylene, 3.78 Chloroform, 0.081 1,2-Dichloroethane, 0.082 1,2-trans-Dichloroethylene, 1,474 2,4-Dimethylphenol, 79.7 Vinyl chloride, 1.15 1,2-Diphenyl hydrazine, 12.51</p>

TABLE 1.—WASTES EXCLUDED FROM NON-SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Tricil Environmental Services, Inc.	Muskegon, MI	<p>(4) a grab sample must be collected from each batch to form a monthly composite sample, which must be tested using GC/MS analysis for the organic compounds shown above, as well as for the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982—Appendix A—126 Priority Pollutants); (5) The test data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion; (6) This exclusion applies to a maximum treatment residue generation rate of 700 tons per year.</p> <p>Dewatered wastewater treatment sludges (EPA Hazardous Waste No. F006) generated from electroplating operations after (insert date of final rule's publication). To ensure that hazardous constituents are not present at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned waste. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 1.1 ppm; barium levels exceed 2.2 ppm; cadmium and selenium levels exceed 0.22 ppm; mercury levels exceed .044 ppm; or nickel levels exceed 7.8 ppm, the waste will be retreated or managed and disposed as a hazardous waste under Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (2) Batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (3) Each batch of waste must be tested for the total content of the following organic toxicants. If the total content of any of these constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.</p> <p>Maximum Acceptable Levels (ppm)</p> <p>Acrolein, 39.9 Anthracene, 72 Benzene, 0.106 p-Chloro-m-cresol, 132.4 m- and p-Cresols, 1,030 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.18 Methyl ethyl ketone, 313 N-Nitrosodiphenylamine, 11.9 Phenanthrene, 13.95 Phenol, 1,560 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.012 1,2-Dichloroethane, 0.0062 2,4-Dimethylphenol, 126 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 1.95</p> <p>(4) One grab sample must be collected from each batch to form one monthly composite sample, which must be tested using the GC/MS analysis for the organic compounds shown above, as well as for the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982—Appendix A—126 Priority Pollutants); (5) The test data from conditions 1-4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion.</p>

TABLE 2.—WASTES EXCLUDED FROM SPECIFIC SOURCES

Facility	Address	Waste description
Tricil Environmental	Hilliard, OH	<p>Spent pickle liquor (EPA Hazardous No. K062) generated by steel finishing operations of facilities within the iron and steel industry (SIC codes 331 and 332) after (insert date of final rule's publication). To ensure that hazardous constituents are not present in the waste at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned wastes. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP test, if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 6.3 ppm; cadmium and selenium levels exceed 0.063 ppm; mercury levels exceed 0.013 ppm; or nickel levels exceed 2.2 ppm, the waste will be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (2) Each batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (3) Each batch of the waste must be tested for the total content of the following organic toxicants. If the total content of any of the constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.</p>

TABLE 2.—WASTES EXCLUDED FROM SPECIFIC SOURCES—Continued

Facility	Address	Waste description
Tricil Environmental Services, Inc	Muskegon, MI	Maximum acceptable levels (ppm)
		<p>Acrolein, 39.9 Anthracene, 72 Benzene, 0.106 p-Chloro-m-cresol, 132.4 m- and p-Cresols, 1,030 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.18 Methyl ethyl ketone, 313 N-Nitrosodiphenylamine, 11.9 Phenanthrene, 13.95 Phenol, 1,560 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.012 1,2-Dichloroethane, 0.0082 2,4-Dimethylphenol, 126 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 1.95</p> <p>(4) A grab sample must be collected from each batch to form one monthly composite sample, which must be tested using GC/MS analysis for the organic compounds shown above, as well as the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982, Appendix A—126 Priority Pollutants); (5) The test data from conditions 1–4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semiannual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion.</p> <p>Spent pickle liquor (EPA Hazardous Waste No. K062) generated by steel finishing operations of facilities within the iron and steel industry (SIC codes 331 and 332), after [insert date of final rule's publication]. To ensure that hazardous constituents are not present at levels of regulatory concern, the facility must implement a contingency testing program for the petitioned waste. This testing program must meet the following conditions for the exclusion to be valid: (1) Each batch of treatment residue must be representatively sampled and tested using the total oil and grease test and the EP toxicity test (or the Oily Waste EP if the oil and grease content of the waste exceeds one percent) for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. If the extract concentrations for chromium, lead, arsenic, and silver exceed 1.1 ppm; barium levels exceed 2.2 ppm; cadmium and selenium levels exceed 0.22 ppm; mercury levels exceed 0.044 ppm; or nickel levels exceed 7.8 ppm, the waste will be retreated or managed and disposed as a hazardous waste under Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (2) Batch of treatment residue must be tested for reactive and leachable cyanide. If the reactive cyanide levels exceed 250 ppm or leachable cyanide levels (using the EP toxicity test without acetic acid adjustment) exceed 1.26 ppm, the waste must be retreated or managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270; (3) Each batch of waste must be tested for the total content of the following organic toxicants. If the total content of any of these constituents exceeds the maximum levels shown, the waste must be managed and disposed as a hazardous waste under 40 CFR Parts 262 to 265 and the permitting standards of 40 CFR Part 270.</p>
		Maximum acceptable levels (ppm)
		<p>Acrolein, 39.9 Anthracene, 72 Benzene, 0.106 p-Chloro-m-cresol, 132.4 m- and p-Cresols, 1,030 1,1-Dichloroethane, 0.01 Fluorene, 10.4 Methylene chloride, 8.18 Methyl ethyl ketone, 313 N-Nitrosodiphenylamine, 11.9 Phenanthrene, 13.95 Phenol, 1,560 Tetrachloroethylene, 0.188 Trichloroethylene, 0.59 Chloroform, 0.012 1,2-Dichloroethane, 0.0082 2,4-Dimethylphenol, 126 Vinyl chloride, 0.18 1,2-Diphenyl hydrazine, 1.95</p> <p>(4) One grab sample must be collected from each batch to form one monthly composite sample, which must be tested using the GC/MS analysis for the organic compounds shown above, as well as for the remaining organics on the priority pollutant list (see 47 FR 52309, November 19, 1982—Appendix A—126 Priority Pollutants); (5) The test data from conditions 1–4 must be kept on file at the facility for inspection purposes and must be compiled, summarized, and submitted to the Administrator by certified mail on a semi-annual basis. The Agency will review this information and if needed, will propose to modify or withdraw the exclusion.</p>

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