

Permit

Los Alamos
NATIONAL LABORATORY
memorandum

Environmental Restoration Project
EM/ER

To/MS: Distribution
From/MS: Barry Drennon, DCC/M707
Phone/FAX: 665-6496/665-5358
Symbol: EM/ER-98-0327
Date: 9/2/98

SUBJECT: RCRA PERMITS MANAGEMENT PROGRAM REQUIREMENT GUIDE

Enclosed for your information is the *New Mexico Environment Department RCRA Permits Management Program Requirement Guide* issued by the Hazardous and Radioactive Materials Bureau in March, 1998.

The tabs have been added for your convenience and were not part of the original document.

The attached figure has also been added for your convenience. This figure supplements the figure in the *Risk-Based Decision Tree* (included after the last tab of this document). It is difficult to read the text of the figure in the original, therefore the attached figure has been included.

BD/bjd

Attachment: Risk Based Decision Tree

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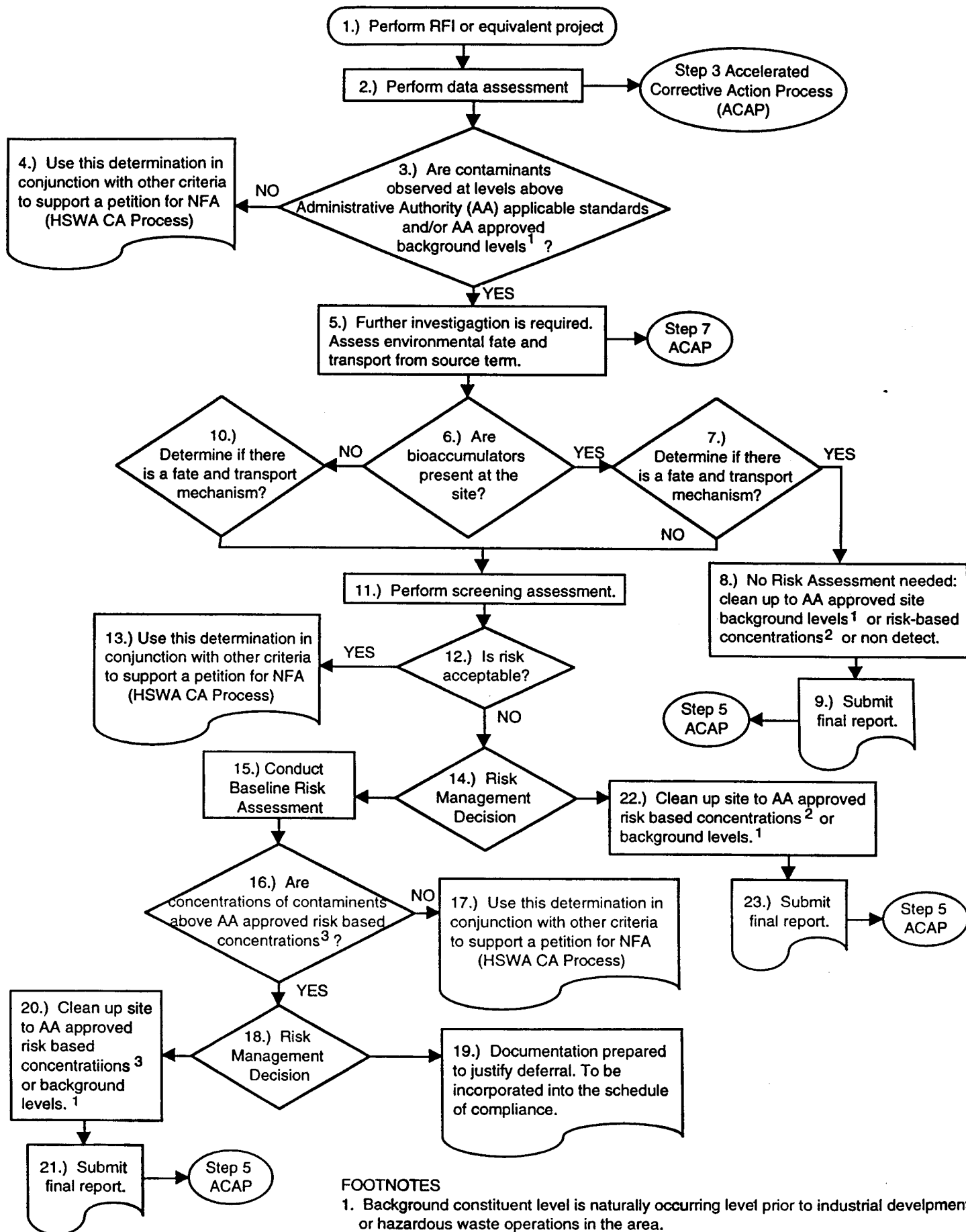


15723

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CLEAN UP LOS ALAMOS...
faster hotter cleaner

RISK BASED DECISION TREE



FOOTNOTES

1. Background constituent level is naturally occurring level prior to industrial development or hazardous waste operations in the area.
2. Using Ecological or Toxicological Benchmarks developed on a case by case basis.
3. Developed on a site specific basis by conducting a baseline risk assessment.

**New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
RCRA Permits Management Program**

RPMP Document Requirement Guide

HRMB Standard Operating Procedures Manual

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- I. SOP Volume 1 - Overview
 - A. Purpose
 - B. Frequency of Revision
- II. RCRA Activities
 - A. Subtitle C
 - 1. Applicable Laws and Regulations
 - a. Permit Procedures - Environment Department Regulations (20 NMAC 1.4)
 - b. Hazardous Waste Management Regulations (20 NMAC 4.1)
 - c. Hazardous Waste Fee Regulations (20 NMAC 4.2)
 - d. New Mexico Hazardous Waste Act (Chapter 74-4-1 through 14)
 - e. Procedures for Decision Making (20 NMAC 4.1, Subpart X, §1103, 40 CFR 124)
 - f. The Solid Waste Disposal Act as Amended by The Hazardous and Solid Waste Amendments of 1984.....
 - g. Resource Conservation and Recovery Act of 1976
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 - 3. Permitting Processes
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 - (2) Subpart J - Tank Systems (§264.190, §265.190 and §270.16)
 - (3) Subpart K - Surface Impoundments (§264.220, §265.220 and §270.17)
 - (4) Subpart L - Waste Piles (§264.250, §265.250 and §270.18)
 - (5) Subpart M - Land Treatment (§264.270, §265.270 and §270.20)
 - (6) Subpart N - Landfills (§264.300, §265.300 and §270.21)
 - (7) Subpart O - Incinerators (§264.340 and §265.340)
 - (8) Subpart O - Short Term Incineration (§ 264.344, §265.340 and §270.62)

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- (9) **Subpart S - Corrective Action Management Unit (\$264.552)**
- (10) **Temporary Units (\$264.553)**
- (11) Subpart W - Drip Pads (\$264.570, \$265.440 and \$270.26)
- (12) **Subpart X - Miscellaneous Units (\$264.600 and \$270.23)**
- (13) Subpart AA - Air Emission Standards for Process Vents (\$264.1000, \$265.1033 and \$270.24)
- (14) Subpart BB - Air Emission Standards for Equipment Leaks (\$264.1050, \$265.1050 and \$270.25)
- (15) Subpart CC - Air Emission Standards for Tanks, Surface Impoundments, and Containers (\$264.1080, \$265.1080 and \$270.27)
- (16) Subpart DD - Containment Buildings (\$264.1100 and \$265.1100)
- c. **Closure and Post Closure Care Plans/Permits**
 - (1) **Subpart G - Closure and Post Closure (\$264.110 and \$265.110)**
 - (2) Subpart I - Use and Management of Containers (\$264.178)
 - (3) Subpart J - Tanks Systems (\$264.197 and \$265.197)
 - (4) Subpart K - Surface Impoundments (\$264.228 and \$265.228)
 - (5) Subpart L - Waste Piles (\$ 264.258 and \$265.258)
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 - (7) Subpart N - Landfills (\$264.310 and \$265.310)
 - (8) Subpart O - Incinerators (\$264.351 and \$265. 351)
 - (9) Subpart W - Drip Pads (\$264.575 and 265.445)
 - (10) Subpart X - Miscellaneous Units (\$264.603)
 - (11) Subpart DD - Containment Buildings (\$264.1102 and \$265.1102)
- d. **Subpart F - Special Forms of Permits (\$270)**
 - (1) Permit by Rule (\$270.60)
 - (2) Emergency (\$270.61)
 - (3) Hazardous Waste Incinerators (\$270.62)
 - (4) **Land Treatment Demonstration (\$270.63)**
 - (5) Interim Permit for UIC Wells (\$270.64)
 - (6) **Research Development and Demonstration (\$270.65)**
 - (7) Boilers and Industrial Furnaces (\$270.66)
- 5. **References/Guidance Documents**
- B. **HSWA/Corrective Action**
 - 1. **Subpart S Guidance**
 - a. **Proposed Subpart S Rules**
 - (1) **Federal Register Vol. 55, No. 145, Friday July 27, 1990**
 - (2) **Federal Register Vol. 61, No. 85, Wednesday May 1, 1996**
 - 2. **Review Procedures**
 - a. **External Comments**
 - (1) **Environmental Protection Agency**

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- b. Technical Resources
 - c. Precedence
 - (1) Notices of Deficiency
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 - (3) Position Papers
 - (4) EPA Documents
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 - 3. Drafting and Issuing Comments
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 - (1) Facility-wide Workplans (IWP, BWIP, etc.)
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 - (4) HSWA/CA-related Permit Modification Requests
 - (a) No Further Action Proposals
- III. HRMB Position Papers
 - A. Risk Evaluation Issues
 - 1. Risk Assessment
 - a. Human Health Risk-based Screening Action Levels and Screening-level Assessment
 - b. Use of Tolerance Intervals to Calculate Constituent Concentrations Representative of Natural Background
 - c. Application of Background Concentrations in the Risk Assessment Process
 - d. Radiological Risk Assessment
 - e. Application of Risk Assessment to RCRA-regulated Units
 - 2. **Site-specific Background**
 - 3. Land Use and Exposure Scenarios
 - a. Future Land Use Plans
 - 4. RCRA-regulated Activities
 - a. Risk-based Cleanup and Closure at Sites for Which Remediation or Removal of Hazardous Constituents to Background Levels Will Not Be Achieved
 - b. Clean Closure
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 - 1. SAP Development and Performance
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- e. **Variances from Approved Workplans**
 - f. **Polychlorinated Biphenyls (PCBs)**
 - g. **Presumptive Sampling**
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 - a. **Uppermost Aquifer**
 - b. **Filtered vs. Unfiltered Ground Water Samples**
 - c. **Approach to Systemic Ground Water Contamination**
 - d. **Collective Drainage or Watershed Approach**
 - e. **Low Flow Sampling**
 - 3. **Data Evaluation**
 - a. **Data Quality Reviews**
 - b. **Data Useability**
 - c. **Adequate QA/QC Sampling**
- C. **Processes**
 - 1. **Solid Waste Management Unit Designations**
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 - 2. **Accelerated Corrective Action**
 - 3. **Interim Measures**
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- D. **Communication and Coordination**
 - 1. **Point of Contacts**

STANDARD OPERATING PROCEDURES (SOP) MANUAL

VOLUME 1 - External

I. SOP Volume 1 - Overview

A. Purpose

The Resource Conservation and Recovery Act (RCRA) Permits Management Program (RPMP) staff is responsible for administering the State of New Mexico's Hazardous Waste Management Permit Program and implementing the RCRA Permit Program under the provisions of the New Mexico Hazardous Waste Act (Section 74-4-1 et seq. New Mexico Statutes Annotated 1978), Title 20 New Mexico Administrative Code Chapter 4.0 and as authorized by the United States Environmental Protection Agency (USEPA). RPMP's primary directive is to protect human health and the environment of the State of New Mexico.

As the administrative authority for over thirty facilities (comprising over four thousand corrective action sites) state-wide, RPMP has prepared this Standard Operating Procedures Manual, Volume I - External (the "Document") to assist both the regulated community in developing and the regulator in reviewing RCRA- and Hazardous and Solid Waste Amendment (HSWA)-required documents.

B. Frequency of Revision

This Document, which is considered a living document, shall be revised on an annual basis, or as otherwise deemed necessary by RPMP. The regulated community is encouraged to provide written comments to RPMP for consideration for inclusion in subsequent revisions to this Document; however, RPMP will be the sole author of revisions to this Document.

Each revision made to this Document or portions of this Document shall be so identified as a revision (indicated by a change in date) in the lower right-hand corner of each revised page. As revisions are made, they shall be distributed by formal transmittal letter from a RPMP representative to each facility's designated point of contact. Additions made to this Document shall be distributed in the same manner as revisions.

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NMAC TRANSMITTAL FORM

1 NMAC 3.3.10.22

[Sequence No. _____]

1. Agency Name & Mailing Address

New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. Agency Account Code

110100

3. Type of Rule Action

New _____ Emergency _____
Amending _____ Repealing x

4. NMAC Title Name

Environmental Protection

NMAC Title Number

20

5. NMAC Chapter Name

Environmental Protection General

NMAC Chapter Number

1

6. NMAC Part Name

Permit Procedures - Environment Department

NMAC Part Number

4

7. Modified NMAC Name

Modified NMAC Number

Filing Date (if applicable)

8. Are there any materials incorporated by reference?

No X

Yes _____ Please list attachments: 1. _____
2. _____
3. _____

9. If materials are attached, have copyright permissions been received?

No _____

Yes _____

Public domain _____

10. Total Number of Pages: 111. Hearing Date of Rule: 07 / 22 / 9712. Effective Date of Rule: 12 / 01 / 9713. Contact Person: Susan McMichaelPhone Number: 827 - 0127

14. Signature & Title of Issuing Authority

Name: Mark E. Weidler

Title: Secretary of Environment

Signature

Date Signed

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NEW MEXICO ENVIRONMENT DEPARTMENT
1190 ST. FRANCIS DRIVE/P.O. BOX 26110
SANTA FE, NEW MEXICO 87502

TITLE 20	ENVIRONMENTAL PROTECTION
CHAPTER 1	ENVIRONMENTAL PROTECTION GENERAL
PART 4	PERMIT PROCEDURES - ENVIRONMENT DEPARTMENT

20 NMAC 1.4, Permit Procedures - Environment Department, is repealed effective December 1, 1997. Repromulgation of 20 NMAC 1.4, Permit Procedures - Environment Department, filed November 13, 1997, will be effective December 1, 1997.

NMAC TRANSMITTAL FORM 1997 NOV 13 AM 10:56

1 NMAC 3.3.10.22

[Sequence No. 1]

1. Agency Name & Mailing Address

New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. Agency Account Code

110100

3. Type of Rule Action

New ☒ Emergency ☐
Amending ☐ Repealing ☐

4. NMAC Title Name

Environmental Protection

NMAC Title Number

20

5. NMAC Chapter Name

Environmental Protection General

NMAC Chapter Number

1

6. NMAC Part Name

Permit Procedures - Environment Department

NMAC Part Number

4

7. Modified NMAC Name

Modified NMAC Number

Filing Date (if applicable)
____/____/____

8. Are there any materials incorporated by reference?

No ☒

Yes ☐ Please list attachments: 1. _____
2. _____
3. _____

9. If materials are attached, have copyright permissions been received?

No ☐Yes ☐Public domain ☐

10. Total Number of Pages: 21--

11. Hearing Date of Rule: 07 / 22 / 97

12. Effective Date of Rule: 12 / 01 / 97

13. Contact Person: Susan McMichael

Phone Number: 827 - 0127

14. Signature & Title of Issuing Authority

Name: Mark E. Weidler

Title: Secretary of Environment



Signature

11/12/97

Date Signed

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**NEW MEXICO ENVIRONMENT DEPARTMENT
1190 ST. FRANCIS DRIVE/P.O. BOX 26110
SANTA FE, NEW MEXICO 87502**

**TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 1 ENVIRONMENTAL PROTECTION GENERAL
PART 4 PERMIT PROCEDURES - ENVIRONMENT DEPARTMENT**

100. SUBPART I - GENERAL [12-1-97]

101. ISSUING AGENCY: Environment Department. [12-1-97]

102. SCOPE: This Part sets forth procedural regulations for public hearings before the Environment Department involving permit issuance, renewal, denial, or modification, license, and variance petitions, except to the extent any provision of this Part is inconsistent with any rule promulgated by the Environmental Improvement Board or the Water Quality Control Commission. These regulations may be adopted by the Environmental Improvement Board or Water Quality Control Commission; however, nothing in this Part shall be construed as limiting or affecting, in any manner, the authority of the Board or Commission to adopt rulemaking for permit procedures as provided by law. [12-1-97]

103. STATUTORY AUTHORITY: This Part is adopted under the authority of NMSA 1978, §§ 9-7A-6.D, 74-1-1 through 13, 74-4-4.A.7, 74-9-28.A (1) and (3) and 74-9-29. [12-1-97]

103A. PRE-NMAC REGULATORY FILING HISTORY: The material in this Part was derived from that previously filed with the State Records Center & Archives under NMED 91-1, Rules Governing Hearings for Permits and Variances Under the Solid Waste Act, filed June 18, 1991. [12-1-97]

103B. HISTORY OF REPEALED MATERIAL: This Part repeals and replaces 20 NMAC 1.4, Permit Procedures - Environment Department, filed October 31, 1995, as amended by 20 NMAC 1.4.112.C.1, filed May 17, 1996. [12-1-97]

104. DURATION: Permanent. [12-1-97]

105. EFFECTIVE DATE: December 1, 1997, unless a later date is cited at the end of a section or paragraph. [12-1-97]

106. OBJECTIVE: The objective of this Part is to establish hearing procedures for permit issuance, renewal, denial, or modification, license and variance petitions; to ensure due process for all persons; to ensure the ability to participate of all

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persons and entities who desire to take part; and to give an orderly structure to the proceedings. [12-1-97]

107. DEFINITIONS:

A. GENERAL. As used in this Part:

1. "Act" means, as the context requires:

- a. the Department of Environment Act, NMSA 1978, Chapter 9, Article 7A;
- b. the Air Quality Control Act, NMSA 1978, Chapter 74, Article 2;
- c. the Radiation Protection Act, NMSA 1978, Chapter 74, Article 3;
- d. the Hazardous Waste Act, NMSA 1978, Chapter 74, Article 4;
- e. the Water Quality Act, NMSA 1978, Chapter 74, Article 6;
- f. the Solid Waste Act, NMSA 1978, Chapter 74, Article 9; and
- g. any rule adopted or amended by the Board or Commission that utilizes this Part;

2. "Administrative Record" means all public records used by the Division in evaluating the application or petition, including the application or petition and all supporting data furnished by the applicant or petitioner, all materials cited in the application or petition, public comments, correspondence, and as applicable, the draft permit and statement of basis or fact sheet, and any other material used by the Division to evaluate the application or petition;

3. "Applicant" means any person whose application for a permit, renewal or modification to a permit, or license is the subject of the proceeding under this Part;

4. "Application" means an application for a permit, renewal or modification to a permit, or license;

5. "Completeness Determination" means a determination made by the Secretary that an application under the Solid Waste Act contains all information required by the Act and Regulations;

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6. "Department" means the Environment Department or its successor agency;
7. "Division" means the appropriate Division within the Environment Department;
8. "document" means any pleading, motion, response, reply, memorandum, decision, order, entry of appearance, or other writing filed in a proceeding under this Part;
9. "Draft Permit" means a document prepared by the Division indicating the Division's proposed decision to issue, deny, or modify a permit;
10. "final order" means the order issued by the Secretary that is dispositive of the matter;
11. "Hearing Clerk" means the person designated by the Secretary to maintain the Hearing Record;
12. "Hearing Determination" means a determination made by the Secretary that a public hearing is required under the Act or Regulations;
13. "Hearing Officer" means the person designated under this Part or appointed by the Secretary to conduct a proceeding under this Part;
14. "Hearing Record" means the Record Proper and the written transcript or recorded tape of the public hearing, including all exhibits offered into evidence, whether or not admitted;
15. "license" means a license issued pursuant to the Radiation Protection Act, NMSA 1978, Chapter 74, Article 3;
16. "party" means the Petitioner, the Applicant, the Division, or a person who files an entry of appearance on or before the deadline set forth in the Notice of Hearing;
17. "Petition" means a Petition for Variance;
18. "Petitioner" means a person who timely files a Petition;
19. "Record Proper" means the Administrative Record and all documents filed by or with the Hearing Clerk;
20. "Regulations" means any rule adopted pursuant to the Act;

21. "Secretary" means the Secretary of Environment, the Secretary's designee, or any person who assumes the role of the Secretary for purposes of this Part in the event of the Secretary's recusal or disqualification;

22. "technical testimony" means scientific, engineering, economic or other specialized testimony, whether oral or written, but does not include legal argument, general comments, or statements of policy or position concerning matters at issue in the hearing;

23. "technical materials" means all data, studies and tangible materials used to form the basis of opinion(s) held by a witness presenting technical testimony; and

24. "Variance" means a waiver from one or more substantive regulations under the Solid Waste Act.

B. TERMS USED IN ACT OR REGULATIONS. Terms defined in the Act or Regulations and not defined in this Part are used consistent with the meanings given in the Act or Regulations.
[12-1-97]

108. APPLICABILITY OF RULES OF CIVIL PROCEDURE AND EVIDENCE: The New Mexico Rules of Civil Procedure, SCRA 1986, §§ 1-001 to 1-102 and the New Mexico Rules of Evidence, SCRA 1986, §§ 11-101 to 11-1102 shall not apply to proceedings under this Part. At the discretion of the Hearing Officer, the rules may be used for guidance and shall not be construed to limit, extend, or otherwise modify the authority and jurisdiction of the Secretary under any Act. [12-1-97]

109. LIBERAL CONSTRUCTION: This Part shall be liberally construed to carry out its purpose and the purposes of the statute or statutes and regulations pursuant to which the proceeding at issue is conducted. This part shall also be liberally construed to facilitate participation by members of the public, including those who are not represented by counsel. [12-1-97]

110. SEVERABILITY: If any section or application of this Part is held invalid, the remainder of this Part or any other application shall not be affected. [12-1-97]

111. SAVINGS CLAUSE:

A. LIMITATION OF APPLICABILITY. This Part does not apply to pending proceedings for which a Notice of Hearing has been published as provided in Section 202 of 20 NMAC 1.4 filed October 31, 1995, does not affect any permit issued prior to the effective date of this Part until the permittee applies for a modification

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or renewal of the permit, and does not affect any license or variance issued prior to the effective date of this Part. Any amendment to this Part shall not apply to a proceeding pending on the effective date of the amendment.

B. REFERENCES IN OTHER RULES. Any reference in any other rule to NMED 91-1, or to 20 NMAC 1.4 as filed October 31, 1995 and amended May 17, 1996, or to any provision thereof shall be construed as a reference to this Part, or to the corresponding provision thereof.
[12-1-97]

112. POWERS AND DUTIES OF THE SECRETARY AND HEARING OFFICER:

A. SECRETARY. The Secretary shall exercise all powers and duties as prescribed under the Act, the Regulations and this Part, and not otherwise delegated to a staff member, the Hearing Officer, or the Hearing Clerk. The Secretary may specify procedures in addition to or that vary from those provided in this Part in order to expedite the efficient resolution of the action or to avoid obvious injustice, so long as such procedures do not conflict with the Act or the Regulations or prejudice the rights of any party.

B. HEARING OFFICER. The Secretary may appoint one or more Hearing Officers to perform the functions described in this Section. The Hearing Officer shall exercise all powers and duties prescribed or delegated under the Act, the Regulations, or this Part. The Hearing Officer shall conduct a fair and impartial proceeding, assure that the facts are fully elicited, and avoid delay. The Hearing Officer shall have authority to take all measures necessary for the maintenance of order and for the efficient, fair and impartial adjudication of issues arising in proceedings governed by this Part which includes, but is not limited to, authority to:

1. conduct hearings under this Part;
2. rule upon motions, procedural requests, and offers of proof;
3. issue all necessary orders, except final orders issued by the Secretary under this Part;
4. issue subpoenas, as authorized under the Solid Waste Act and Section 205.D;
5. administer oaths and affirmations, examine witnesses and admit or exclude evidence; and

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6. require parties to attend conferences for the settlement or simplification of the issues, or the expedition of the proceedings.

C. SECRETARY AND HEARING OFFICER; QUALIFICATIONS; DISQUALIFICATION.

1. QUALIFICATIONS.

a. The Secretary or the Hearing Officer shall not perform any function provided for in this Part regarding any matter in which the Secretary or the Hearing Officer:

(1) has a personal bias or prejudice concerning a party, the Application or Petition, involved in the proceeding;

(2) has a financial interest in the proceeding or facility that is the subject of the proceeding;

(3) is related to a party to the proceeding; or

(4) is an officer, director or trustee of a party to the proceeding.

b. The Secretary shall not be disqualified solely because of having been briefed on the matter prior to initiation of a proceeding under this Part.

2. DISQUALIFICATION.

a. Any party, by motion and for cause listed in Section 112.C.1, may request the disqualification of the Hearing Officer at any time prior to the hearing, or of the Secretary at any time prior to filing of the Final Order.

b. The Hearing Officer shall file a recommended decision on a motion under this Section within five (5) days. The Secretary shall file an order on a motion under this Section within five (5) days of the filing of the recommended decision. If the Secretary grants the motion, the order shall designate the person who shall assume the duties of the Secretary or Hearing Officer.
[12-1-97]

113. COMPUTATION AND EXTENSION OF TIME:

A. COMPUTATION. In computing any period of time prescribed or allowed by this Part, by any applicable statute, or by order of the Hearing Officer or Secretary, except as otherwise specifically provided, the day of the event from which the designated period begins to run shall not be included. The last day of the computed

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period shall be included, unless it is a Saturday, Sunday, or legal state holiday, in which event the time is extended until the end of the next day which is not a Saturday, Sunday, or legal state holiday. Whenever a party must act within a prescribed period after service upon him and service is by mail, three (3) days is added to the prescribed period. The three days extension does not apply to any deadline mandated under the Act.³

B. EXTENSIONS OF TIME. The Secretary or Hearing Officer may grant an extension of time to file a document or may continue a hearing upon timely motion of a party to the proceeding, for good cause shown, and after consideration of prejudice to other parties and undue delay to the proceeding.
[12-1-97]

114. EX PARTE DISCUSSIONS: At no time shall any person discuss the merits of the proceeding ex parte with the Secretary or the Hearing Officer. "Ex parte" means any written or oral communication relating to the merits of the proceedings, between the Secretary or Hearing Officer and any person, including communications between Department staff directly involved in the proceeding and the Secretary or Hearing Officer. Ex parte does not include communications between any party or person and department staff. This prohibition shall begin to apply on the date the Secretary or Division makes a completeness or hearing determination and shall terminate on the date of the final order. [12-1-97]

115. FILING, SERVICE, AND FORM OF DOCUMENTS:

A. FILING OF DOCUMENTS.

1. Except as otherwise provided, the original of a document to be filed in the proceeding shall be filed with the Hearing Clerk.

2. A telefax copy of a document may be filed in lieu of the original by:

a. telefaxing the document directly to the Hearing Clerk, provided:

(1) the document is preceded by a cover sheet addressed to the Hearing Clerk and indicating:

(a) the sender's name, address, telephone number, and telefax number;

(b) the case name and number; and

(c) the number of pages transmitted;

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(2) the document is no more than ten (10) pages in length excluding the telefax cover sheet; and

(3) the sender does not request return of a conformed copy of the document; or

b. for documents greater than 10 pages in length, telefaxing the document to a person other than the Department who files the document for the sender.

3. A hand-delivered or mailed document, including a document telefaxed to a consenting agent who files the document for the sender, shall be deemed filed on the day the document is received by the Hearing Clerk, provided the document is received before the close of business on a working day. A document telefaxed directly to the Hearing Clerk shall be deemed filed upon completion of successful transmission of the document, provided successful transmission is completed before the close of business on a working day. The close of business on a working day shall be 5:00 p.m. or such earlier time when the Department's main offices are officially closed before 5:00 p.m. A working day shall not include a Saturday, Sunday, or state or federal holiday. A document received after close of business or on a non-working day shall be deemed filed on the next business day.

4. A party filing a document by telefax shall retain the original of the document throughout the pendency of the proceeding. Any party shall have the right to inspect the original of the document.

B. SERVICE OF DOCUMENTS.

1. Except as otherwise provided, a person filing a document shall serve a copy thereof upon all parties.

2. Any service required under this Part shall be deemed adequate if the document is:

a. hand-delivered or mailed first class or express to the most recent address provided by the person upon whom service is made; or

b. telefaxed to the most recent telefax number that:

(1) appears on a document filed in the proceeding by the person upon whom service is made; or

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(2) has been provided to the person making service by the person upon whom service is made, with that person's consent to be served by telefax.

3. A certificate of service, conforming substantially to Section 116.B, shall accompany a filed document.

4. A person serving a document by telefax, upon request of the person upon whom service is made, shall provide to that person a hand-delivered or mailed copy of the document.

C. FORM OF DOCUMENTS. Unless otherwise ordered by the Hearing Officer, all documents, except exhibits, shall be on 8½ x 11-inch white paper, and the first page of every document shall conform substantially to Section 116.A.

D. DOCUMENTS ISSUED BY SECRETARY OR HEARING OFFICER. All documents issued by the Secretary or Hearing Officer shall be filed with the Hearing Clerk. The Hearing Clerk shall promptly serve copies of the document upon all parties.

E. EXAMINATION OF HEARING RECORD.

1. **EXAMINATION ALLOWED.** Subject to the provisions of law restricting the public disclosure of confidential information, any person may, during normal business hours, inspect and copy the Hearing Record or any part thereof.

2. **COST OF DUPLICATION.** Unless waived by the Department, the cost of duplicating the Hearing Record or any part thereof shall be borne by the person seeking duplication.
[12-1-97]

116. SAMPLE FORMS:

A. PREFERRED FORMAT FOR DOCUMENTS.

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT

IN THE MATTER OF THE [APPLICATION/PETITION]
OF [NAME OF APPLICANT/PETITIONER]
FOR A [TYPE OF PERMIT/LICENSE/VARIANCE] FOR
[NAME OR DESCRIPTION OF FACILITY]

No. _____

TITLE OF DOCUMENT

Text of document.

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Signature _____
NAME
ADDRESS
TELEPHONE NUMBER

B. PREFERRED FORMAT FOR CERTIFICATES OF SERVICE.**CERTIFICATE OF SERVICE**

I hereby certify that on [month/day/year] a copy of [name of document] was [hand-delivered/mailed express or first class/faxed] to:

[names and addresses of persons upon whom service is made]

Signature _____
NAME

[12-1-97]

117.-199. [Reserved]

200. SUBPART II - PREHEARING PROCEDURES [12-1-97]

201. INITIATION OF HEARING:

A. FILING OF COMPLETENESS OR HEARING DETERMINATION. A proceeding under this Part shall be initiated by the filing of a Completeness or Hearing Determination by the Secretary.

B. ADMINISTRATIVE RECORD TO HEARING CLERK. Upon the filing of a Completeness or Hearing Determination, the Division shall, no later than the hearing, forward the Administrative Record to the Hearing Clerk. Material readily available at the Division's office, or published material which is generally available, need not be physically included in the Administrative Record, provided that the material is identified in an index to the Administrative Record filed with the Hearing Clerk. The Administrative Record is available for public review at all times.

C. PETITION. A Petition shall: .

1. specify each provision of the Solid Waste Managements Regulations from which the variance is sought;
2. specify the length of time for which the variance is sought; and
3. contain a recitation of all facts the Petitioner relies upon to support the Petition, including a showing that:

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a. application of the provisions from which variance is sought would result in an arbitrary and unreasonable taking of the Petitioner's property or would impose an undue economic burden upon the Petitioner's lawful business, occupation, or activity;

b. granting the variance will not result in any condition injurious to human health, safety, or welfare, or the environment; and

c. if the variance is requested for longer than one (1) year, facts showing that there are no practicable means known or available for the adequate prevention of degradation of the environment or the risk to the public health, safety, or welfare.

D. COMBINED ACTION. Nothing in this Part shall preclude the filing of a combined Application and Petition by the same person, provided the caption and title clearly indicate that the document is to be treated as both an Application and a Petition.

E. DIVISION RESPONSE TO PETITION. The Division shall promptly review the Petition to determine whether it is complete and if not, notify the Petitioner of that fact, and of the reasons the Petition is deemed incomplete.

F. COMPLETENESS DETERMINATION. In making a Completeness Determination, the Division shall consider whether the Applicant has addressed all the administrative requirements required by the Act and the Regulations. The Completeness Determination shall not be considered to be a determination that the Application is approvable.

[12-1-97]

202. NOTICE OF DOCKETING; IDENTIFICATION OF SECRETARY OR DESIGNEE AND HEARING OFFICER: The Hearing Clerk shall, as soon as practicable after receipt of a Completeness or Hearing Determination, issue a Notice of Docketing. The Notice of Docketing shall contain the caption and docket number of the case, the date upon which the Completeness or Hearing Determination was received by the Hearing Clerk, the name of the Secretary or designee who will issue the Final Order, and the name of the Hearing Officer, if one has been designated. If a Hearing Officer has not been designated, the Hearing Clerk shall notify the parties of the name of the Hearing Officer as soon as one is assigned. The Hearing Clerk shall include a copy of this Part with the Notice of Docketing sent to the Applicant or Petitioner. [12-1-97]

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203. SCHEDULING THE HEARING:

A. HEARING DATE. Unless otherwise provided by law, the Hearing Clerk shall distribute the Notice of Public Hearing as set forth in Section 203.B. no later than sixty (60) days after the filing of a Completeness or Hearing Determination.

B. NOTICE OF HEARING.

1. CONTENT. The Department shall promptly prepare and file with the Hearing Clerk a Notice of Hearing setting forth:

- a. the date, time, and location of the hearing;
- b. a brief description of the nature and location of the action to be considered in the Draft Permit, Application or Petition, including the name and address of the Applicant or Petitioner;
- c. the name, address and telephone number of a person from whom further information, including a copy of the Draft Permit, Application or Petition, may be obtained;
- d. the requirements for an Entry of Appearance, a Statement of Intent to Present Technical Testimony, and a general written or oral statement;
- e. a statement that this Part shall apply at the hearing; and
- f. any other requirement set forth in the Act or applicable regulation.

2. SERVICE. Except as provided under Section 205, the Hearing Clerk shall, no later than thirty (30) days prior to the hearing:

- a. send copies of the Notice of Hearing, with requests for publication, to at least one newspaper of general circulation in the state, and to at least one additional newspaper, if any, published or distributed at least weekly in the area where the facility is located;
- b. mail a copy of the Notice of Hearing to each party and to each person who filed a written request for a hearing or who expressed to the Department in writing an interest in the facility that is the subject of the proceeding;

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c. mail a copy of the Notice of Hearing to each local, state, or federal agency and Tribal government affected by the facility that is the subject of the proceeding;

d. immediately upon receipt of an entry of appearance received after the initial mailing, mail a copy of the Notice of Hearing to such person; and

e. file in the Hearing Record the Affidavits of Publication from the newspapers in which the Notice of Hearing was published.

C. CONTINUANCE OF HEARING. A request to continue a hearing may be granted upon motion by a party, for good cause shown, and after consideration of prejudice to other parties and undue delay to the proceeding.

D. LOCATION OF THE HEARING. Unless otherwise provided by law, the hearing shall be in Santa Fe or at a place in the area affected by the facility which is the subject of the proceeding.
[12-1-97]

204. MOTIONS:

A. GENERAL. Any party may file a motion with the Hearing Clerk. All motions, except those made orally on the record during a hearing, shall be in writing, specify the grounds for the motion, state the relief or order sought and state whether it is opposed or unopposed. Each motion may be accompanied by affidavits, certificates, or other evidence relied upon, and shall be served as provided by Section 115.B.

B. UNOPPOSED MOTIONS. An unopposed motion shall state that concurrence of all other parties was obtained. The moving party shall submit a proposed order approved by all parties for review by the Hearing Officer.

C. OPPOSED MOTIONS. Any opposed motion shall state either that concurrence of other parties was sought and denied, or why concurrence was not sought. A memorandum brief in support of such motion may be filed.

D. RESPONSE TO MOTIONS. Any party upon whom an opposed motion is served shall have fifteen (15) days after service of the motion to file a response. A non-moving party failing to file a timely response shall be deemed to have waived any objection to the granting of the motion.

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E. REPLY TO RESPONSE. The moving party may, but is not required to, submit a reply to a non-moving party's response within ten (10) days after service of the response.

F. DECISION. Except as provided in Section 112.C.2 or otherwise ordered by the Hearing Officer, all motions shall be decided by the Hearing Officer without a hearing.
[12-1-97]

205. SPECIAL PROCEDURES FOR HEARINGS UNDER THE SOLID WASTE ACT:

A. SERVICE OF PUBLIC NOTICE. No later than sixty (60) days after the Hearing Clerk receives a Completeness Determination, the Hearing Clerk shall provide public notice of the hearing and service in the form and manner set forth under NMSA 1978, § 74-9-22.

B. DISCOVERY. Discovery shall only be permitted upon a determination by the Hearing Officer that:

1. the discovery will not unreasonably delay the proceeding and is not unreasonably burdensome or expensive;

2. the information sought is not privileged and is relevant to the subject matter of the proceeding; and

3. the information to be obtained is not unreasonably cumulative or duplicative, or not otherwise reasonably obtainable.

C. ORDER FOR DISCOVERY. Upon motion for discovery by a party and determination that such motion should be granted, the Hearing Officer shall issue an order for the taking of such discovery together with any conditions and terms of the discovery.

D. SUBPOENAS. The Secretary has and may delegate to the Hearing Officer the power to issue subpoenas for the attendance and testimony of witnesses and the production of relevant documentary evidence.
[12-1-97]

206.-299. [Reserved]

300. SUBPART III - PARTICIPATION [12-1-97]

301. PARTICIPATION:

A. ENTRY OF APPEARANCE. Any person who wishes to be a party shall file, and serve upon all other parties of record, an Entry of Appearance, on or before the deadline set forth in the Notice of Hearing. A timely Statement of Intent to Present Technical

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Testimony shall be considered an Entry of Appearance, if the person filing such statement has not previously filed a separate Entry of Appearance.

B. EFFECT OF FAILURE TO FILE. Failure to file a timely Entry of Appearance shall preclude a person from being a party in the proceeding, but shall not preclude a person from presenting a general written or oral statement or non-technical testimony in the proceeding.

C. ORDERS FOR CONDUCT OF PROCEEDINGS. In proceedings under this Part, the Hearing Officer may conduct pre-hearing conferences and issue pre-hearing orders that are not inconsistent with these rules, for purposes including but not limited to expediting the disposition of the proceeding, discouraging unnecessary, duplicative or wasteful prehearing activities, formulating and simplifying issues, obtaining stipulations or admissions of fact or law, obtaining advance rulings regarding the admissibility of evidence, avoiding the presentation of unnecessary or cumulative evidence or motions and adopting special procedures for managing proceedings involving difficult or complex issues and/or large numbers of parties. With respect to proceedings involving large numbers of parties, the Hearing Officer may require that service of documents under Section 115.B be made on designated representatives of groups of parties with similar interests and may make such other orders as are consistent with this Subpart.
[12-1-97]

302. PROCEDURE FOR SUBMITTAL OF STATEMENTS AND TESTIMONY:

A. TECHNICAL WRITTEN STATEMENTS AND ORAL TESTIMONY. Any person who intends to provide a technical written statement or oral testimony concerning a Draft Permit, Application or Petition shall file a Statement of Intent to Present Technical Testimony on or before the deadline in the Notice of Hearing, but in no event later than fourteen (14) days prior to the hearing.

1. CONTENT OF STATEMENT OF INTENT. The Statement of Intent to Present Technical Testimony shall

- a.** identify the person filing the statement;
- b.** state whether the person filing the statement supports or opposes the Draft Permit, Application, or Petition, or in the case of the Division, the Division's recommended decision to approve, deny, or approve with conditions the Draft Permit, Application, or Petition;
- c.** identify each witness, including name, address, affiliation(s), and educational and work background;

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d. estimate the length of the direct testimony of each witness;

e. identify all exhibits which are part of the Record Proper and, for exhibits not part of the Record Proper, attach a copy;

f. list or make available all technical materials relied upon by each witness in making statement of technical of fact or opinion contained in his or her direct testimony; and

g. attach a summary of the testimony of each witness, stating any opinion(s) to be offered by such witness, and an explanation of the basis for such opinion(s).

2. EFFECT OF FAILURE TO FILE. Failure to file a timely Statement of Intent to Present Technical Testimony meeting the requirements of Section 302.A.1 shall preclude a person from presenting technical testimony, and if the person has not filed a timely Entry of Appearance, from being a party in the proceeding, but shall not preclude a person from presenting a general written or oral statement or non-technical testimony in the proceeding.

B. GENERAL WRITTEN AND ORAL STATEMENTS; NON-TECHNICAL TESTIMONY. Any person may provide a general written statement concerning the Draft Permit, Application, or Petition at or before the hearing. Any person may provide a general oral statement or non-technical testimony concerning the Draft Permit, Application, or Petition at the hearing.
[12-1-97]

303.-399. [Reserved]

400. SUBPART IV - HEARING PROCEDURES [12-1-97]

401. BURDEN OF PERSUASION; ORDER OF TESTIMONY; EVIDENCE REQUIRED:

A. BURDEN OF PERSUASION. The Applicant or Petitioner has the burden of proof that a permit, license, or variance should be issued and not denied. This burden does not shift. The Division has the burden of proof for a challenged condition of a permit or license which the Department has proposed. Any person who contends that a permit condition is inadequate, improper, or invalid, or who proposes to include a permit condition shall have the burden of going forward to present an affirmative case on the challenged condition.

B. ORDER OF TESTIMONY. Unless otherwise agreed to by the parties or ordered by the Hearing Officer, testimony shall be presented in the following order:

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1. testimony by, and examination of, the Applicant or Petitioner;
2. testimony by, and examination of, technical witnesses in support of the Draft Permit, Application, or Petition;
3. testimony by, and examination of, technical witnesses in opposition to the Draft Permit, Application, or Petition;
4. all other testimony or oral statement;
5. direct testimony by the parties, as appropriate, in the same order as testimony in the proceeding; and
6. rebuttal testimony by the parties, as appropriate, in the same order as testimony in the proceeding.

C. STANDARD FOR DECISION. The Hearing Officer shall determine each matter in controversy by a preponderance of the evidence.
[12-1-97]

402. EVIDENCE:

A. GENERAL. Except as otherwise provided in this subsection, the Hearing Officer shall admit all relevant evidence that is not unduly prejudicial or repetitious, or otherwise unreliable or of little probative value.

1. Evidence relating to settlement that would be excluded in the courts of New Mexico under SCRA 1986, § 11-408 is not admissible.

2. All privileges recognized in the courts of New Mexico shall be recognized to the same extent in proceedings under this Part.

3. No person shall be allowed to testify as an expert unless identified as a technical witness in a timely filed Statement of Intent to Present Technical Testimony.

B. EXAMINATION OF WITNESSES. All persons shall have an opportunity to examine witnesses at the hearing in the order set forth under Section 401.B. Witnesses shall be examined orally, under oath or affirmation, except as otherwise provided in this Part or by the Hearing Officer. The Hearing Officer may limit cross-examination to avoid harassment, intimidation, needless expenditure of time, or undue repetition. Technical information, including but not limited to data, studies, and tangible materials,

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shall not be offered or introduced during the examination of witnesses unless the technical information is in the Hearing Record, and was filed ~~in~~ or before the deadline for a Statement of Intent to Present Technical Testimony. Nothing in this Section shall be construed to limit the right of a party to offer or introduce technical information for impeachment or rebuttal.

C. **EXHIBITS.** Each exhibit offered in evidence shall be marked with a designation identifying the person by whom the exhibit is offered, and shall be numbered serially in the sequence in which offered. A series of exhibits illustrative of the same subject, such as a series of photographs or diagrams showing different aspects of the same activity, may be numbered with the same number and sequential letters (e.g., 1a, 1b, etc.). The Record Proper and any part thereof shall be evidence, and shall not be offered as exhibits at the hearing, but persons may use copies in the course of testimony. Unless otherwise ordered by the Hearing Officer:

1. A person offering an exhibit during the course of testimony shall provide a copy of the exhibit to each party.

2. The original of the following types of exhibits shall be replaced in the Hearing Record with the indicated substitute:

a. Charts, maps, diagrams, and photographs larger than 8½ by 11 inches which cannot be folded or rolled shall be replaced with paper copies of 8½ by 11 inches or larger which can be folded or rolled;

b. Photographic slides shall be replaced with photographic prints of 8½ by 11 inches or smaller or paper copies of 8½ by 11 inches;

c. Overhead projector slides shall be replaced with paper copies of 8½ by 11 inches;

d. Models, samples, and other non-documentary exhibits shall be replaced with photographic prints of 8½ by 11 inches or smaller, paper copies (of such photographic prints) of 8½ by 11 inches, or oral testimony describing the exhibits.

3. A person offering an exhibit for which a substitute is placed in the Hearing Record shall retain the original of the exhibit during the pendency of the proceeding, including any appeal(s), and shall, upon request, deliver the original of the exhibit to the Hearing Officer, Secretary, or court(s).

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D. OFFICIAL NOTICE. The Hearing Officer may take official notice of any matter that may be judicially noticed in the courts of New Mexico.

[12-1-97]

403. OBJECTIONS AND OFFERS OF PROOF:

A. OBJECTION. A party may make any objection concerning the conduct of the hearing which may be stated orally or in writing during the hearing. The party raising the objection shall supply a short statement of its grounds. The objection, the short statement of its grounds, and the ruling by the Hearing Officer shall be included in the written transcript or recorded tape of the proceeding.

B. OFFER OF PROOF. Whenever evidence is excluded, the person offering the evidence may make an offer of proof, which shall be included in the written transcript or recorded tape of the proceeding.

1. The offer of proof for excluded oral testimony shall consist of a brief statement describing the nature of the evidence excluded.

2. The offer of proof for an excluded exhibit shall consist of the insertion of the excluded exhibit in the written transcript or recorded tape of the proceeding.

3. Failure to make an offer of proof shall waive any error in the exclusion of evidence.

C. PREJUDICIAL ERROR. Where the Secretary decides that the ruling of the Hearing Officer in excluding the evidence was erroneous and prejudicial, the Secretary may remand the matter to the Hearing Officer for the taking of the excluded evidence, subject to examination and rebuttal, unless otherwise agreed to by the parties.

[12-1-97]

404.-499. [Reserved]

500. SUBPART V - POST HEARING PROCEDURES [12-1-97]

501. FILING THE TRANSCRIPT: The hearing shall be transcribed or tape-recorded verbatim. If the hearing is transcribed, the Hearing Clerk shall promptly notify all parties of the availability of the transcript. Any person desiring a copy of the transcript shall order a copy from the court reporter at his or her own expense. Any person desiring a copy of the hearing tapes shall arrange

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copying with the Hearing Clerk at his or her own expense.
[12-1-97]

502. PROPOSED FINDINGS AND CONCLUSIONS AND CLOSING ARGUMENT: Unless otherwise ordered by the Hearing Officer, any party may submit proposed findings of fact, conclusions of law, and closing argument within thirty (30) days after filing of the transcript. All submissions shall be in writing and shall contain adequate references to the Hearing Record and authorities relied upon. No new evidence shall be presented. [12-1-97]

503. HEARING OFFICER'S REPORT:

A. DEADLINE AND CONTENT. Unless otherwise provided by law or ordered by the Secretary, the Hearing Officer shall file a report within thirty (30) days after expiration of the period under Section 502. The report shall contain the Hearing Officer's findings of fact, conclusions of law, recommended decision, and proposed final order.

B. COMMENT ON HEARING OFFICER'S REPORT. Unless otherwise ordered by the Secretary, a party may file comments on the Hearing Officer's Report, including argument for or against the Hearing Officer's Report or for or against modification of the Hearing Officer's Report, within fifteen (15) days after service of the Hearing Officer's Report. No new evidence shall be presented.

C. ARGUMENT BEFORE THE SECRETARY. The Secretary may allow oral argument on the Hearing Officer's Report. A request for oral argument shall be filed no later than the expiration of the period under Section 503.B. If oral argument is allowed, the Secretary shall notify the parties in writing regarding the time and place for oral argument, after giving due consideration to the convenience of the parties and to the deadline for issuance of the final order specified in Section 504.
[12-1-97]

504. FINAL ORDER BY SECRETARY:

A. DEADLINE. Unless otherwise provided by law or by order of the Secretary, the Secretary shall file a final order no later than thirty (30) days after the expiration of the applicable deadline in Section 503.

B. ORDER. The Secretary may adopt, modify, or set aside the Hearing Officer's recommended decision, and shall set forth in the final order the reasons for the action taken.

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STATE DEPARTMENT
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NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD
P.O. BOX 26110/1190 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87503

TITLE 20	ENVIRONMENTAL PROTECTION
CHAPTER 4	HAZARDOUS WASTE
PART 1	HAZARDOUS WASTE MANAGEMENT

SUBPART I - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

101. **ADOPTION OF 40 CFR PART 260.** Except as otherwise provided, the regulations of the United States Environmental Protection Agency ("EPA") set forth in 40 CFR Part 260 through July 1, 1995 are hereby incorporated as Subpart I of this Part. [6-9-89 . . .01-01-97; 03-01-97]

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TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 4 HAZARDOUS WASTE
PART 1 HAZARDOUS WASTE MANAGEMENT

SUBPART I - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

5. **EFFECTIVE DATE:** September 23, 1994, unless a later date is cited at the end of a section or paragraph. [9-23-89 ... 01-01-97]

101. **ADOPTION OF 40 CFR PART 260.** Except as otherwise provided, the regulations of the United States Environmental Protection Agency ("EPA") set forth in 40 CFR Part 260 through July 1, 1996 are hereby incorporated as Subpart I of this Part. [6-9-89 ... 01-01-97]

102. **MODIFICATIONS AND EXCEPTIONS.** Except as otherwise provided, the following modifications and exceptions are made to the incorporated federal regulations:

D. Wherever there is any requirement in any of the federal regulations incorporated into this Part to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Department via the New Mexico 24-hour emergency response number at (505) 827-9329. [6-9-89 ... 01-01-97]

SUBPART II - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

200. **ADOPTION OF 40 CFR PART 261.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 261 through July 1, 1995 are hereby incorporated as Subpart II of this Part. [6-9-89 ... 01-01-97]

SUBPART III - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

300. **ADOPTION OF 40 CFR PART 262.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 262 through July 1, 1995 are hereby incorporated as Subpart III of this Part. [6-9-89 ... 01-01-97]

**SUBPART IV - STANDARDS APPLICABLE TO TRANSPORTERS OF
HAZARDOUS WASTE**

400. ADOPTION OF 40 CFR PART 263. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 263 through July 1, 1995 are hereby incorporated as Subpart IV of this Part. [6-9-89 . . . 01-01-97]

**SUBPART V - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE
TREATMENT, STORAGE AND DISPOSAL FACILITIES**

500. ADOPTION OF 40 CFR PART 264. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 264 through July 1, 1995 are hereby incorporated as Subpart V of this Part. The substitution of the term "EPA" in Subpart I does not apply to the required notice set forth in 40 CFR Section 264.12(a), as adopted in this Part. [6-9-89 . . . 01-01-97]

**SUBPART VI - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF
HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL
FACILITIES**

600. ADOPTION OF 40 CFR PART 265. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 265 through July 1, 1995 are hereby incorporated as Subpart VI of this Part. The substitution of the term "EPA" in Subpart I does not apply to the required notice set forth in 40 CFR Section 265.12(a), as adopted in this Part. [6-9-89 . . . 01-01-97]

**SUBPART VII - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS
WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE
MANAGEMENT FACILITIES**

700. ADOPTION OF 40 CFR PART 266. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 266 through July 1, 1995 are hereby incorporated as Subpart VII of this Part. [6-9-89 . . . 01-01-97]

SUBPART VIII - LAND DISPOSAL RESTRICTIONS

800. ADOPTION OF 40 CFR PART 268. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 268 through July 1, 1995 are hereby incorporated as Subpart VIII of this Part. The substitution of term "EPA" in Subpart I does not apply to 40 CFR §268.1(e)(3), as adopted in this Part. [6-9-89 . . . 01-01-97]

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SUBPART IX - THE HAZARDOUS WASTE PERMIT PROGRAM

900. **ADOPTION OF 40 CFR PART 270.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 270 through July 1, 1995 are hereby incorporated as Subpart IX of this Part. The substitution of the terms "EPA," "Regional Administrator" and "Administrator" in Subpart I does not apply to 40 CFR §270.5, §270.10(f)(2)&(3), §270.10(g)(1)(i), §270.11(a)(3), §270.32(c), §270.72(a)(5), and §270.72(b)(5), as adopted in this Part. [6-9-89 . . . 01-01-97]

SUBPART X - STANDARDS FOR UNIVERSAL WASTE MANAGEMENT

1000. **ADOPTION OF 40 CFR PART 273.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 273 through July 1, 1995 are hereby incorporated as Subpart X of this Part. [01-01-97]

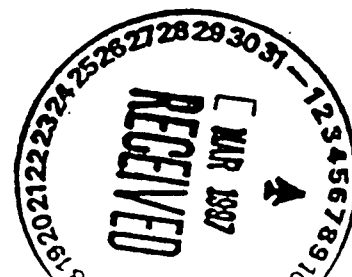
1001. **MODIFICATIONS AND EXCEPTIONS.** The term "Regional Administrator" and "EPA" as used in 40 CFR §273.12 and §273.32 shall mean, as applicable to generators of universal waste pesticides under this Part, notification to the Secretary of the New Mexico Department of Agriculture. [01-01-97]

SUBPART XI. MISCELLANEOUS

1106. **EFFECT OF STAY OR INVALIDATION OF INCORPORATED FEDERAL REGULATION.** If any federal regulation incorporated by reference in this Part is stayed, invalidated, or otherwise rendered unenforceable by EPA, in whole or in part, by action of a federal court or by the EPA, such incorporated federal regulation shall be enforceable by the Department only to the extent it is enforceable by EPA. [2-11-91, 01-01-97]

1107. **AMENDMENT AND SUPERSESSON OF PRIOR REGULATIONS.** This Part amended and superseded the Hazardous Waste Management Regulations, EIB/HWMR-7, filed October 21, 1992. This Part has been amended effective November 1, 1995 and January 1, 1997. [6-9-89 . . . 01-1-97]

1108. **SAVING CLAUSE.** Amendment and supersession of EIB/HWMR-7 and this Part shall not affect any administrative or judicial enforcement action pending on the effective date of such amendment nor the validity of any permit issued pursuant to EIB/HWMR-7 or this Part. [6-9-89 . . . 01-1-97]



NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD
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TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 4 HAZARDOUS WASTE
PART 1 HAZARDOUS WASTE MANAGEMENT

SUBPART I - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. ISSUING AGENCY: Environmental Improvement Board. [9-23-94]
2. SCOPE: All persons that generate, store, transport, or dispose of hazardous waste. [9-23-94]
3. STATUTORY AUTHORITY: NMSA 1978, Sections 74-1-8 and 74-4-4 (Repl. Pamp. 1993). [9-23-94, 11-1-95]
4. DURATION: Permanent. [9-23-94]
5. EFFECTIVE DATE: September 23, 1994, unless a later date is cited at the end of a section or paragraph. [9-23-89, 11-1-95, 01-01-97]
6. OBJECTIVE: The objective of Part 1 of Chapter 4 is to establish regulations for the management of hazardous waste, including standards for the identification and listing of hazardous waste, for generators and transporters of hazardous waste, for owners and operators of hazardous waste treatment, storage, and disposal facilities, for specific wastes and such facilities, for land disposal restrictions, and for issuing, suspending, revoking, or modifying permits. [9-23-94, 11-1-95]
7. - 100. [Reserved]
101. ADOPTION OF 40 CFR PART 260. Except as otherwise provided, the regulations of the United States Environmental Protection Agency ("EPA") set forth in 40 CFR Part 260 through July 1, 1995 are hereby incorporated as Subpart I of this Part. [6-9-89 . . . 03-01-97]
102. MODIFICATIONS AND EXCEPTIONS. Except as otherwise provided, the following modifications and exceptions are made to the incorporated federal regulations:
 - A. The following terms defined in 40 CFR §260.10 and §270.2 have the meanings set forth herein, in lieu of the meanings

set forth in 40 CFR §260.10 and §270.2:

1. "Administrator" or "Regional Administrator" means the Secretary of the New Mexico Environment Department or his/her designee;

2. "Act or "RCRA" (Resource Conservation and Recovery Act, as amended) means the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14 (Repl. Pamp. 1993). [6-9-89 . . . 11-1-95]

B. The following terms not defined in 40 CFR §260.10 and §270.2 have the meanings set forth herein when the terms are used in this Part:

1. "Appropriate act or regulation" means the New Mexico Hazardous Waste Act or 20 NMAC 4.1;

2. "Board" means the Environmental Improvement Board;

3. "CFR" means the Code of Federal Regulations;

4. "Department" means the New Mexico Environment Department;

5. "Environmental Protection Agency" or "EPA" shall be construed to mean the New Mexico Environment Department except when used in the phrases "EPA hazardous waste number," "EPA identification number," "EPA Region," "EPA Acknowledgment of Consent," "EPA Test Methods," and in the definitions set forth in 40 CFR §260.10 and §270.2;

6. "Freedom of Information Act" or "FOIA" means NMSA 1978, §§14-2-1 through 14-2-12, 14-3A-1 through 14-3A-2, and Section 74-4-4.3D;

7. "Hazardous substance incident" means any emergency incident involving a chemical or chemicals, including but not limited to transportation wrecks, accidental spills or leaks, fires or explosions, which incident creates the reasonable probability of injury to human health or property;

8. "Secretary" means the Secretary of the New Mexico Environment Department or his/her designee; and

9. "Subtitle C of RCRA" means the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14

(Repl. Pamp. 1993). [6-9-89 . . . 11-1-95]

C. The following provisions of 40 CFR Part 260 are omitted from Subpart I of this Part:

1. §260.1(b)(6);
2. §260.20;
3. §260.22;
4. §260.30;
5. §260.31;
6. §260.32; and
7. §260.33. [6-9-89 . . . 11-1-95]

D. Wherever there is any requirement in any of the federal regulations incorporated into this Part to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Department via the New Mexico 24-hour emergency response number at (505) 827-9329. [6-9-89 ... 01-01-97]

103. - 199. [Reserved]

SUBPART II - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

200. ADOPTION OF 40 CFR PART 261. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 261 through July 1, 1995 are hereby incorporated as Subpart II of this Part. [6-9-89 . . . 01-01-97]

201. - 299. [Reserved]

SUBPART III - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

300. ADOPTION OF 40 CFR PART 262. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 262 through July 1, 1995 are hereby incorporated as Subpart III of this Part. [6-9-89 . . . 01-01-97]

301. OMISSIONS. The following provision of 40 CFR Part 262 is omitted from Subpart III of this Part:

A. §262.51-57. [11-1-95]

302.- 399. [Reserved]

**SUBPART IV - STANDARDS APPLICABLE TO TRANSPORTERS OF
HAZARDOUS WASTE**

400. **ADOPTION OF 40 CFR PART 263.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 263 through July 1, 1995 are hereby incorporated as Subpart IV of this Part. [6-9-89 . . . 01-01-97]

401. **OMISSIONS.** The following provisions of 40 CFR Part 263 are omitted from Subpart IV of this Part:

A. §263.20(e). [6-1-89]

402. - 499. [Reserved]

**SUBPART V - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE
TREATMENT, STORAGE AND DISPOSAL FACILITIES**

500. **ADOPTION OF 40 CFR PART 264.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 264 through July 1, 1995 are hereby incorporated as Subpart V of this Part. The substitution of the term "EPA" in Subpart I does not apply to the required notice set forth in 40 CFR Section 264.12(a), as adopted in this Part. [6-9-89 . . . 01-01-97]

501. **OMISSIONS.** The following provisions of 40 CFR Part 264 are omitted from Subpart V of this Part:

A. §264.149;

B. §264.150; and

C. §264.301(1). [6-9-89 . . . 11-1-95]

502. - 599. [Reserved]

**SUBPART VI - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF
HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL
FACILITIES**

600. **ADOPTION OF 40 CFR PART 265.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 265 through July 1, 1995 are hereby incorporated as Subpart VI of this Part.

The substitution of the term "EPA" in Subpart I does not apply to the required notice set forth in 40 CFR Section 265.12(a), as adopted in this Part. [6-9-89 . . . 01-01-97]

601. OMISSIONS. The following provisions of 40 CFR Part 265 are omitted from Subpart VI of this Part:

A. §265.149; and

B. §265.150. [6-9-89]

602. - 699. [Reserved]

SUBPART VII - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

700. ADOPTION OF 40 CFR PART 266. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 266 through July 1, 1995 are hereby incorporated as Subpart VII of this Part. [6-9-89 . . . 01-01-97]

701 - 799. [Reserved]

SUBPART VIII - LAND DISPOSAL RESTRICTIONS

800. ADOPTION OF 40 CFR PART 268. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 268 through July 1, 1995 are hereby incorporated as Subpart VIII of this Part. The substitution of term "EPA" in Subpart I does not apply to 40 CFR §268.1(e)(3), as adopted in this Part. [6-9-89 . . . 01-01-97]

801. - 899. [Reserved]

SUBPART IX - THE HAZARDOUS WASTE PERMIT PROGRAM

900. ADOPTION OF 40 CFR PART 270. Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 270 through July 1, 1995 are hereby incorporated as Subpart IX of this Part. The substitution of the terms "EPA," "Regional

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Administrator" and "Administrator" in Subpart I does not apply to 40 CFR §270.5, §270.10(f)(2)&(3), §270.10(g)(1)(i), §270.11(a)(3), §270.32(c), §270.72(a)(5), and §270.72(b)(5), as adopted in this Part. [6-9-89 . . . 11-1-95]

901. PERMITTING PROCEDURES.

A. Permit Issuance or Denial.

1. Once an application is determined to be administratively and technically complete, the Secretary shall prepare and issue either a Draft Permit or a Notice of Intent to Deny. [6-9-89 . . . 11-1-95]

a. A Draft Permit shall contain all conditions, compliance schedules, monitoring requirements and technical standards for treatment, storage, and/or disposal provided for in 40 CFR Part 270. [6-9-89]

b. A Notice of Intent to Deny shall state the Secretary's reasons for the intended denial. [6-9-89]

2. Any Draft Permit or Notice of Intent to Deny prepared by the Department under §902.A.1 of this Part shall be accompanied by a fact sheet and shall be based on the administrative file. Copies of the fact sheet shall be sent to the applicant; to any state or federal agency, as applicable; and, upon request, to any other person. [6-9-89 . . . 11-1-95]

3. The Secretary shall give public notice that a Draft Permit or a Notice of Intent to Deny has been prepared, and shall allow forty-five (45) days for review and public comment, including requests for public hearing. [6-9-89 . . . 10-21-92]

4. If the Secretary issues a Draft Permit, and a timely written notice of opposition to the Draft Permit and a request for a public hearing is received, the Department, acting in conjunction with the applicant, will respond to the request in an attempt to resolve the issues giving rise to the opposition. If such issues are resolved to the satisfaction of the opponent, the opponent may withdraw the request for a public hearing. [6-8-89 . . . 10-21-92]

5. No ruling shall be made on permit issuance or denial without an opportunity for a public hearing, at which all interested persons shall be given a reasonable chance to submit significant data, views or arguments orally or in writing and to examine witnesses testifying at the public hearing. A public hearing shall be scheduled if:

a. the Secretary issues a Notice of Intent to Deny, and a timely request for public hearing is received from the applicant;

b. the Secretary issues a Draft Permit, a timely request for public hearing is received from any person opposed to the granting of a permit, and such person does not subsequently withdraw the request pursuant to §902.A.4 of this Part; or,

c. the Secretary determines, no later than five (5) days following the end of the comment period specified in §902.A.3 of this Part, that a public hearing should be held notwithstanding the absence of a timely request for public hearing. [6-9-89 . . . 11-1-95]

6. The comment period specified in §902.A.3 of this Part shall automatically be extended to the close of any public hearing. [6-9-89 . . . 11-1-95]

7. The Secretary shall give due consideration and the weight he/she deems appropriate to all comments received during a public comment period and to all relevant facts and circumstances presented at a public hearing. [6-9-89 . . . 10-21-92]

8. When ruling on permit issuance or denial, the Secretary may disapprove in whole or in part, or make reasonable conditions to any permit, if it appears that the permit applied for will not meet the requirements of these regulations. [6-9-89 . . . 10-21-92]

9. At the time that any final permit decision is issued, the Secretary shall issue a response to comments. This response shall:

a. specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change;

b. briefly describe and respond to all comments on the draft permit or the permit application raised during the public comment period, or during any hearing, and

c. be available to the public. [6-9-89 . . . 11-1-95]

10. A final permit decision shall become effective thirty (30) days after notice of the decision has been served on the applicant, or such later time as the

Secretary may specify. This provision shall not be construed to extend the time for appeal of a permit decision as provided by the Hazardous Waste Act. [6-9-89 . . . 10-21-92]

11. The approval of a permit does not relieve any person from the responsibility of complying with applicable state or federal laws and regulations. [6-9-89, 12-11-89]

12. The Secretary shall notify the applicant by certified mail of any impending permit action and of any scheduled public hearing date. [6-9-89 . . . 10-21-92]

B. Permit Modifications, Suspension and Revocation.

1. The Secretary may modify, suspend, or revoke a permit issued pursuant to §902.A of this Part for cause set forth in 40 CFR Part 270 and the Act. [6-9-89 . . . 11-1-95]

2. The Secretary may modify, suspend, revoke any permit upon his/her initiative, or if, after the Department's investigation of the facts and circumstances, pursuant to the request of any interested person, such permit action is deemed warranted. [6-9-89 . . . 10-21-92]

3. Requests for permit modification, suspension, revocation shall be in writing and shall contain facts or reasons supporting the request. [6-9-89 . . . 12-1-95]

4. If the Secretary decides that the request is not justified, the permittee will be notified in writing explaining the reason for denial. Denial of request of modification, revocation, and reissuance, or termination are not subject to public notice, comment, or hearings. [6-9-89 . . . 10-21-92]

5. If the Secretary decides to modify or revoke and reissue a permit under 40 CFR §270.41 or 40 CFR §270.42, a draft permit shall be prepared incorporating the proposed changes. The Secretary may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of a revoked and reissued permit the Secretary shall require the submission of a new application. [6-9-89 . . . 11-1-95]

6. In a permit modification under this section, only those conditions to be modified shall be reopened. All other aspects of the existing permit shall remain in

effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and were being reissued. During any revocation and reissuance proceeding the permittee shall comply with all conditions of the exiting permit until a new final permit is reissued. [6-9-89 . . . 11-1-95]

7. If the Secretary decides to terminate a permit under 40 CFR §270.43, a notice of intent to terminate shall be issued. The Secretary shall follow the applicable procedures as required for a Draft Permit under Section 902 of this Part. [6-9-89 . . . 11-1-95]

C. Public Notices.

1. Public notice of issuance of a Draft Permit or a Notice of Intent to Deny, and of any public hearing scheduled, shall be given by publication of a notice in a newspaper of general circulation in the area affected, broadcasts over local radio stations and by mailing a copy of the notice to permit applicant, those individuals on the Department mailing list of persons interested in hazardous waste permit actions, and to any unit of local, state and federal government as may be applicable. [6-9-89 . . . 10-21-92]

2. All public notices issued shall contain the following minimum information:

a. The subject, the time and place of any scheduled hearing and the manner in which interested persons may present their views;

b. A brief description of the procedures by which requests for hearings may be made, unless already scheduled;

c. The name and address of the office processing the permit action for which notice is being given;

d. The name and address of the permittee or permit applicant, and, if different, of the facility or activity regulated by the permit;

e. A brief description of the business conducted at the facility or activity described in the permit application or the draft permit;

f. The name, address and telephone number of a person from whom interested persons may obtain

further information;

g. In addition, public notice of a scheduled public hearing shall also contain references to the dates of previous public notices relating to the permit;

h. The notice shall state where interested persons may secure copies of any proposed Draft Permit or Notice of Intent to Deny. [6-9-89 . . . 10-21-92]

D. Fact Sheet.

1. A fact sheet shall be prepared for every Draft Permit for a hazardous waste management facility or activity. The fact sheet shall briefly set forth the principal facts and the significant factual legal, methodological and policy questions considered in preparing the Draft Permit. [6-9-89 . . . 10-21-92]

2. The fact sheet shall include, when applicable:

a. A brief description of the type of facility or activity which is the subject of the Draft Permit;

b. The type and quantity of wastes which are proposed to be or are being treated, stored, disposed, injected, emitted, or discharged.

c. A brief summary of the basis for the Draft Permit conditions including references to applicable statutory or regulatory provisions.

d. Reasons why any request variance or alternative to require standards do or do not appear justified.

e. A description of the procedures for reaching a final decision on the Draft Permit including:

(1) The beginning and ending dates of the comment period and the address where comments will be received;

(2) Procedures for requesting a hearing and the nature of that hearing; and

(3) Any other procedures by which the public may participate in the final decision.

f. Name and telephone number of a person to contact for additional information. [6-9-89 . . . 2-11-91]

3. The fact sheet shall be available at the time the public notice is published. [6-9-89]

E. Hearings.

1. Public notice of any public hearing shall be given at least thirty (30) days prior to the scheduled date of the hearing and shall state the subject. [6-9-89, 2-11-91]

2. Hearings shall be held in Santa Fe or within any area of the state substantially affected by the proceedings as specified by the Secretary. [6-9-89, 2-11-91]

3. The Secretary may designate a hearing officer to take evidence at the hearing. [6-8-89, 2-11-91]

4. All hearings shall be recorded by a certified court reporter. A transcript will be furnished to all persons for review at the Department's main office. Costs of a copy of a transcript will be borne by those requesting such copies. [6-9-89, 2-11-91]

5. In hearings, the rules of civil procedure and the technical rules of evidence shall not apply, but the hearings shall be conducted so that all relevant views, arguments, and testimony are amply and fairly received without undue repetition. [6-9-89, 2-11-91]

a. Testimony for hearings on permit issuance or modification shall be presented in the following order:

(1) testimony by the applicant (such testimony is a prerequisite to the granting of the requested permit or modification);

(2) testimony by other persons (except the Department) supporting issuance or modification of the permit, in any reasonable order;

(3) testimony by persons (except the Department) opposed to issuance or modification of the permit, in any reasonable order;

(4) testimony by the Department; and

(5) rebuttal testimony, as appropriate. [6-9-89, 2-11-91]

b. Testimony for hearings on permit suspension or revocation shall be as follows:

(1) testimony by Department;

(2) testimony by other persons supporting suspension or revocation of the permit, in any reasonable order;

(3) testimony by the permittee;

(4) testimony by other persons opposed to suspension or revocation of the permit, in any reasonable order; and

(5) rebuttal testimony, as appropriate. [6-9-89, 2-11-91]

c. In all hearings, cross examination of each witness shall be conducted by interested persons, in any reasonable order, immediately after that witness has testified. [6-9-89, 2-11-91]

6. The burden of proof at hearings shall be as follows:

a. For hearings on permit issuance or modifications, the burden of proof shall be on the applicant or permittee.

b. For hearings on permit suspension or revocation, the burden of proof shall be on the Department. [6-9-89, 2-11-91]

F. Secretary's Decision.

1. Any person heard or represented at the hearing shall be given written notice of the action of the Secretary. [6-9-89, 2-11-91]

2. The Secretary shall notify the applicant or permittee of his/her decision and the reasons therefore by certified mail. [6-9-89, 2-11-91]

G. Appeals. Appeals of the Secretary's decision shall be as provided by the Hazardous Waste Act. [2-11-91, 10-21-92]

1. The filing of an appeal does not act as a stay of any action required by the Secretary's decision. [2-11-91,

10-21-92]

2. The record on appeal shall include the transcript of the hearing, all related correspondence, any responses to comments, and all other information relied upon by the Secretary in deciding upon the permit action. [2-11-91, 10-21-92]

902. - 999. [Reserved]

SUBPART X - STANDARDS FOR UNIVERSAL WASTE MANAGEMENT

1000. **ADOPTION OF 40 CFR PART 273.** Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 273 through July 1, 1995 are hereby incorporated as Subpart X of this Part. [01-01-97]

1001. **MODIFICATIONS AND EXCEPTIONS.** The term "Regional Administrator" and "EPA" as used in 40 CFR §273.12 and §273.32 shall mean, as applicable to generators of universal waste pesticides under this Part, notification to the Secretary of the New Mexico Department of Agriculture. [01-01-97]

1002.-1100. [Reserved]

SUBPART XI. MISCELLANEOUS

1101. **COMPLIANCE WITH OTHER REGULATIONS.** Compliance with this Part does not relieve a person of the obligation to comply with all other applicable state and federal regulations. If the EPA should suspend any federal hazardous waste regulation having a direct counterpart to these regulations, the counterpart in these regulations shall be deemed suspended without any further action being taken. [6-9-89, 9-23-94]

1102. **CONSTRUCTION.** This Part shall be liberally construed to effectuate the purpose of the Act. [6-9-89]

1103. **REFERENCE TO 40 CFR PART 124.** Reference to any provisions of 40 CFR Part 124 within the text of any other provision of 40 CFR as adopted by this Part shall be construed to mean the corresponding provision of §901 of this Part. [2-11-91, 10-21-92]

1104. **REFERENCE TO 40 CFR PART 280.** Reference to any provisions of 40 CFR Part 280 within the text of any other provision of 40 CFR as adopted by this Part shall be construed to mean the New Mexico Underground Storage Tank Regulations, 20 NMAC 5.1 - 5.16. [9-23-94]

1105. SEVERABILITY. If any provision or application of this Part is held invalid, the remainder, or its application to other situations or persons, shall not be affected. [6-9-89]

1106. EFFECT OF STAY OR INVALIDATION OF INCORPORATED FEDERAL REGULATION. If any federal regulation incorporated by reference in this Part is stayed, invalidated, or otherwise rendered unenforceable by EPA, in whole or in part, by action of a federal court or by the EPA, such incorporated federal regulation shall be enforceable by the Department only to the extent it is enforceable by EPA. [2-11-91, 01-01-97]

1107. AMENDMENT AND SUPERSESSION OF PRIOR REGULATIONS. This Part amended and superseded the Hazardous Waste Management Regulations, EIB/HWMR-7, filed October 21, 1992. This Part has been amended effective November 1, 1995 and January 1, 1997. [6-9-89 . . . 01-1-97] 1108. SAVING CLAUSE. Amendment and supersession of EIB/HWMR-7 and this Part shall not affect any administrative or judicial enforcement action pending on the effective date of such amendment nor the validity of any permit issued pursuant to EIB/HWMR-7 or this Part. [6-9-89 . . . 01-1-97]

1109. AVAILABILITY OF MATERIALS INCORPORATED BY REFERENCE. Materials incorporated by reference into this Part may be reviewed at the New Mexico Hazardous and Radioactive Materials Bureau, 2044 Galisteo, Santa Fe, New Mexico 87505. [11-1-95]

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ENVIRONMENTAL IMPROVEMENT BOARD
P.O. BOX 26110/1190 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87502
(505) 827-2842

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 4 HAZARDOUS WASTE
PART 2 HAZARDOUS WASTE FEES

SUBPART I
GENERAL PROVISIONS

100. ISSUING AGENCY. Environmental Improvement Board. [11-30-95]

101. SCOPE. This Part applies to persons required to obtain a permit for the storage, treatment, or disposal of hazardous waste. [11-30-95]

102. STATUTORY AUTHORITY. NMSA 1978, Section 74-4-4.2.J directs the board to provide for a schedule fees for businesses seeking a permit for the management of hazardous waste. [11-30-95]

103. DURATION. Permanent. [11-30-95]

104. EFFECTIVE DATE. November 30, 1995. [11-30-95]

105. OBJECTIVE. The objective of Part 2 of Chapter 4 is to provide a schedule of fees for a hazardous waste permit application to cover but not exceed the estimated cost of investigating the application and issuing the permit. [11-30-95]

106. AMENDMENT AND SUPERSESION OF PRIOR REGULATIONS. This Part shall be construed as amending and superseding the Hazardous Waste Fee Regulations, EIB/HWFR-1, filed October 28, 1988. All references to the Hazardous Waste Fee Regulations in any other rule shall be construed as a reference to this Part. [11-30-95]

107. SAVING CLAUSE. Supersession of the Hazardous Waste Fee Regulations shall not affect any administrative or judicial enforcement action pending on the effective date of this Part. [11-30-95]

108. DEFINITIONS. [11-27-88]

A. Unless manifestly inconsistent herewith, other words and phrases in this Part shall have the same meaning as used in 40 CFR Section 260.10. [11-27-88; 11-30-95]

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B. "Unit" means "hazardous waste management unit" as defined in 40 CFR Section 260.10. [11-27-88]

109. - 199. [RESERVED]

SUBPART II FEE SCHEDULES

200. BASIC PERMIT. [11-27-88]

A. There are numerous subjects common to all permits. They are described fully in 20 NMAC 4.1, Hazardous Waste Management, and include but are not limited to, waste analysis, security, inspections, training, contingency planning and closure. Additionally, 20 NMAC 4.1 imposes conditions applicable to all permits, such as duties to comply and mitigate, entry of state officials and access to records. The basic permit therefore contains all these requirements. [11-27-88; 11-30-95]

B. A permit for a facility which generates a regulated waste and also stores, treats or disposes of that waste will address both generation requirements and the appropriate storage, treatment or disposal requirements. [11-27-88]

C. The permit fees are as listed in the following table:

Basic Permit Fees

Without Groundwater Monitoring	\$10,000
* With Groundwater Monitoring No Escape Of Hazardous Constituents	\$13,000
* With Groundwater Monitoring Unknown Escape of Hazardous Constituents	\$15,000
* Additional On-Site Generation Points	\$ 2,000

[11-27-88; 11-30-95]

201. STORAGE PERMIT. Any applicant who wishes to store hazardous wastes must have a storage permit. Each storage unit must be addressed in the permit. Each location, quantity of wastes stored and the impact thereof on the basic permit and the specific requirements of this Part shall be evaluated. The permit fees are as listed in the following table:

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Storage Unit Fees

First Storage Unit	\$ 5,000
Each Additional Identical Unit	\$ 3,500
Each Additional Dissimilar Unit	\$ 5,000
[11-27-88; 11-30-95]	

202. TREATMENT PERMIT. Any applicant who wishes to treat hazardous wastes must have a treatment permit. Each treatment unit must be addressed in the permit. Each type of treatment technology for which application is made shall be evaluated and specified in the permit. Dissimilar treatment technologies shall be considered as separate units in the permit. The permit fees are as listed in the following table:

Treatment Unit Fees

Chemical Treatment

First Unit	\$ 8,000
Each Additional Identical Unit	\$ 5,500
Each Additional Dissimilar Unit	\$ 8,000

Incinerators

First Unit	\$50,000
Each Additional Identical Unit	\$15,000
Each Additional Dissimilar Unit	\$50,000

Open Burn/Open Detonation

First Unit	\$ 5,000
Each Additional Identical Unit	\$ 5,000
Each Additional Dissimilar Unit	\$ 5,000

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Other Technology

First Unit	\$ 8,000
Each Additional Identical Unit	\$ 6,000
Each Additional Dissimilar Unit	\$ 8,000

[11-27-88; 11-30-95]

203. DISPOSAL PERMIT. Any applicant who wishes to dispose of hazardous wastes must have a disposal permit. Each disposal unit must be addressed in the permit. Each type of disposal technology for which application is made shall be evaluated and specified in the permit. Dissimilar disposal technologies shall be considered as separate units in the permit. The permit fees are as listed in the following table:

Disposal Unit Fees**Landfills or Surface Impoundments**

First Unit	\$11,000
Each Additional Identical Unit	\$ 7,000
Each Additional Dissimilar Unit	\$11,000

Land Treatment

First Unit	\$10,000
Each Additional Identical Unit	\$ 8,000
Each Additional Dissimilar Unit	\$10,000

[11-27-88; 11-30-95]

204. POST-CLOSURE CARE PERMIT. [11-27-88]

A. After land disposal units are closed they will be monitored for integrity under a post-closure care permit. Not all portions of the basic permit are applicable to the post-closure care period and others are applicable in a modified manner. [11-27-88]

B. If a facility has multiple units it is also possible that the permit may have to address operating units as well as post-closure care of closed units. The permit fees are listed in the following table:

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Post-Closure Care Permit Fees

	First Unit	Each Additional Similar Unit	Each Additional Dissimilar Unit
As part of an operating facility.			
With escaped hazardous constituents	\$ 8,000	\$ 5,000	\$ 8,000
Without escaped hazardous constituents	\$ 6,000	\$ 3,000	\$ 6,000
Without operating units for the facility.			
With escaped hazardous constituents	\$50,000	\$20,000	\$50,000
Without escaped hazardous constituents	\$35,000	\$15,000	\$35,000

Note: If post-closure care is the only permit activity the fee is independent and not in addition to the basic permit fee.

[11-27-88; 11-30-95]

205. PERMIT RENEWALS. [11-27-88]

A. Facilities which wish to continue to operate under the Hazardous Waste Act must renew the permit in accordance with 20 NMAC 4.1, Hazardous Waste Management. At the time of renewal the permit is reevaluated in light of technological, legal and regulatory standards in effect at the time of renewal. Therefore, permit renewals are subject to the same fees as initial applications. [11-27-88; 11-30-95]

B. Pursuant to 20 NMAC 4.1, the duration of a permit may not extend longer than a period of ten (10) years. In order for facilities to proceed without an interruption to their permit it will be necessary for a facility to apply for a permit renewal in compliance with 20 NMAC 4.1. [11-27-88; 11-30-95]

206. PERMIT MODIFICATIONS. [11-27-88]

A. **Partial Permits.** Permit applications for less than an entire facility will be processed and charged in the manner

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described above. Subsequent permit modifications which add units will be charged as new permits. [11-27-88]

B. Modifications of Permit Conditions.

1. Permit modifications classified as minor by 20 NMAC 4.1, Hazardous Waste Management, may be accomplished with minimum file review and administrative support. Minor modifications will be subject to a fee of \$1,000.

2. Permit modifications classified as major by 20 NMAC 4.1, Hazardous Waste Management, require extensive staff time and administrative effort to review the impact of the modification on the permit. Major modifications will therefore be charged at the basic permit fee plus the applicable unit fee from the tables in Sections 201 through 203.

[11-27-88; 11-30-95]

207. EXPANDED PUBLIC PARTICIPATION PERMITS. The Act requires that permit applicants be evaluated with inputs solicited from the public. The 1984 amendment to the federal hazardous waste law (Public Law 94-580) requires that facility permits which have a substantial impact or generate considerable public interest, be subject to extra efforts to solicit public participation in the permit process. This additional effort requires significant staff time, without regard to the number or type of units to be permitted. Therefore a fee is based only on the designation of permit as one of expanded public participation. The fee is additive to the other fees and shall be four thousand dollars (\$4,000). [11-27-88; 11-30-95]

208. PERMIT APPLICATION REVISIONS. Occasionally the applicant may wish to revise the application after it has been deemed administratively complete but before a draft permit has been advertised for public review. Such revisions may be due to changes in operating practices, in response to regulatory changes or for the addition or deletion of operating units for which a permit had been sought. [11-27-88]

A. Revisions deemed minor by the Department may be made without charge. Minor revisions are ones which do not require detailed analysis. Examples are changes to lists or names or equipment, revision of closure and/or post-closure cost estimates and deletion of operating units for which a permit had originally been sought. [11-27-88; 11-30-95]

B. Revisions deemed extensive by the Department shall be assessed a fee at the time the revision is presented to the Department. Fees for extensive revisions shall be twenty percent

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of the fee for the basic permit described in Section 202 above, plus the fee from the tables in Sections 201 through 204 for units which are added to the application and/or twenty-five percent (25%) of the fee previously assessed for the unit(s) for which the application is revised. [11-27-88; 11-30-95]

209. PERMIT FEE WORKSHEET.

FACILITY NAME _____

EPAID NUMBER _____

NM _____

PERMITTED ACTIVITY
(By Unit) _____

GROUNDWATER MONITORING? YES _____

NO _____

ESCAPED CONSTITUENTS? YES _____

NO _____

PUBLIC PARTICIPATION? YES _____

NO _____

FEE CALCULATION**REMARKS**

BASIC PERMIT

\$ _____

OPERATING UNIT 1 _____

OPERATING UNIT 2 _____

OPERATING UNIT 3 _____

OPERATING UNIT 4 _____

OPERATING UNIT 5 _____

OPERATING UNIT 6 _____

POST-CLOSURE CARE UNIT 1 _____

POST-CLOSURE CARE UNIT 2 _____

POST-CLOSURE CARE UNIT 3 _____

POST-CLOSURE CARE UNIT 4 _____

FILED WITH
STATE RECORDS CENTER

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SUB TOTAL \$ _____

PUBLIC PARTICIPATION FEE _____

TOTAL FEE DUE \$ _____

[11-27-88; 11-30-95]

210. - 299. [RESERVED]

74-3-15. Agreement status authorized.

The board and the agency, through the governor, may enter into an agreement with the nuclear regulatory commission, as provided in the Atomic Energy Act of 1954, as amended, providing for discontinuance of the regulatory authority of the nuclear regulatory commission and acceptance of that authority by the board and agency. For the duration of such an agreement, the board shall have authority to regulate the radioactive materials covered by the agreement for the protection of the public health and safety and the environment from radiation hazards.

History: 1953 Comp., § 12-9-11, enacted by Laws 1971, ch. 284, § 11; 1977, ch. 343, § 15.

Cross references. — As to definitions of "board," "agency" and "nuclear regulatory commission," see 74-3-4 NMSA 1978 and notes thereto.

Atomic Energy Act. — For the Atomic Energy Act of 1954, referred to in the first sentence, see 42 U.S.C. § 2011 et seq.

74-3-16. Discrimination.

No person or employer shall discharge or in any manner discriminate against any employee [employee] except for good cause shown because the employee has filed a complaint or instituted or caused to be instituted a proceeding under or related to the Radiation Protection Act [74-3-1 to 74-3-16 NMSA 1978] or has testified or is about to testify in any such proceeding or because of the exercise by the employee on behalf of himself or others of any right afforded by that act or any rule, regulation or order adopted thereunder.

History: 1953 Comp., § 12-9-12, enacted by Laws 1977, ch. 343, § 16.

ARTICLE 4

Hazardous Wastes

Sec.

- 74-4-1. Short title.
- 74-4-2. Purpose.
- 74-4-3. Definitions.
- 74-4-3.1. Application of act.
- 74-4-3.2. Repealed.
- 74-4-3.3. Hazardous wastes of other states.
- 74-4-4. Duties and powers of the board.
- 74-4-4.1. Hazardous agricultural waste; duties and responsibilities of the department of agriculture.
- 74-4-4.2. Permits; issuance; denial; modification; suspension; revocation.
- 74-4-4.3. Entry; availability of records.
- 74-4-4.4. Underground storage tanks; registration; installer certification; fees.
- 74-4-4.5. Hazardous waste fund created; appropriation.
- 74-4-4.6. Repealed.
- 74-4-4.7. Permit applicant disclosure.

Sec.

- 74-4-4.8. Underground storage tank fund created; appropriation.
- 74-4-5. Adoption of regulations; notice and hearing.
- 74-4-6. Repealed.
- 74-4-7. Containment and cleanup of hazardous substance incidents; division powers.
- 74-4-8. Emergency fund.
- 74-4-9. Existing hazardous waste facilities; interim status.
- 74-4-10. Enforcement; compliance orders; civil penalties.
- 74-4-10.1. Hazardous waste monitoring, analysis and testing.
- 74-4-11. Penalty; criminal.
- 74-4-12. Penalty; civil.
- 74-4-13. Imminent hazards; authority of director; penalties.
- 74-4-14. Administrative actions; judicial review.

74-4-1. Short title.

Chapter 74, Article 4 NMSA 1978 may be cited as the "Hazardous Waste Act".

History: 1953 Comp., § 12-9B-1, enacted by Laws 1977, ch. 313, § 1; 1983, ch. 302, § 1.

Law reviews. — For article, "Rights of New Mexico Municipalities Regarding the Siting and Operation of Privately Owned Landfills," see 21 N.M.L. Rev. 149 (1990).

Am. Jur. 2d, A.L.R. and C.J.S. references. —

Standing to sue for violation of state environmental regulatory statute, 66 A.L.R.4th 685.

Validity of local regulation of hazardous waste, 67 A.L.R.4th 822.

Validity, construction, and application of state hazardous waste regulations, 86 A.L.R.4th 401.

Governmental recovery of cost of hazardous waste

removal under Comprehensive Environmental Response, Compensation, and Liability Act (42 USCS § 9601 et seq.), 70 A.L.R. Fed. 329.

State or local regulation of toxic substances as pre-empted by Toxic Substances Control Act (15 USCS § 2601 et seq.), 84 A.L.R. Fed. 913.

Right to maintain action based on violation of

§ 7003 of Resource Conservation and Recovery Act (42 USCS § 6973) pertaining to imminent hazards from solid or hazardous waste, 105 A.L.R. Fed. 800.

Necessity of proof of scienter under statute fixing criminal penalties for hazardous waste violations (42 USCS § 6928(d)), 106 A.L.R. Fed. 836.

74-4-2. Purpose.

The purpose of the Hazardous Waste Act [this article] is to help ensure the maintenance of the quality of the state's environment; to confer optimum health, safety, comfort and economic and social well-being on its inhabitants; and to protect the proper utilization of its lands.

History: 1963 Comp., § 12-9B-2, enacted by Laws 1977, ch. 313, § 2.

74-4-3. Definitions.

As used in the Hazardous Waste Act [this article]:

- A. "board" means the environmental improvement board;
- B. "director" or "secretary" means the secretary of environment;
- C. "disposal" means the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters;
- D. "division" or "department" means the department of environment;
- E. "federal agency" means any department, agency or other instrumentality of the federal government and any independent agency or establishment of that government, including any government corporation and the government printing office;
- F. "generator" means any person producing hazardous waste;
- G. "hazardous agricultural waste" means hazardous waste generated as part of his licensed activity by any person licensed pursuant to the Pesticide Control Act or any hazardous waste designated as hazardous agricultural waste by the board, but does not include animal excrement in connection with farm, ranch or feedlot operations;
- H. "hazardous substance incident" means any emergency incident involving a chemical or chemicals, including but not limited to transportation wrecks, accidental spills or leaks, fires or explosions, which incident creates the reasonable probability of injury to human health or property;
- I. "hazardous waste" means any solid waste or combination of solid wastes which because of their quantity, concentration or physical, chemical or infectious characteristics may:
 - (1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or
 - (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. "Hazardous waste" does not include any of the following, until the board determines that they are subject to Subtitle C of the federal Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.: drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil or natural gas or geothermal energy, any fly ash waste, bottom ash waste, slag waste, flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels, solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore or cement kiln dust waste;
- J. "manifest" means the form used for identifying the quantity, composition, origin, routing and destination of hazardous waste during transportation from point of generation to point of disposal, treatment or storage;

K. "person" means any individual, trust, firm, joint stock company, federal agency, corporation including a government corporation, partnership, association, state, municipality, commission, political subdivision of a state or any interstate body;

L. "regulated substance" means:

(1) any substance defined in Section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, but not including any substance regulated as a hazardous waste under Subtitle C of the federal Resource Conservation and Recovery Act of 1976, as amended; and

(2) petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure of sixty degrees Fahrenheit and fourteen and seven-tenths pounds per square inch absolute;

M. "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear or byproduct material as defined by the federal Atomic Energy Act of 1954, as amended (68 Stat. 923);

N. "storage" means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste;

O. "tank installer" means any individual who installs or repairs an underground storage tank;

P. "transporter" means a person engaged in the movement of hazardous waste, not including movement at the site of generation, disposal, treatment or storage;

Q. "treatment" means any method, technique or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable to recovery, amenable to storage or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous; and

R. "underground storage tank" means a single tank or combination of tanks, including underground pipes connected thereto, that are used to contain an accumulation of regulated substances and the volume of which, including the volume of the underground pipes connected thereto, is ten percent or more beneath the surface of the ground. The term does not include any:

(1) farm, ranch or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel or heating oil for noncommercial purposes;

(2) septic tank;

(3) pipeline facility, including gathering lines that are regulated under the federal Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. App. 1671, et seq., or the federal Hazardous Liquid Pipeline Safety Act of 1979, 49 U.S.C. App. 2001, et seq., or that is an intrastate pipeline facility regulated under state laws comparable to either act;

(4) surface impoundment, pit, pond or lagoon;

(5) storm water or wastewater collection system;

(6) flow-through process tank;

(7) liquid trap or associated gathering lines directly related to oil or gas production and gathering operations;

(8) storage tank situated in an underground area, such as a basement, cellar, mineworking drift, shaft or tunnel, if the storage tank is situated upon or above the surface of the undesignated floor; or

(9) pipes connected to any tank that is described in Paragraphs (1) through (8) of this subsection.

History: 1953 Comp., § 12-9B-3, enacted by Laws 1977, ch. 313, § 3; 1981 (1st S.S.), ch. 8, § 2; 1987, ch. 179, § 1; 1989, ch. 322, § 1; 1991, ch. 25, § 33; 1992, ch. 43, § 1.

The 1991 amendment, effective March 29, 1991, rewrote Subsection B, which read "'director' means the director of the division"; substituted "department of environment" for "environmental improvement division of the health and environment department" in Subsection D; inserted "of 1976" following "Recovery Act" in the second sentence in Paragraph (2) of Subsection I and in Paragraph (1) of Subsection L; and substituted "42 U.S.C. 6901" for "42 U.S.C. 6921" in the second sentence in Paragraph (2) of Subsection I.

The 1992 amendment, effective March 6, 1992, substituted "secretary of environment" for "secretary of the department" in Subsection B, inserted "or department" in Subsection D, and made minor stylistic changes throughout the section.

Pesticide Control Act. — See 76-4-1 NMSA 1978 and notes thereto.

Resource Conservation and Recovery Act. — Subtitle C of the Resource Conservation and Recovery Act, referred to in Subsection I(2) and L(1), appears as 42 U.S.C. § 6921 et seq.

Comprehensive Environmental Response, Compensation and Liability Act. — Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, referred to in Subsection L (1), appears as 42 U.S.C. § 9601 (14).

Water Pollution Control Act. — Section 402 of the federal Water Pollution Control Act, referred to in Subsection M, appears as 33 U.S.C. § 1342.

Atomic Energy Act of 1954. — The Atomic Energy Act of 1954, referred to in Subsection M, appears as 42 U.S.C. § 2011 et seq.

74-4-3.1. Application of act.

Nothing in the Hazardous Waste Act [this article] shall be construed to apply to any activity or substance which is subject to the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq.), the Safe Drinking Water Act, as amended, (42 U.S.C. 300f et seq.) or the Atomic Energy Act of 1954, as amended, (42 U.S.C. 2011 et seq.) except to the extent that such application or regulation is not inconsistent with the requirements of such acts; nor shall the Hazardous Waste Act apply to the treatment, storage or disposal of wastes under a permit issued pursuant to the Surface Mining Act [69-25A-1 to 69-25A-35 NMSA 1978] or the federal Surface Mining Control and Reclamation Act of 1977, as amended, or to any farmer disposing of waste pesticides from his own use, provided he triple rinses each emptied pesticide container and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

History: 1978 Comp., § 74-4-3.1, enacted by Laws 1981 (1st S.S.), ch. 8, § 3.

Federal Water Pollution Control Act. — The Federal Water Pollution Control Act, referred to near the beginning of this section, has been superseded by the Water Pollution Control Act, which appears as 33 U.S.C. § 1251 et seq.

Surface Mining Control and Reclamation Act. — The federal Surface Mining Control and Reclamation Act of 1977, referred to in this section, appears as 30 U.S.C. § 1201 et seq.

74-4-3.2. Repealed.

Repeals. — Laws 1989, ch. 4, § 1 repeals 74-4-3.2 NMSA 1978, as enacted by Laws 1987, ch. 179, § 2, relating to application of Hazardous Waste Act to the

waste isolation pilot plant, effective February 23, 1989. For provisions of former section, see 1987 Supplement.

74-4-3.3. Hazardous wastes of other states.

In addition to the meaning of hazardous waste as defined in Section 74-4-3 NMSA 1978, the term "hazardous waste" as used in the Hazardous Waste Act [this article] may include any material imported into the state of New Mexico for the purpose of disposal which is defined or classified as hazardous waste in the state of origin.

History: 1978 Comp., § 74-4-3.3, enacted by Laws 1989, ch. 256, § 1.

74-4-4. Duties and powers of the board.

A. The board shall adopt regulations for the management of hazardous waste as may be necessary to protect public health and the environment, that are equivalent to and no more stringent than federal regulations adopted by the federal environmental protection agency pursuant to the federal Resource Conservation and Recovery Act of 1976, as amended:

(1) for the identification and listing of hazardous wastes, taking into account toxicity, persistence and degradability, potential for accumulation in tissue and other related factors, including flammability, corrosiveness and other hazardous characteristics; provided that, except as authorized by Sections 74-4-3.3 and 74-8-2 NMSA 1978, the board shall not identify or list any solid waste or combination of solid wastes as a hazardous waste that has not been listed and designated as a hazardous waste by the federal environmental protection agency pursuant to the federal Resource Conservation and Recovery Act of 1976, as amended;

(2) establishing standards applicable to generators identified or listed under this subsection, including requirements for:

(a) furnishing information on the location and description of the generator's facility and on the production or energy recovery activity occurring at that facility;

(b) record-keeping practices that accurately identify the quantities of hazardous waste generated, the constituents of the waste that are significant in quantity or in potential harm to human health or the environment and the disposition of the waste;

(c) labeling practices for any containers used for the storage, transport or disposal of the hazardous waste that will identify accurately the waste;

(d) use of safe containers tested for safe storage and transportation of the hazardous waste;

(e) furnishing the information on the general chemical composition of the hazardous waste to persons transporting, treating, storing or disposing of the waste;

(f) implementation of programs to reduce the volume or quantity and toxicity of the hazardous waste generated;

(g) submission of reports to the secretary at such times as the secretary deems necessary, setting out the quantities of hazardous waste identified or listed pursuant to the Hazardous Waste Act [Chapter 74, Article 4 NMSA 1978] that the generator has generated during a particular time period and the disposition of all hazardous waste reported, the efforts undertaken during a particular time period to reduce the volume and toxicity of waste generated and the changes in volume and toxicity of waste actually achieved during a particular time period in comparison with previous time periods; and

(h) the use of a manifest system and any other reasonable means necessary to assure that all hazardous waste generated is designated for treatment, storage or disposal in, and arrives at, treatment, storage or disposal facilities, other than facilities on the premises where the waste is generated, for which a permit has been issued pursuant to the Hazardous Waste Act; and that the generator of hazardous waste has a program in place to reduce the volume or quality and toxicity of waste to the degree determined by the generator to be economically practicable; and that the proposed method of treatment, storage or disposal is that practicable method currently available to the generator that minimizes the present and future threat to human health and the environment;

(3) establishing standards ~~applicable to generators~~ of hazardous waste identified or listed under this subsection or of fuel produced from any such hazardous waste or of fuel from such waste and any other material, as may be necessary to protect human health and the environment, including but not limited to requirements for:

(a) record-keeping concerning the hazardous waste transported and its source and delivery points;

(b) transportation of the hazardous waste only if properly labeled;

(c) compliance with the manifest system referred to in Subparagraph (b) of Paragraph (2) of this subsection; and

(d) transportation of all the hazardous waste only to the hazardous waste treatment, storage or disposal facilities that the shipper designates on the manifest form to be a facility holding a permit issued pursuant to the Hazardous Waste Act or the federal Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.

(4) establishing ~~standards~~ applicable to distributors ~~or marketers~~ of any fuel produced from hazardous waste, or any fuel that contains hazardous waste, for:

(a) furnishing the information stating the location and general description of the facility; and

(b) furnishing the information describing the production or energy recovery activity carried out at the facility;

(5) establishing performance standards as may be necessary to protect human health and the environment applicable to owners and operators of facilities for the treatment, storage or disposal of hazardous waste identified or listed under this section, distinguishing, where appropriate, between new facilities and facilities in existence on the date of promulgation, including but not limited to requirements for:

(a) maintaining the records of all hazardous waste identified or listed under this subsection that is treated, stored or disposed of, as the case may be, and the manner in which such waste was treated, stored or disposed of;

(b) satisfactory reporting, monitoring, inspection and compliance with the manifest system referred to in Subparagraph (h) of Paragraph (2) of this subsection;

(c) treatment, storage or disposal of all such waste and any liquid that is not a hazardous waste, except with respect to underground injection control into deep injection wells, received by the facility pursuant to such operating methods, techniques and practices as may be satisfactory to the secretary;

(d) location, design and construction of hazardous waste treatment, disposal or storage facilities;

(e) contingency plans for effective action to minimize unanticipated damage from any treatment, storage or disposal of any hazardous waste;

(f) maintenance and operation of the facilities and requiring any additional qualifications as to ownership, continuity of operation, training for personnel and financial responsibility, including financial responsibility for corrective action, as may be necessary or desirable;

(g) compliance with the requirements of Paragraph (6) of this subsection respecting permits for treatment, storage or disposal;

(h) the taking of corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility, regardless of the time at which waste was placed in the unit; and

(i) the taking of corrective action beyond a facility's boundaries where necessary to protect human health and the environment unless the owner or operator of the facility concerned demonstrates to the satisfaction of the secretary that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Regulations adopted and promulgated under this subparagraph shall take effect immediately and shall apply to all facilities operating under permits issued under Paragraph (6) of this subsection and to all landfills, surface impoundments and waste pile units, including any new units, replacements of existing units or lateral expansions of existing units, that receive hazardous waste after July 26, 1982. No private entity shall be precluded by reason of criteria established under Subparagraph (f) of this paragraph from the ownership or operation of facilities providing hazardous waste treatment, storage or disposal services where the entity can provide assurance of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage or disposal of specified hazardous waste;

(6) requiring each person owning or operating or both an existing facility or planning to construct a new facility for the treatment, storage or disposal of hazardous waste identified or listed under this subsection to have a permit issued pursuant to requirements established by the board;

(7) establishing procedures for the issuance, suspension, revocation and modification of permits issued under Paragraph (6) of this subsection, which regulations shall provide for public notice, public comment and an opportunity for a hearing prior to the issuance, suspension, revocation or major modification of any permit unless otherwise provided in the Hazardous Waste Act;

(8) defining major and minor modifications; and

(9) establishing procedures for the inspection of facilities for the treatment, storage and disposal of hazardous waste that govern the minimum frequency and manner of the

inspections, the manner in which records of the inspections shall be maintained and the manner in which reports of the inspections shall be filed; provided, however, that inspections of permitted facilities shall occur no less often than every two years.

B. The board shall adopt regulations:

- (1) concerning hazardous substance incidents; and
- (2) requiring notification to the department of any hazardous substance incidents.

C. The board shall adopt regulations concerning underground storage tanks as may be necessary to protect public health and the environment that are equivalent to and no more stringent than federal regulations adopted by the federal environmental protection agency pursuant to the federal Resource Conservation and Recovery Act of 1976, as amended, and that shall include:

- (1) standards for the installation, operation and maintenance of underground storage tanks;
- (2) requirements for financial responsibility;
- (3) standards for inventory control;
- (4) standards for the detection of leaks from and the integrity testing and monitoring of underground storage tanks;
- (5) standards for the closure and dismantling of underground storage tanks;
- (6) requirements for record-keeping; and
- (7) requirements for the reporting, containment and remediation of all leaks from any underground storage tanks.

D. Notwithstanding the provisions of Subsection A of this section, the board may adopt regulations for the management of hazardous waste and hazardous waste transformation that are more stringent than federal regulations adopted by the federal environmental protection agency pursuant to the federal Resource Conservation and Recovery Act of 1976, as amended, if the board determines, after notice and public hearing, that such federal regulations are not sufficient to protect public health and the environment. As used in this subsection, "transformation" means an incinerator, pyrolysis, distillation, gasification or biological conversion other than composting.

E. In the event the board wishes to adopt regulations that are identical with regulations adopted by an agency of the federal government, the board, after notice and hearing, may adopt such regulations by reference to the federal regulations without setting forth the provisions of the federal regulations.

History: 1953 Comp., § 12-9B-4, enacted by Laws 1977, ch. 313, § 4; 1981 (1st S.S.), ch. 8, § 4; 1987, ch. 179, § 3; 1989, ch. 322, § 2; 1992, ch. 43, § 2; 1993, ch. 127, § 1.

Cross references. — For definition of "department," see 74-4-3 NMSA 1978.

The 1992 amendment, effective March 6, 1992, substituted "secretary" for "director" in Subsections A(2)(g), A(5)(c), and in the first sentence of Subsection A(5)(i); inserted "adopted and" in the second sentence of Subsection A(5)(i); substituted "owning or operating or both" for "owning and operating" in Subsection A(6); rewrote Subsection A(7); added present Subsection A(8); redesignated former Subsection A(8) as present Subsection A(9); substituted "department" for "division" in Subsection B(2); and made minor stylistic changes throughout the section.

The 1993 amendment, effective June 18, 1993, inserted "as may be necessary to protect public health and the environment, that are" in the introductory language in Subsection A; inserted "as may be necessary to protect public health and the environment" in

the introductory language in Subsection C; added present Subsection D and redesignated former Subsection D as present Subsection E.

Resource Conservation and Recovery Act. — The Resource Conservation and Recovery Act of 1976, referred to in several places in this section, appears as 42 U.S.C. § 6901 et seq.

No excuse from compliance where insufficient funds in corrective action fund. — The owner or operator of an underground storage tank which has experienced a release is not excused from compliance with corrective action requirements by reason of the insufficiency or unavailability of monies in the corrective action fund to meet the costs of corrective action. 1991 Op. Att'y Gen. No. 91-08.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 6, 134.

State or local regulation of transportation of hazardous materials as pre-empted by Hazardous Materials Transportation Act (49 U.S.C.S. § 1801 et seq.). 78 A.L.R. Fed. 289.

74-4-4.1. Hazardous agricultural waste; duties and responsibilities of the department of agriculture.

A. The department of agriculture shall be responsible for the enforcement of all board regulations adopted pursuant to the Hazardous Waste Act [this article] regarding generators of hazardous agricultural waste. The division shall enforce those board regulations pertaining to transporters, treaters, storers and disposers of hazardous agricultural waste.

B. In the exercise of the responsibility prescribed in Subsection A of this section, the department of agriculture shall have the same authority as that delegated to the division, including the director.

C. In the adoption of regulations pertaining to hazardous agricultural waste, the board shall make a reasonable effort to consult with the department of agriculture prior to the adoption of the regulations. The department of agriculture shall serve as the technical consultant to the board on matters concerning hazardous agricultural waste.

History: 1978 Comp., § 74-4-4.1, enacted by Laws 1981 (1st S.S.), ch. 8, § 5; 1989, ch. 322, § 3. Am. Jur. 2d, A.L.R. and C.J.S. references. — State or local regulation of transportation of hazard-

ous materials as pre-empted by Hazardous Materials Transportation Act (49 U.S.C.S. § 1801 et seq.), 78 A.L.R. Fed. 289.

74-4-4.2. Permits; issuance; denial; modification; suspension; revocation.

A. Each application for a permit pursuant to the Hazardous Waste Act [this article] shall contain information as may be required pursuant to Section 74-4-4.7 NMSA 1978 or pursuant to regulations promulgated by the board, including information with respect to:

(1) estimates with respect to the composition, quantity and concentration of any hazardous waste identified or listed under Subsection A of Section 74-4-4 NMSA 1978 or combinations of any hazardous waste and other solid waste proposed to be disposed of, treated, transported or stored and the time, frequency or rate at which the waste is proposed to be disposed of, treated, transported or stored; and

(2) the site where hazardous waste or the products of treatment of hazardous waste will be disposed of, treated, transported to or stored.

B. Hazardous waste permits issued after April 8, 1987 shall require corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under this section.

C. The division shall provide timely review on all permit applications. Upon a determination by the secretary that the applicant has met the requirements adopted pursuant to Section 74-4-4 NMSA 1978, the secretary may issue a permit or a permit subject to any conditions necessary to protect human health and the environment for the facility.

D. The secretary may deny any permit application or modify, suspend or revoke any permit issued pursuant to the Hazardous Waste Act if the applicant or permittee has:

(1) knowingly and willfully misrepresented a material fact in the application for a permit;

(2) refused to disclose the information required under the provisions of Section 74-4-4.7 NMSA 1978;

(3) been convicted in any court, within ten years immediately preceding the date of submission of the permit application, of:

(a) a felony or other crime involving moral turpitude; or

(b) a crime defined by state or federal statutes as involving or being in restraint of trade, price-fixing, bribery or fraud;

(4) exhibited a history of willful disregard for environmental laws of any state or the United States;

(5) had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States; or

(6) violated any provision of the Hazardous Waste Act, any regulation adopted and promulgated pursuant to that act or any condition of a permit issued under that act

E. In making a finding under Subsection D of this section, the secretary may consider aggravating and mitigating factors.

F. If an applicant or permittee whose permit is being considered for denial or revocation, respectively, on any basis provided by Subsection D of this section has submitted an action plan that has been approved in writing by the secretary, and plan approval includes a period of operation under a conditional permit that will allow the applicant or permittee a reasonable opportunity to demonstrate its rehabilitation, the secretary may issue a conditional permit for a reasonable period of time. In approving an action plan intended to demonstrate rehabilitation, the secretary may consider:

- (1) implementation by the applicant or permittee of formal policies;
- (2) training programs and management control to minimize and prevent the occurrence of future violations;
- (3) installation by the applicant or permittee of internal environmental auditing programs;
- (4) the applicant's release or the permittee's release subsequent to serving a period of incarceration or paying a fine, or both after conviction of any crime listed in Subsection D of this section; and
- (5) any other factors the secretary deems relevant.

G. Notwithstanding the provisions of Subsection D of this section:

(1) a research, development and demonstration permit may be terminated upon the determination by the secretary that termination is necessary to protect human health or the environment; and

(2) a permit may be modified at the request of the permittee for just cause as demonstrated by the permittee.

H. No ruling shall be made on permit issuance, major modification, suspension or revocation without an opportunity for a public hearing at which all interested persons shall be given a reasonable chance to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing; provided, however, that the secretary may, pursuant to Section 74-4-10 NMSA 1978, order the immediate termination of a research development and demonstration permit whenever the secretary determines that termination is necessary to protect human health or the environment and may order the immediate suspension or revocation of a permit for a facility that has been ordered to take corrective action or other response measures for releases of hazardous waste into the environment.

I. The secretary shall hold a public hearing on a minor permit modification if the secretary determines that there is significant public interest in the minor modification.

J. The board shall provide a schedule of fees for businesses generating hazardous waste or seeking a permit for the management of hazardous waste, to be deposited to the credit of the hazardous waste fund, including but not limited to:

(1) a hazardous waste business fee applicable to any business engaged in a regulated hazardous waste activity, which shall be an annual flat fee based on the type of activity;

(2) a hazardous waste generation fee applicable to any business generating hazardous waste, which shall be based on the quantity of hazardous waste generated annually; however, when any material listed in Paragraph (2) of Subsection I of Section 74-4-3 NMSA 1978 is determined by the board to be subject to regulation under Subtitle C of the federal Resource Conservation and Recovery Act, the board may set a generation fee under this paragraph for that waste based on its volume, toxicity, mobility and economic impact on the regulated entity; and

(3) a hazardous waste permit application fee, not exceeding the estimated cost of investigating the application and issuing the permit, to be paid at the time the secretary notifies the applicant by certified mail that the application has been deemed administratively complete and a technical review is scheduled.

History: 1978 Comp., § 74-4-4.2, enacted by Laws 1981 (1st S.S.), ch. 8, § 6; 1987, ch. 179, § 4; 1989, ch. 322, § 4; 1992, ch. 43, § 3.

The 1992 amendment, effective March 6, 1992,

substituted the present section catchline for "Permits; issuance and revocation; appeal"; inserted "pursuant to Section 74-4-4.7 NMSA 1978" in the introductory paragraph of Subsection A; twice substituted "secre-

tary" for "director" in Subsection C; rewrote Subsection D; added present Subsections E, F, and G; redesignated former Subsection E as present Subsection H; inserted "major" near the beginning of Subsection H while substituting "secretary" for "division" near the middle of that subsection; added present Subsection I; redesignated former Subsection F as present Subsection J; substituted "secretary" for "director" in Sub-

section J(3); deleted former Subsections G and H, relating to appeal; and made minor stylistic changes throughout the section.

Federal Resource Conservation and Recovery Act. — Subtitle C of the federal Resource Conservation and Recovery Act, referred to in Subsection J(2), appears as 42 U.S.C. § 6921.

74-4-4.3. Entry; availability of records.

A. For purposes of developing or assisting in the development of any regulations, conducting any study, taking any corrective action or enforcing the provisions of the Hazardous Waste Act [this article], upon request of the director or his authorized representative:

(1) any person who generates, stores, treats, transports, disposes of or otherwise handles or has handled hazardous wastes shall furnish information relating to such hazardous wastes and permit the director or his authorized representatives:

(a) to enter at reasonable times any establishment or other place maintained by any person where hazardous wastes are or have been generated, stored, treated, disposed of or transported from or where an underground storage tank is located; and

(b) to inspect and obtain samples from any person of any hazardous wastes and samples of any containers or labeling for the wastes; and

(2) any person who owns or operates an underground storage tank, or any tank subject to study under Section 9009 of the Resource Conservation and Recovery Act that is used for storing regulated substances, shall furnish information relating to such tanks, including their associated equipment and their contents, conduct monitoring or testing, permit the director or his authorized representative at all reasonable times to have access to and to copy all records relating to such tanks and permit the director or his authorized representative to have access for corrective action. For the purposes of developing or assisting in the development of any regulation, conducting any study, taking corrective action or enforcing the provisions of the Hazardous Waste Act, the director or his authorized representative is authorized:

(a) to enter at reasonable times any establishment or other place where an underground storage tank is located;

(b) to inspect or obtain samples from any person of any regulated substance in such tank;

(c) to conduct monitoring or testing of the tanks, associated equipment, contents or surrounding soils, air, surface water or ground water; and

(d) to take corrective action.

B. Any person owning property to which access is necessary in order to investigate or clean up a facility where hazardous waste is generated, stored, treated or disposed of, or where underground storage tanks are located, shall:

(1) permit the director or his authorized representative to obtain samples of soil or ground water, or both, at reasonable times; and

(2) provide access to such property for structures or equipment necessary to monitoring or cleanup of hazardous wastes or leaking from underground storage tanks; provided that:

(a) such structures or equipment do not unreasonably interfere with the owner's use of the property; or

(b) the owner is adequately compensated for activities which unreasonably interfere with his use or enjoyment of such property.

C. Each inspection shall be commenced and completed with reasonable promptness. If the director or his representative obtains any samples, prior to leaving the premises he shall give to the owner, operator or agent in charge a receipt describing the sample obtained and, if requested, a portion of each sample equal in volume or weight to the portion retained. If any analysis is made of the samples, a copy of the results of the analysis shall be furnished promptly to the owner, operator or agent in charge.

D. Any records, reports or information obtained by the division under this section shall be available to the public, except that upon a showing satisfactory to the division that records, reports or information, or a particular part thereof, to which the director or his authorized representatives have access under this section, if made public, would divulge information entitled to protection under Section 1905 of Title 18 of the United States Code, such information or particular portion thereof shall be considered confidential, except that such record, report, document or information may be disclosed to officers, employees or authorized representatives of the United States concerned with carrying out the Resource Conservation and Recovery Act, or when relevant in any proceedings under the Hazardous Waste Act.

E. Any person not subject to the provisions of Section 1905 of Title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than five thousand dollars (\$5,000) or to imprisonment not to exceed one year or both.

F. In submitting data under the Hazardous Waste Act, a person required to provide such data may:

(1) designate the data the person believes is entitled to protection under this subsection; and

(2) submit such designated data separately from other data submitted under the Hazardous Waste Act. A designation under this paragraph shall be made in writing and in such manner as the director may prescribe.

History: 1978 Comp., § 74-4-4.3, enacted by Laws 1981 (1st S.S.), ch. 8, § 7; 1967, ch. 179, § 6; 1989, ch. 322, § 6.

Resource Conservation and Recovery Act. — See 42 U.S.C. § 6901 et seq.

Areas subject to inspection. — Regardless of whether each specific part of the premises is subject to regulation, the statute clearly allows an inspection of all areas where the hazardous waste is being generated, whether it is in an enclosed facility or not. *New Mexico Env'tl. Imp. Div. v. Climax Chem. Co.*, 105 N.M. 439, 733 P.2d 1322 (Ct. App. 1987).

Search warrant required in absence of consent. — In the event consent to enter and inspect

premises for compliance with this article is denied, an administrative search warrant is required. *New Mexico Env'tl. Imp. Div. v. Climax Chem. Co.*, 105 N.M. 439, 733 P.2d 1322 (Ct. App. 1987).

Venue in action for search warrant. — An action by which the environmental improvement division sought an administrative warrant for inspection under this article was a transitory action and venue was controlled by 38-3-1A NMSA 1978, which allows an action to be brought in a county where the plaintiff resides. *New Mexico Env'tl. Imp. Div. v. Climax Chem. Co.*, 105 N.M. 439, 733 P.2d 1322 (Ct. App. 1987).

74-4-4.4. Underground storage tanks; registration; installer certification; fees.

A. By regulation, the board shall require an owner of an underground storage tank to register the tank with the division and impose reasonable conditions for registration including the submission of plans, specifications and other relevant information relating to the tank. For purposes of this subsection only, the term "owner" means: in the case of an underground storage tank in use on November 8, 1984 or brought into use after that date, any person who owns an underground storage tank used for storage, use, or dispensing of regulated substances; and in the case of an underground storage tank in use before November 8, 1984 but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use. The owner of a tank taken out of operation on or before January 1, 1974 shall not be required to notify under this subsection. The owner of a tank taken out of operation after January 1, 1974 and removed from the ground prior to November 8, 1984 shall not be required to notify under this subsection. Evidence of current registration pursuant to this subsection shall be available for inspection at the site of the underground storage tank.

B. By regulation, the board shall require any person who, beginning thirty days after the United States environmental protection agency administrator prescribes the form of notice pursuant to Section 9002(a)(5) of the Resource Conservation and Recovery Act and for eighteen months thereafter, deposits a regulated substance into an underground storage

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tank to give notice of the registration requirements of Subsection A of this section to the owner and operator of the tank.

C. By regulation, the board may require tank installers to obtain certification from the division and develop procedures for certification which will ensure that underground storage tanks are installed and repaired in a manner which will not encourage or facilitate leaking. If the board requires certification, it shall be unlawful for a person to install or repair an underground storage tank unless he is a certified tank installer. In accordance with the Uniform Licensing Act [61-1-1 to 61-1-31 NMSA 1978], the division may suspend or revoke the certification for a tank installer upon grounds that he:

- (1) exercised fraud, misrepresentation or deception in obtaining his certification;
- (2) exhibited gross incompetence in the installation or repair of an underground storage tank; or
- (3) was derelict in the performance of a duty as a certified tank installer.

D. By regulation, the board shall provide a schedule of fees sufficient to defray the reasonable and necessary costs of:

- (1) reviewing and acting upon applications for the registration of underground storage tanks;
- (2) reviewing and acting upon applications for the certification of tank installers;

and

- (3) implementing and enforcing any provision of the Hazardous Waste Act [this article] applicable to underground storage tanks and tank installers including standards for the installation, operation and maintenance of underground storage tanks and for the certification of tank installers.

History: 1978 Comp., § 74-4-4.4, enacted by Laws 1987, ch. 179, § 6; 1989, ch. 322, § 6.
Cross references. — For hazardous waste emergency fund, see 74-4-8 NMSA 1978.

Resource Conservation and Recovery Act. — Section 9002(a)(6) of the Resource Conservation and Recovery Act, referred to in Subsection B, appears as 42 U.S.C. § 6991a(a)(6).

74-4-4.5. Hazardous waste fund created; appropriation.

A. There is created in the state treasury the "hazardous waste fund" which shall be administered by the division. All balances in the fund are appropriated to the division for the sole purpose of meeting necessary expenses in the administration and operation of the hazardous waste program.

B. All fees collected pursuant to Subsection F of Section 74-4-4.2 NMSA 1978 shall be transmitted to the state treasurer for credit to the hazardous waste fund.

History: 1978 Comp., § 74-4-4.5, enacted by Laws 1987, ch. 179, § 7; 1989, ch. 322, § 7; 1989, ch. 324, § 34; 1990, ch. 124, § 20.

74-4-4.6. Repealed.

Repeals. — Laws 1989, ch. 322, § 17 repeals 74-4-4.6 NMSA 1978, as enacted by Laws 1989, ch. 322, § 8, relating to creation of the underground storage

tank fund, effective July 1, 1992. For provisions of former section, see 1990 Replacement Pamphlet.

74-4-4.7. Permit applicant disclosure.

A. Every applicant for a permit pursuant to the Hazardous Waste Act [this article] shall file a disclosure statement with the department with the information required by, and on a form developed by, the department in cooperation with the department of public safety, at the same time the applicant files the application for a permit with the secretary.

B. Upon the request of the secretary, the department of public safety shall prepare and transmit to the secretary an investigative report on the applicant based in part upon the disclosure statement. The report shall be prepared and transmitted within ninety days after

the receipt of a copy of an applicant's disclosure statement from the department. Upon good cause, the ninety days may be extended for a reasonable period of time by the secretary.

C. In preparing the investigative report, the department of public safety may request and receive criminal history information on the applicant from the federal bureau of investigation or any other law enforcement agency or organization. While the investigative report is being prepared by the department of public safety, the secretary may also request information regarding any person who will be or could reasonably be expected to be involved in management activities of the hazardous waste facility or any person who has a controlling interest in any permittee. The department of public safety shall maintain confidentiality regarding the information received from a law enforcement agency as may be imposed by that agency as a condition for providing that information to the department of public safety.

D. All persons required to file a disclosure shall provide any assistance or information requested by the department of public safety or the secretary and shall cooperate in any inquiry or investigation conducted by the department of public safety or any inquiry, investigation or hearing conducted by the secretary. Nothing in this section shall be construed to waive a person's constitutional right against self-incrimination.

E. If any of the information required to be included in the disclosure statement changes, or if any information is added after filing the statement, the person required to file it shall provide that information in writing to the secretary within thirty days after the change or addition. Failure to provide the information within thirty days may constitute the basis for the revocation of, or denial of an application for, any permit issued or applied for in accordance with Section 74-4-4.2 NMSA 1978, but only if, prior to any denial or revocation, the secretary notifies the applicant or permittee of the secretary's intention to do so and gives the applicant or permittee fourteen days from the date of the notice to explain why the information was not provided within the required thirty-day period. The secretary shall consider this information when determining whether to revoke or deny the permit.

F. No person shall be required to submit the disclosure statement required by this section if the person is:

- (1) the United States or any agency or instrumentality of the United States;
- (2) a state or any agency or political subdivision of a state; or
- (3) a corporation or an officer, director or shareholder of that corporation and that corporation:
 - (a) has on file and in effect with the federal securities and exchange commission a registration statement required under Section 5, Chapter 38, Title 1 of the federal Securities Act of 1933, as amended;
 - (b) submits to the secretary with the application for a permit evidence of the registration described in Subparagraph (a) of this paragraph and a copy of the corporation's most recent annual form 10-K or an equivalent report; and
 - (c) submits to the secretary on the annual anniversary of the date of the issuance of any permit it holds pursuant to the Hazardous Waste Act evidence of registration described in Subparagraph (a) of this paragraph and a copy of the corporation's most recent annual form 10-K or an equivalent report.

History: 1978 Comp., § 74-4-4.7, enacted by Laws 1992, ch. 43, § 4.

Emergency clauses. — Laws 1992, ch. 43, § 9 makes the act effective immediately. Approved March 6, 1992.

Securities Act of 1933. — Section 5, Chapter 38, Title 1 of the Federal Securities Act of 1933, appears as 15 U.S.C. § 77e(c).

74-4-4.8. Underground storage tank fund created; appropriation.

A. There is created in the state treasury the "underground storage tank fund" which shall be administered by the department. All balances in the fund are appropriated to the department for the sole purpose of meeting necessary expenses in the administration and operation of the underground storage tank program.

B. All fees collected pursuant to Subsection D of Section 74-4-4.4 NMSA 1978 shall be transmitted to the state treasurer for credit to the underground storage tank fund.

C. Balances remaining in the underground storage tank fund at the end of the fiscal year shall not revert to the general fund.

History: Laws 1993, ch. 298, § 2.

Effective dates. — Laws 1993, ch. 298, § 6 makes the act effective on April 7, 1993.

Compiler's notes. — Laws 1993, ch. 100, § 7 enacted a 74-4-4.8 NMSA 1978, creating an underground storage tank fund, effective March 31, 1993,

and was approved March 31, 1993. However, because of the enactment of 74-4-4.8 NMSA 1978 by Laws 1993, ch. 298, § 2, approved April 7, 1993, the section as enacted by Laws 1993, ch. 100 has not been set out. See 12-1-8 NMSA 1978.

74-4-5. Adoption of regulations; notice and hearing.

A. No regulation shall be adopted, amended or repealed until after a public hearing by the board. Hearings on regulations shall be held in Santa Fe or in an area of the state substantially affected by the regulations. In making its regulations, the board shall give the weight it deems appropriate to all relevant facts and circumstances presented at the public hearing, including but not limited to:

(1) the character and degree of injury to or interference with the environment or public health; and

(2) the technical practicability and economic reasonableness of the regulation.

B. Notice of the hearing shall be given at least thirty days prior to the hearing date and shall state the subject, the time and the place of the hearing and the manner in which interested persons may present their views. The notice shall also state where interested persons may secure copies of any proposed regulation. The notice shall be published in a newspaper of general circulation in the area affected. Reasonable effort shall be made to give notice to all persons who have made a written request to the board for advance notice of hearings.

C. At the hearing, the board shall allow all interested persons reasonable opportunity to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing. Any person heard or represented at the hearing shall be given written notice of the action of the board.

D. The board may designate a hearing officer to take evidence in the hearing. A transcript shall be made of the entire hearing proceedings.

E. No regulation or amendment or repeal of a regulation adopted by the board shall become effective until thirty days after its filing under the State Rules Act [14-3-24, 14-3-25, 14-4-1 to 14-4-9 NMSA 1978].

History: 1953 Comp., § 12-9B-5, enacted by Laws 1977, ch. 313, § 5; 1992, ch. 43, § 5.

Cross references. — As to notice by publication, see 14-11-1 NMSA 1978 et seq.

The 1992 amendment, effective March 6, 1992, deleted "appeal" at the end of the section catchline; deleted "environmental improvement" preceding

"board" in the first sentence of the introductory paragraph of Subsection A; inserted "the environment or" in Subsection A(1); deleted former Subsections F, G, and H, relating to appeal; and made minor stylistic changes throughout the section.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 6, 134.

74-4-6. Repealed.

Repeals. — Laws 1981 (1st S.S.), ch. 8, § 12, repeals 74-4-6 NMSA 1978, relating to disposal of out-of-state hazardous waste, effective April 14, 1981.

Compiler's notes. — Laws 1992, ch. 43, § 6 en-

acted a section designated 74-4-6 NMSA 1978 which has been redesignated by the compiler as 74-4-14 NMSA 1978.

74-4-7. Containment and cleanup of hazardous substance incidents; division powers.

The division may:

A. take any action necessary or appropriate to protect persons from injury or other harm which might arise from hazardous substance incidents, including but not limited to

providing for cleanup and disposal, coordinating the activities of other public officials and any other action the division deems necessary or appropriate;

B. notify any person who may have incurred or may incur physical injury from a hazardous substance incident that he should undergo medical examination; and

C. assess charges against persons responsible for hazardous substance incidents for costs the division incurs in cleanup of hazardous substance incidents, disposal of hazardous substances and for damage to state property. Amounts received in payment of such assessments shall be deposited in the hazardous waste emergency fund. Any person who is assessed charges pursuant to this subsection may appeal the assessment to the district court within thirty days of receipt of notice of the assessment.

History: 1953 Comp., § 12-9B-7, enacted by Laws 1977, ch. 313, § 7; 1989, ch. 322, § 9.
Cross references. — For definition of "division," see 74-4-3 NMSA 1978.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 6, 133, 134, 245, 246.

74-4-8. Emergency fund.

The "hazardous waste emergency fund" is created in the state treasury. This fund shall be used for cleanup of hazardous substance incidents, disposal of hazardous substances and necessary repairs to or replacement of state property and may be used for the state's share of any response action taken under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 et seq. The administrative and technical expenses of maintaining an emergency response program within the division shall be reimbursable on a quarterly basis from this fund. Any penalties collected by the division shall be credited to this fund. Amounts in the fund shall be deposited with the state treasurer and then disbursed pursuant to vouchers signed by the director or his authorized representative upon warrants drawn by the secretary of finance and administration.

History: 1953 Comp., § 12-9B-8, enacted by Laws 1977, ch. 313, § 8; 1983, ch. 301, § 81; 1983, ch. 302, § 2; 1989, ch. 322, § 10.

Cross references. — For definitions of "director" and "division," see 74-4-3 NMSA 1978.

74-4-9. Existing hazardous waste facilities; interim status.

Any person owning or operating a hazardous waste facility who has met the requirements for interim status under 42 U.S.C. 6925 shall be deemed to have interim status under the Hazardous Waste Act [this article].

History: 1978 Comp., § 74-4-9, enacted by Laws 1989, ch. 322, § 11.

Repeals and reenactments. — Laws 1989, ch. 322, § 11 repeals former 74-4-9 NMSA 1978, as en-

acted by Laws 1981 (1st S.S.), ch. 8, § 8, and enacts the above section, effective April 7, 1989. For former provisions, see 1988 Replacement Pamphlet.

74-4-10. Enforcement; compliance orders; civil penalties.

A. Whenever on the basis of any information the secretary determines that any person has violated, is violating or threatens to violate any requirement of the Hazardous Waste Act [this article], any regulation adopted and promulgated pursuant to that act or any condition of a permit issued pursuant to that act, the secretary may:

(1) issue a compliance order stating with reasonable specificity the nature of the violation or threatened violation and requiring compliance immediately or within a specified time period or assessing a civil penalty for any past or current violation, or both.
or

(2) commence a civil action in district court for appropriate relief, including a temporary or permanent injunction.

B. Any order issued pursuant to Subsection A of this section may include a suspension or revocation of any permit issued by the secretary. Any penalty assessed in the order shall not exceed ten thousand dollars (\$10,000) per day of noncompliance for each violation. In

assessing the penalty, the secretary shall take into account the seriousness of the violation and any good-faith efforts to comply with the applicable requirements. For violations related to underground storage tanks, "per violation" means per tank.

C. If a violator fails to take corrective actions within the time specified in a compliance order, the secretary may:

(1) assess a civil penalty of not more than twenty-five thousand dollars (\$25,000) for each day of continued noncompliance with the order; and

(2) suspend or revoke any permit issued to the violator pursuant to the Hazardous Waste Act.

D. Whenever on the basis of any information the secretary determines that the immediate termination of a research, development and demonstration permit is necessary to protect human health and the environment, the secretary may order an immediate termination of all research, development and demonstration operations permitted pursuant to the Hazardous Waste Act at the facility.

E. Whenever on the basis of any information the secretary determines that there is or has been a release of hazardous waste into the environment from a facility authorized to operate under Section 74-4-9 NMSA 1978, the secretary may issue an order requiring corrective action, including corrective action beyond a facility's boundaries or other response measure as he deems necessary to protect human health or the environment or may commence an action in district court in the district in which the facility is located for appropriate relief, including a temporary or permanent injunction.

F. Any order issued under Subsection E of this section may include a suspension or revocation of authorization to operate under Section 74-4-9 NMSA 1978 and shall state with reasonable specificity the nature of the required corrective action or other response measure and shall specify a time for compliance. If any person named in an order fails to comply with the order, the secretary may assess, and the person shall be liable to the state for a civil penalty in an amount not to exceed ten thousand dollars (\$10,000) for each day of noncompliance with the order.

G. Any order issued pursuant to this section, any other enforcement proceeding initiated pursuant to this section or any claim for personal or property injury arising from any conduct for which evidence of financial responsibility must be provided may be issued to or taken against the insurer or guarantor of an owner or operator of a treatment, storage or disposal facility or underground storage tank if:

(1) the owner or operator is in bankruptcy, reorganization or arrangement pursuant to the federal Bankruptcy Code; or

(2) jurisdiction in any state or federal court cannot with reasonable diligence be obtained over an owner or operator likely to be solvent at the time of judgment.

H. Any order issued pursuant to this section shall become final unless, no later than thirty days after the order is served, the person named in the order submits a written request to the secretary for a public hearing. Upon such request the secretary shall promptly conduct a public hearing. The secretary shall appoint an independent hearing officer to preside over the public hearing. The hearing officer shall make and preserve a complete record of the proceedings and forward his recommendation based on the record to the secretary, who shall make the final decision.

I. In connection with any proceeding under this section, the secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books and documents and may promulgate rules for discovery procedures.

J. Penalties collected pursuant to an administrative order shall be deposited in the state treasury to be credited to the hazardous waste emergency fund.

History: 1963 Comp., § 12-9B-10, enacted by Laws 1977, ch. 313, § 10; reenacted by 1981 (1st S.S.), ch. 8, § 9; 1987, ch. 179, § 8; 1989, ch. 322, § 12; 1992, ch. 43, § 7.

The 1992 amendment, effective March 6, 1992,

added "civil penalties" at the end of the section catchline, substituted "secretary" for "director" several times throughout the section, rewrote the introductory paragraph of Subsection A, and made minor stylistic changes throughout the section.

Bankruptcy Code. — The federal Bankruptcy Code, referred to in Subsection G(1), appears as Title 11 of the United States Code.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 534 to 547.

Right to maintain action based on violation of § 7003 of Resource Conservation and Recovery Act (42 USCS § 6973) pertaining to imminent hazards from solid or hazardous waste, 105 A.L.R. Fed. 800.

74-4-10.1. Hazardous waste monitoring, analysis and testing.

A. If the director determines, upon receipt of any information, that:

(1) the presence of any hazardous waste at a facility or site at which hazardous waste is or has been stored, treated or disposed of; or

(2) the release of any such waste from such facility or site may present a substantial hazard to human health or the environment, he may issue an order requiring the owner or operator of such facility to conduct such monitoring, testing, analysis and reporting with respect to such facility or site as the director deems reasonable to ascertain the nature and extent of such hazard.

B. In the case of any facility or site not in operation at the time a determination is made under Subsection A of this section with respect to the facility or site, if the director finds that the owner of such facility or site could not reasonably be expected to have actual knowledge of the presence of hazardous waste at such facility or site and of its potential for release, the director may issue an order requiring the most recent previous owner or operator of such facility or site who could reasonably be expected to have actual knowledge to carry out the provisions referred to in Subsection A of this section.

C. Any order under Subsection A or B of this section shall require the person to whom such order is issued to submit to the director, within thirty days from the issuance of such order, a proposal for carrying out the required monitoring, testing, analysis and reporting. The director may, after providing such person with an opportunity to confer with the director respecting such proposal, require such person to carry out such monitoring, testing, analysis and reporting in accordance with such proposal and such modifications in such proposal as the director deems reasonable to ascertain the nature and extent of the hazard.

D. (1) If the director determines that no owner or operator referred to in Subsection A or B of this section is able to conduct monitoring, testing, analysis or reporting satisfactory to the director, if the director deems any such action carried out by an owner or operator to be unsatisfactory or if the director cannot initially determine that there is an owner or operator referred to in Subsection A or B of this section who is able to conduct such monitoring, testing, analysis or reporting, the division may:

(a) conduct monitoring, testing or analysis, or any combination thereof, which he deems reasonable to ascertain the nature and extent of the hazard associated with the site concerned; or

(b) authorize a local authority or other person to carry out any such action; and

(c) in either event the director may require, by order, the owner or operator referred to in Subsection A or B of this section to reimburse the division or other authority or person for the costs of such activity. Any reimbursement to the division pursuant to this subparagraph shall be deposited to the credit of the hazardous waste fund.

(2) No order may be issued under this subsection requiring reimbursement of the costs of any action carried out by the division which confirms the results of an order issued under Subsection A or B of this section.

(3) For purposes of carrying out this subsection, the director or any authority or other person authorized under Paragraph (1) of this subsection may exercise the authorities set forth in Section 74-4-4.3 NMSA 1978.

E. The director may commence a civil action against any person who fails or refuses to comply with an order issued under this section. Such action shall be brought in the district court of the county in which the defendant is located, resides or is doing business. Such court shall have jurisdiction to require compliance with such order and to assess a civil penalty not to exceed five thousand dollars (\$5,000) for each day during which such failure or refusal occurs.

History: 1978 Comp., § 74-4-10.1, enacted by
Laws 1989, ch. 322, § 13.

74-4-11. Penalty; criminal.

A. No person:

(1) shall knowingly transport or cause to be transported any hazardous waste identified or listed pursuant to the Hazardous Waste Act [this article] to a facility that does not have a permit under that act or the federal Resource Conservation and Recovery Act;

(2) shall knowingly treat, store or dispose of any hazardous waste identified or listed pursuant to the Hazardous Waste Act:

(a) without having obtained a hazardous waste permit pursuant to that act or the federal Resource Conservation and Recovery Act;

(b) in knowing violation of any material condition or requirement of a hazardous waste permit; or

(c) in knowing violation of any material condition or requirement of any applicable interim status regulations or standards;

(3) shall knowingly omit material information or make any false statement or representation in any application, label, manifest, record, report, permit or other document filed, maintained or used for purposes of compliance with the Hazardous Waste Act;

(4) who knowingly generates, stores, treats, transports, disposes of, exports or otherwise handles any hazardous waste shall knowingly destroy, alter, conceal or fail to file any record, application, manifest, report or other document required to be maintained or filed for purposes of compliance with regulations adopted and promulgated pursuant to the Hazardous Waste Act;

(5) shall knowingly transport without a manifest or cause to be transported without a manifest any hazardous waste required by regulations adopted and promulgated pursuant to the Hazardous Waste Act to be accompanied by a manifest; or

(6) shall knowingly export hazardous waste identified or listed pursuant to the Hazardous Waste Act:

(a) without the consent of the receiving country; or

(b) where there exists an international agreement between the United States and the government of the receiving country establishing notice, export and enforcement procedures for the transportation, treatment, storage and disposal of hazardous wastes, in a manner that is not in conformance with such agreement.

B. Any person who violates any of the provisions of Paragraphs (1) through (6) of Subsection A of this section is guilty of a fourth degree felony and upon conviction shall be punished by a fine of not more than ten thousand dollars (\$10,000) per violation per day or by imprisonment for a definite term of not more than eighteen months or both. For a second or subsequent violation of the provisions of Paragraphs (1) through (6) of Subsection A of this section, the person is guilty of a third degree felony and shall be punished by a fine of not more than twenty-five thousand dollars (\$25,000) per violation per day or by imprisonment for not more than three years or both.

C. Any person who knowingly violates any regulation adopted and promulgated pursuant to Subsection C of Section 74-4-4 or 74-4-4.4 NMSA 1978 is guilty of a misdemeanor and upon conviction shall be punished by a fine of not more than five thousand dollars (\$5,000) per violation per day or by imprisonment for a definite term of one year or both. For violations related to underground storage tanks, "per violation" means per tank.

D. Any person who knowingly transports, treats, stores, disposes of or exports any hazardous waste in violation of Subsection A of this section and who knows at the time of the violation that he creates a substantial danger of a substantial adverse environmental impact, is guilty of a third degree felony if the violation causes a substantial adverse environmental impact.

E. As used in this section, a "substantial adverse environmental impact" exists when an act or omission of a person causes harm or damage:

(1) to human beings; or

(2) to flora, wildlife, fish or other aquatic life or water fowl; to the habitats of wildlife, fish, other aquatic life, water fowl or livestock; to agricultural crops; to any ground water or surface water; or to the lands or waters of this state where such harm or damage amounts to more than ten thousand dollars (\$10,000).

F. Any person who knowingly transports, treats, stores, disposes of or exports any hazardous waste in violation of Subsection A of this section and who knows at the time of the violation that he creates a substantial danger of death or serious bodily injury to another person is guilty of a second degree felony and shall be sentenced to a term of imprisonment not to exceed nine years or a fine not to exceed one hundred thousand dollars (\$100,000), or both. Any person, other than an individual, that knowingly transports, treats, stores, disposes of or exports any hazardous waste in violation of Subsection A of this section and knows at that time that it places an individual in imminent danger of death or serious bodily injury is guilty of a second degree felony and shall be fined in an amount not to exceed two hundred fifty thousand dollars (\$250,000).

History: 1953 Comp., § 12-9B-11, enacted by Laws 1977, ch. 313, § 11; 1981 (1st S.S.), ch. 8, § 10; 1987, ch. 179, § 9; 1989, ch. 322, § 14; 1992, ch. 43, § 8.

The 1992 amendment, effective March 6, 1992, rewrote the provisions of former Subsection A and redesignated them as present Subsections A and B; added present Subsections C to E; redesignated former Subsection B as present Subsection F; and, in Subsection F substituted "creates a substantial danger" for "thereby places another person in imminent danger" and inserted "to another person" near the

middle of the first sentence while substituting "a term of imprisonment not to exceed nine years" for "nine years imprisonment" near the end of that sentence, and made minor stylistic changes throughout the subsection.

Resource Conservation and Recovery Act. — The federal Resource Conservation and Recovery Act, referred to in Subsection A, appears as 42 U.S.C. § 6901 et seq.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 590 to 602.

74-4-12. Penalty; civil.

Any person who violates any provision of the Hazardous Waste Act [this article], any regulation made pursuant to that act or any compliance order issued by the director pursuant to Section 74-4-10 NMSA 1978 may be assessed a civil penalty not to exceed ten thousand dollars (\$10,000) for each day during any portion of which a violation occurs. For violations related to underground storage tanks, "per violation" means per tank.

History: 1953 Comp., § 12-9B-12, enacted by Laws 1977, ch. 313, § 12; 1981 (1st S.S.), ch. 8, § 11; 1987, ch. 179, § 10; 1989, ch. 322, § 15.

Am. Jur. 2d, A.L.R. and C.J.S. references. — 61A Am. Jur. 2d Pollution Control §§ 518, 519.

74-4-13. Imminent hazards; authority of director; penalties.

A. Notwithstanding any other provision of the Hazardous Waste Act [this article], whenever the director is in receipt of evidence that the past or current handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste or the condition or maintenance of any underground storage tank may present an imminent and substantial endangerment to health or the environment, he may bring suit in the appropriate district court to immediately restrain any person, including any past or present generator, past or present transporter or past or present owner or operator of a treatment, storage or disposal facility, who has contributed or is contributing to such activity, to take such other action as may be necessary or both. A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment or disposal taking place after such solid waste or hazardous waste has left the possession or control of such transporter if the transportation of such waste was under a sole contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste. The director may also take other action, including but not limited to issuing such orders as may be necessary to protect health and the environment.

B. Any person who willfully violates or fails or refuses to comply with any order of the director under Subsection A of this section may in an action brought in the appropriate

district court to enforce such order be fined not more than five thousand dollars (\$5,000) for each day in which the violation occurs or the failure to comply continues.

C. Upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment to human health or the environment, the director shall provide immediate notice to the appropriate local government agencies. In addition, the director shall require notice of such endangerment to be promptly posted at the site where the waste is located.

History: Laws 1983, ch. 302, § 3; 1987, ch. 179, § 11; 1989, ch. 322, § 16.

74-4-14. Administrative actions; judicial review.

A. Any person who is or may be affected by any final administrative action of the board or the secretary may appeal to the court of appeals for further relief within thirty days after the action. All appeals shall be upon the record before the board or the secretary.

B. For appeals of regulations, the date of the action shall be the date of filing of the regulation under the State Rules Act [14-3-24, 14-3-25, 14-4-1 to 14-4-9 NMSA 1978].

C. Upon appeal, the court of appeals shall set aside the action only if it is found to be:

- (1) arbitrary, capricious or an abuse of discretion;
- (2) not supported by substantial evidence in the record; or
- (3) otherwise not in accordance with law.

D. A stay of enforcement of the action being appealed may be granted after hearing and upon good cause shown:

- (1) by the board or the secretary, whichever took the action being appealed; or
- (2) by the court of appeals if the board or the secretary denies a stay or fails to act upon an application for a stay within sixty days after receipt.

History: 1978 Comp., § 74-4-14, enacted by Laws 1992, ch. 43, § 6.

Emergency clauses. — Laws 1992, ch. 43, § 9 makes the act effective immediately. Approved March 6, 1992.

Compiler's notes. — This section was enacted as 74-4-6 NMSA 1978 but was redesignated by the compiler, since a section with the same code number had previously been enacted (repealed by Laws 1981 (1st S.S.), ch. 8, § 12).

ARTICLE 4A

Radioactive Materials

Sec.
74-4A-1. Radioactive material transport; conditions.
74-4A-2. Short title.
74-4A-3. Purpose.
74-4A-4. Definitions.
74-4A-5. Repealed.
74-4A-6. Task force.
74-4A-7. Duties of the task force.
74-4A-8. Powers of the task force.

Sec.
74-4A-9. Committee.
74-4A-10. Membership; appointment; vacancies.
74-4A-11. Committee duties.
74-4A-11.1. Condition.
74-4A-12. Subcommittees.
74-4A-13. Interrelationship with task force.
74-4A-14. Staff.
74-4A-15 to 74-4A-19. Repealed.

74-4A-1. Radioactive material transport; conditions.

A. The environmental improvement board shall have exclusive authority to promulgate regulations prescribing the conditions for transport of radioactive material on the highways. Such conditions shall include the conditions of transport that the environmental improvement board finds necessary to protect the health, safety and welfare of the citizens of the state. Except as specifically preempted by federal law, the state highway commission shall have the exclusive authority within New Mexico to designate highway routes for the transport of radioactive material. Any rule or regulation adopted by the environmental improvement board that designates highway routes for the transport of radioactive material and that was in effect prior to March 1, 1991, is deemed null and void. The state highway commission shall incorporate into the record and consider in the initial designa-

40 CFR 1996, (AS OF JULY 1, 1996)
Part 124, Subparts A through F and Appendix A

Comment: Certain sections are not included in this file for Part 124 because they are not required by 40 CFR Part 271.14 or the base program checklist for Part 124.

PART 124 -- PROCEDURES FOR DECISIONMAKING

Subpart A -- General Program Requirements

Sec.

124.1 Purpose and Scope.

124.2 Definitions.

124.3 Application for a permit.

124.4 Consolidation of permit processing.

124.5 Modification, revocation and reissuance, or termination of permits.

124.6 Draft permits.

124.7 Statement of basis.

124.8 Fact sheet.

124.9 Administrative record for draft permits when EPA is the permitting authority.

124.10 Public notice of permit actions and public comment period.

124.11 Public comments and requests for public hearings.

124.12 Public hearings.

124.13 Obligation to raise issues and provide information during the public comment period.

124.14 Reopening of the public comment period.

124.15 Issuance and effective date of permit.

124.16 Stays of contested permit conditions.

124.17 Response to comments.

124.18 Administrative record for final permit when EPA is the permitting authority.

124.19 Appeal of RCRA, UIC and PSD permits.

124.20 Computation of time.

124.21 Effective date of part 124.

Subpart B -- Specific Procedures Applicable to RCRA Permits

124.31 Pre-application public notice and meeting.

124.32 Public notice requirements at the application stage.

124.33 Information repository.

Note: The table of contents for Subparts D, E and F are not included because no portions of those subparts are required for RCRA authorization.

Subpart A -- General Program Requirements

§§ 124.1 and 124.2 have not been included in this file because they are not required as part of RCRA authorization.

§ 124.3 Application for a permit.

(a) Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA). (1) Any person who requires a permit under the RCRA, UIC, NPDES, or PSD programs shall complete, sign, and submit to the Director an application for each permit required under §§ 270.1 (RCRA), 144.1 (UIC), 40 CFR 52.21 (PSD), and 122.1 (NPDES). Applications are not required for RCRA permits by rule (§ 270.60), underground injections authorized by rules (§§ 144.21 through 144.26), NPDES general permits (§ 122.28) and 404 general permits (§ 233.37).

(2) The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit. See §§ 270.10, 270.13 (RCRA), 144.31 (UIC), 40 CFR 52.21 (PSD), and 122.21 (NPDES).

(3) Permit applications (except for PSD permits) must comply with the signature and certification requirements of §§ 122.22 (NPDES), 144.32 (UIC), 233.6 (404), and 270.11 (RCRA).

§ 124.3(b) through 124.4 have not been included in this file because they are not required as part of RCRA authorization.

§ 124.5 Modification, revocation and reissuance, or termination of permits.

(a) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). Permits (other than PSD permits) may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in § 122.62 or § 122.64

(NPDES), 144.39 or 144.40 (UIC), 233.14 or 233.15 (404), and 270.41 or 270.43 (RCRA). All requests shall be in writing and shall contain facts or reasons supporting the request.

§ 124.5(b) has not been included in this file because it is not required as part of RCRA authorization.

(c) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). (1) If the Director tentatively decides to modify or revoke and reissue a permit under §§ 122.62 (NPDES), 144.39 (UIC), 233.14 (404), or 270.41 or 270.42(c) (RCRA), he or she shall prepare a draft permit under § 124.6 incorporating the proposed changes. The Director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the Director shall require the submission of a new application.

(2) In a permit modification under this section, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.

(3) "Minor modifications" as defined in §§ 122.63 (NPDES), 144.41 (UIC), and 233.16 (404), and "Classes 1 and 2 modifications" as defined in § 270.42 (a) and (b) (RCRA) are not subject to the requirements of this section.

(d) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). If the Director tentatively decides to terminate a permit under §§ 122.64 (NPDES), 144.40 (UIC), 233.15 (404), or 270.43 (RCRA), he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under § 124.6. In the case of EPA-issued permits, a notice of intent to terminate shall not be issued if the Regional Administrator and the permittee agree to termination in the course of transferring permit responsibility to an approved State under §§ 123.24(b)(1) (NPDES), 145.24(b)(1) (UIC), 271.8(b)(6) (RCRA), or 501.14(b)(1) (Sludge).

§ 124.5(e) through 124.5(g)(2) have not been included in this file because they are not required as part of RCRA authorization.

§ 124.6 Draft permits.

(a) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) Once an application is complete, the Director shall tentatively decide whether to prepare a draft permit (except in the case of State

section 404 permits for which no draft permit is required under § 233.39) or to deny the application.

§ 124.6(b) and (c) have not been included in this file because they are not required as part of RCRA authorization.

(d) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) If the Director decides to prepare a draft permit, he or she shall prepare a draft permit that contains the following information:

(1) All conditions under §§ 122.41 and 122.43 (NPDES), 144.51 and 144.42 (UIC, 233.7 and 233.8 (404), or 270.30 and 270.32 (RCRA) (except for PSD permits));

(2) All compliance schedules under §§ 122.47 (NPDES), 144.53 (UIC), 233.10 (404), or 270.33 (RCRA) (except for PSD permits);

(3) All monitoring requirements under §§ 122.48 (NPDES), 144.54 (UIC), 233.11 (404), or 270.31 (RCRA) (except for PSD permits); and

(4) For:

(i) RCRA permits, standards for treatment, storage, and/or disposal and other permit conditions under § 270.30;

§ 124.6(d)(4)(ii) through (v) have not been included in this file because they are not required as part of RCRA authorization.

(e) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) All draft permits prepared by EPA under this section shall be accompanied by a statement of basis (§ 124.7) or fact sheet (§ 124.8), and shall be based on the administrative record (§ 124.9), publicly noticed (§ 124.10) and made available for public comment (§ 124.11). The Regional Administrator shall give notice of opportunity for a public hearing (§ 124.12), issue a final decision (§ 124.15) and respond to comments (§ 124.17). For RCRA, UIC or PSD permits, an appeal may be taken under § 124.19 and, for NPDES permits, an appeal may be taken under § 124.74. Draft permits prepared by a State shall be accompanied by a fact sheet if required under § 124.8.

§ 124.7 has not been included in this file because it is not required as part of RCRA authorization.

§ 124.8 Fact sheet.

(Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).)

(a) A fact sheet shall be prepared for every draft permit for a major HWM, UIC, 404, or NPDES facility or activity, for every Class I sludge management facility, for every 404 and NPDES general permit (§§ 237.37 and 122.28), for every NPDES draft permit that incorporates a variance or requires an explanation

under § 124.56(b), for every draft permit that includes a sewage sludge land application plan under 40 CFR 501.15(a)(2)(ix), and for every draft permit which the Director finds is the subject of wide-spread public interest or raises major issues. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. The Director shall send this fact sheet to the applicant and, on request, to any other person.

(b) The fact sheet shall include, when applicable:

(1) A brief description of the type of facility or activity which is the subject of the draft permit;

(2) The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.

§ 124.8(b)(3) has not been included in this file because it is not required as part of RCRA authorization.

(4) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by § 124.9 (for EPA-issued permits);

(5) Reasons why any requested variances or alternatives to required standards do or do not appear justified;

(6) A description of the procedures for reaching a final decision on the draft permit including:

(i) The beginning and ending dates of the comment period under § 124.10 and the address where comments will be received;

(ii) Procedures for requesting a hearing and the nature of that hearing; and

(iii) Any other procedures by which the public may participate in the final decision.

(7) Name and telephone number of a person to contact for additional information.

§ 124.8(b)(8) through § 124.9 have not been included in this file because they are not required as part of RCRA authorization.

§ 124.10 Public notice of permit actions and public comment period.

(a) Scope. (1) The Director shall give public notice that the following actions have occurred:

§ 124.10(a)(i), (iv), (v), (vi), (2) and (3) have not been included in this file because they are not required as part of RCRA authorization.

(ii) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). A draft permit has been prepared under § 124.6(d);

(iii) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404) and 271.14 (RCRA)). A hearing has been scheduled under § 124.12, subpart E or subpart F;

(b) Timing (applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). (1) Public notice of the preparation of a draft permit (including a notice of intent to deny a permit application) required under paragraph (a) of this section shall allow at least 30 days for public comment. For RCRA permits only, public notice shall allow at least 45 days for public comment. For EPA-issued permits, if the Regional Administrator determines under 40 CFR part 6, subpart F that an Environmental Impact Statement (EIS) shall be prepared for an NPDES new source, public notice of the draft permit shall not be given until after a draft EIS is issued.

(2) Public notice of a public hearing shall be given at least 30 days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

(c) Methods (applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). Public notice of activities described in paragraph (a)(1) of this section shall be given by the following methods:

(1) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits);

(i) The applicant (except for NPDES and 404 general permits when there is no applicant);

(ii) Any other agency which the Director knows has issued or is required to issue a RCRA, UIC, PSD (or other permit under the Clean Air Act), NPDES, 404, sludge management permit, or ocean dumping permit under the Marine Research Protection and Sanctuaries Act for the same facility or activity (including EPA when the draft permit is prepared by the State);

(iii) Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation Officers, including any affected States (Indian Tribes). (For purposes of this paragraph, and in the context of the Underground Injection Control Program only, the term State includes Indian Tribes treated as States.)

§ 124.10(c)(1)(iv), (v), (vi), (vii), and (viii) have not been included in this file because they are not required as part of RCRA authorization.

(ix) Persons on a mailing list developed by:

(A) Including those who request in writing to be on the list;

(B) Soliciting persons for "area lists" from participants in past permit proceedings in that area; and

(C) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as Regional and State funded newsletters, environmental bulletins, or State law journals. (The Director may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Director may delete from the list the name of any person who fails to respond to such a request.)

(x) (A) To any unit of local government having jurisdiction over the area where the facility is proposed to be located; and (B) to each State agency having any authority under State law with respect to the construction or operation of such facility.

(2) (i) For major permits, NPDES and 404 general permits, and permits that include sewage sludge land application plans under 40 CFR 501.15(a)(2)(ix), publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity; and for EPA-issued NPDES general permits, in the Federal Register;

Note: The Director is encouraged to provide as much notice as possible of the NPDES or Section 404 draft general permit to the facilities or activities to be covered by the general permit.

(ii) For all RCRA permits, publication of a notice in a daily or weekly major local newspaper of general circulation and broadcast over local radio stations.

(3) When the program is being administered by an approved State, in a manner constituting legal notice to the public under State law; and

(4) Any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

(d) Contents (applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)) -- (1) All public notices. All public notices issued under this part shall contain the following minimum information:

(i) Name and address of the office processing the permit action for which notice is being given;

(ii) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the

permit, except in the case of NPDES and 404 draft general permits under §§ 122.28 and 233.37;

(iii) A brief description of the business conducted at the facility or activity described in the permit application or the draft permit, for NPDES or 404 general permits when there is no application.

(iv) Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit, as the case may be, statement of basis or fact sheet, and the application; and

(v) A brief description of the comment procedures required by §§ 124.11 and 124.12 and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision.

(vi) For EPA-issued permits, the location of the administrative record required by § 124.9, the times at which the record will be open for public inspection, and a statement that all data submitted by the applicant is available as part of the administrative record.

§ 124.10(d)(1)(vii), (viii), and (viii) (A), (B), (C), (D) and (E) have not been included in this file because they are not required as part of RCRA authorization.

(ix) Any additional information considered necessary or proper.

(2) Public notices for hearings. In addition to the general public notice described in paragraph (d)(1) of this section, the public notice of a hearing under § 124.12, subpart E, or subpart F shall contain the following information:

(i) Reference to the date of previous public notices relating to the permit;

(ii) Date, time, and place of the hearing;

(iii) A brief description of the nature and purpose of the hearing, including the applicable rules and procedures; and

§ 124.10(d)(2)(iv) has not been included in this file because it is not required as part of RCRA authorization.

(e) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). In addition to the general public notice described in paragraph (d)(1) of this section, all persons identified in paragraphs (c)(1) (i), (ii), (iii), and (iv) of this section shall be mailed a copy of the fact sheet or statement of basis (for EPA-issued permits), the permit application (if any) and the draft permit (if any).

§ 124.11 Public comments and requests for public hearings.

(Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA)). During the public comment period provided under § 124.10, any interested person may submit written comments on the draft permit or the permit application for 404 permits when no draft permit is required (see § 233.39) and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in § 124.17.

§ 124.12 Public hearings.

(a) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) (1) The Director shall hold a public hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit(s);

(2) The Director may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision;

(3) For RCRA permits only, (i) the Director shall hold a public hearing whenever he or she receives written notice of opposition to a draft permit and a request for a hearing within 45 days of public notice under § 124.10(b)(1); (ii) whenever possible the Director shall schedule a hearing under this section at a location convenient to the nearest population center to the proposed facility;

(4) Public notice of the hearing shall be given as specified in § 124.10.

§ 124.12(b) through § 124.16 have not been included in this file because they are not required as part of RCRA authorization.

§ 124.17 Response to comments.

(a) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) At the time that any final permit decision is issued under § 124.15, the Director shall issue a response to comments. States are only required to issue a response to comments when a final permit is issued. This response shall:

(1) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(2) Briefly describe and respond to all significant comments on the draft permit or the permit application (for section 404

permits only) raised during the public comment period, or during any hearing.

§ 124.17(b) has not been included in this file because it is not required as part of RCRA authorization.

(c) (Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) The response to comments shall be available to the public.

§ 124.18 through 124.21 have not been included in this file because they are not required as part of RCRA authorization.

Subpart B -- Specific Procedure Applicable to RCRA Permits

§ 124.31 Pre-application public meeting and notice.

(a) Applicability. The requirements of this section shall apply to all RCRA part B applications seeking initial permits for hazardous waste management units over which EPA has permit issuance authority. The requirements of this section shall also apply to RCRA part B applications seeking renewal of permits for such units, where the renewal application is proposing a significant change in facility operations. For the purposes of this section, a "significant change" is any change that would qualify as a class 3 permit modification under 40 CFR 270.42. For the purposes of this section only, "hazardous waste management units over which EPA has permit issuance authority" refers to hazardous waste management units for which the State where the units are located has not been authorized to issue RCRA permits pursuant to 40 CFR part 271. The requirements of this section do not apply to permit modifications under 40 CFR 270.42 or to applications that are submitted for the sole purpose of conducting post-closure activities or post-closure activities and corrective action at a facility.

(b) Prior to the submission of a part B RCRA permit application for a facility, the applicant must hold at least one meeting with the public in order to solicit questions from the community and inform the community of proposed hazardous waste management activities. The applicant shall post a sign-in sheet or otherwise provide a voluntary opportunity for attendees to provide their names and addresses.

(c) The applicant shall submit a summary of the meeting, along with the list of attendees and their addresses developed under paragraph (b) of this section, and copies of any written comments or materials submitted at the meeting, to the permitting agency as a part of the part B application, in accordance with 40 CFR 270.14(b).

(d) The applicant must provide public notice of the pre-application meeting at least 30 days prior to the meeting. The applicant must maintain, and provide to the permitting agency upon request, documentation of the notice.

(1) The applicant shall provide public notice in all of the following forms:

(i) A newspaper advertisement. The applicant shall publish a notice, fulfilling the requirements in paragraph (d)(2) of this section, in a newspaper of general circulation in the county or equivalent jurisdiction that hosts the proposed location of the facility. In addition, the Director shall instruct the applicant to publish the notice in newspapers of general circulation in adjacent counties or equivalent jurisdictions, where the Director determines that such publication is necessary to inform the affected public. The notice must be published as a display advertisement.

(ii) A visible and accessible sign. The applicant shall post a notice on a clearly marked sign at or near the facility, fulfilling the requirements in paragraph (d)(2) of this section. If the applicant places the sign on the facility property, then the sign must be large enough to be readable from the nearest point where the public would pass by the site.

(iii) A broadcast media announcement. The applicant shall broadcast a notice, fulfilling the requirements in paragraph (d)(2) of this section, at least once on at least one local radio station or television station. The applicant may employ another medium with prior approval of the Director.

(iv) A notice to the permitting agency. The applicant shall send a copy of the newspaper notice to the permitting agency and to the appropriate units of State and local government, in accordance with § 124.10(c)(1)(x).

(2) The notices required under paragraph (d)(1) of this section must include:

(i) The date, time, and location of the meeting;

(ii) A brief description of the purpose of the meeting;

(iii) A brief description of the facility and proposed operations, including the address or a map (e.g., a sketched or copied street map) of the facility location;

(iv) A statement encouraging people to contact the facility at least 72 hours before the meeting if they need special access to participate in the meeting; and

(v) The name, address, and telephone number of a contact person for the applicant.

§ 124.32 Public notice requirements at the application stage.

(a) Applicability. The requirements of this section shall apply to all RCRA part B applications seeking initial permits for

hazardous waste management units over which EPA has permit issuance authority. The requirements of this section shall also apply to RCRA part B applications seeking renewal of permits for such units under 40 CFR 270.51. For the purposes of this section only, "hazardous waste management units over which EPA has permit issuance authority" refers to hazardous waste management units for which the State where the units are located has not been authorized to issue RCRA permits pursuant to 40 CFR part 271. The requirements of this section do not apply to permit modifications under 40 CFR 270.42 or permit applications submitted for the sole purpose of conducting post-closure activities or post-closure activities and corrective action at a facility.

(b) Notification at application submittal.

(1) The Director shall provide public notice as set forth in § 124.10(c)(1)(ix), and notice to appropriate units of State and local government as set forth in § 124.10(c)(1)(x), that a part B permit application has been submitted to the Agency and is available for review.

(2) The notice shall be published within a reasonable period of time after the application is received by the Director. The notice must include:

(i) The name and telephone number of the applicant's contact person;

(ii) The name and telephone number of the permitting agency's contact office, and a mailing address to which information, opinions, and inquiries may be directed throughout the permit review process;

(iii) An address to which people can write in order to be put on the facility mailing list;

(iv) The location where copies of the permit application and any supporting documents can be viewed and copied;

(v) A brief description of the facility and proposed operations, including the address or a map (e.g., a sketched or copied street map) of the facility location on the front page of the notice; and

(vi) The date that the application was submitted.

(c) Concurrent with the notice required under § 124.32(b) of this subpart, the Director must place the permit application and any supporting documents in a location accessible to the public in the vicinity of the facility or at the permitting agency's office.

§ 124.33 Information repository.

(a) Applicability. The requirements of this section apply to all applications seeking RCRA permits for hazardous waste management units over which EPA has permit issuance authority. For the purposes of this section only, "hazardous waste management units over which EPA has permit issuance authority" refers to hazardous waste management units for which the State where the units are located has not been authorized to issue RCRA permits pursuant to 40 CFR part 271.

(b) The Director may assess the need, on a case-by-case basis, for an information repository. When assessing the need for an information repository, the Director shall consider a variety of factors, including: the level of public interest; the type of facility; the presence of an existing repository; and the proximity to the nearest copy of the administrative record. If the Director determines, at any time after submittal of a permit application, that there is a need for a repository, then the Director shall notify the facility that it must establish and maintain an information repository. (See 40 CFR 270.30(m) for similar provisions relating to the information repository during the life of a permit).

(c) The information repository shall contain all documents, reports, data, and information deemed necessary by the Director to fulfill the purposes for which the repository is established. The Director shall have the discretion to limit the contents of the repository.

(d) The information repository shall be located and maintained at a site chosen by the facility. If the Director finds the site unsuitable for the purposes and persons for which it was established, due to problems with the location, hours of availability, access, or other relevant considerations, then the Director shall specify a more appropriate site.

(e) The Director shall specify requirements for informing the public about the information repository. At a minimum, the Director shall require the facility to provide a written notice about the information repository to all individuals on the facility mailing list.

(f) The facility owner/operator shall be responsible for maintaining and updating the repository with appropriate information throughout a time period specified by the Director. The Director may close the repository at his or her discretion, based on the factors in paragraph (b) of this section.

Part 124, Subpart C through Appendix C has not been included in this file because those regulations are not required as part of RCRA authorization.

>>>> End of 40 CFR Part 124. <<<<

THE SOLID WASTE DISPOSAL ACT

AS AMENDED BY

**THE HAZARDOUS AND SOLID WASTE AMEND-
MENTS OF 1984 (PUBLIC LAW 98-616);
THE SAFE DRINKING WATER ACT AMEND-
MENTS OF 1986 (PUBLIC LAW 99-339);
AND THE SUPERFUND AMENDMENTS AND
REAUTHORIZATION ACT OF 1986 (PUBLIC
LAW 99-499)**



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NOTE

Amendments to the Solid Waste Disposal Act made by the Hazardous and Solid Waste Amendments of 1984 (P.L. 98-616), the Safe Drinking Water Act Amendments of 1986 (P.L. 99-339), and the Superfund Amendments and Reauthorization Act of 1990 (P.L. 99-499) are shown as follows:

Language to be deleted is enclosed in black brackets; new language is printed in *italics*; and language in which there is a change is shown in roman. Footnotes will indicate whether an amendment was made by Public Law 99-339 or Public Law 99-499. The absence of a footnote indicates that the amendment was made by Public Law 98-616.

AN ACT To provide technical and financial assistance for the development of management plans and facilities for the recovery of energy and other resources from discarded materials and for the safe disposal of discarded materials, and to regulate the management of hazardous waste

Be it enacted by the Senate and House of Representatives of United States of America in Congress assembled,

TITLE II—SOLID WASTE DISPOSAL

Subtitle A—General Provisions

CONGRESSIONAL FINDINGS

SEC. 1002. (a) SOLID WASTE.—The Congress finds with respect to solid waste—

(1) that the continuing technological progress and improvement in methods of manufacture, packaging, and marketing of consumer products has resulted in an ever-mounting increase in the quantity of discarded materials, and in a change in the characteristics of the mass materials discarded by the purchaser of such products;

(2) that the economic and population growth of our Nation and the improvements in the standard of living enjoyed by the population, have required increased industrial production to meet our needs, and have made necessary the demolition of old buildings, the construction of new buildings, and the provision of highways and other avenues of transportation, which together with related industrial, commercial, and agricultural operations, have resulted in a rising tide of scrap, debris, and waste materials;

(3) that the continuing concentration of our population in expanding metropolitan and other urban areas has presented these communities with serious financial, management, inter-governmental, and technical problems in the disposal of solid wastes resulting from the industrial, commercial, domestic, and other activities carried on in such areas;

(4) that while the collection and disposal of solid wastes should continue to be primarily the function of State, regional, and local agencies, the problems of waste disposal, as set forth above have become a matter national in scope; in concern and necessitate Federal action through financial and technical assistance and leadership in the development, demonstration, and application of new and improved methods and processors to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid waste disposal practices.

(b) **ENVIRONMENT AND HEALTH.**—The Congress finds with respect to the environment and health, that—

(1) although land is too valuable a national resource to be needlessly polluted by discarded materials, most solid waste is disposed of on land in open dumps and sanitary landfills;

(2) disposal of solid waste and hazardous waste in or on the land without careful planning and management can present a danger to human health and the environment;

(3) as a result of the Clean Air Act, the Water Pollution Control Act, and other Federal and State laws respecting public health and the environment, greater amounts of solid waste (in the form of sludge and other pollution treatment residues) have been created. Similarly, inadequate and environmentally unsound practices for the disposal or use of solid waste have created greater amounts of air and water pollution and other problems for the environment and for health;

(4) open dumping is particularly harmful to health, contaminates drinking water from underground and surface supplies, and pollutes the air and land;

[(5) hazardous waste presents, in addition to the problems associated with nonhazardous solid waste, special dangers to health and requires a greater degree of regulation than does nonhazardous solid waste; and]

(5) the placement of inadequate controls on hazardous waste management will result in substantial risks to human health and the environment;

(6) if hazardous waste management is improperly performed in the first instance, corrective action is likely to be expensive, complex, and time consuming;

(7) certain classes of land disposal facilities are not capable of assuring long-term containment of certain hazardous wastes, and to avoid substantial risk to human health and the environment, reliance on land disposal should be minimized or eliminated, and land disposal, particularly landfill and surface impoundment, should be the least favored method for managing hazardous wastes; and

[(6)] (8) alternatives to existing methods of land disposal must be developed since many of the cities in the United

States will be running out of suitable solid waste disposal sites within five years unless immediate action is taken[.].

(c) **MATERIALS.**—The Congress finds with respect to materials, that—

(1) millions of tons of recoverable material which could be used are needlessly buried each year;

(2) methods are available to separate usable materials from solid waste; and

(3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments.

(d) **ENERGY.**—The Congress finds with respect to energy, that—

(1) solid waste represents a potential source of solid fuel, oil, or gas that can be converted into energy;

(2) the need exists to develop alternative energy sources for public and private consumption in order to reduce our dependence on such sources as petroleum products, natural gas, nuclear and hydroelectric generation; and

(3) technology exists to produce usable energy from solid waste.

OBJECTIVES AND NATIONAL POLICY

SEC. 1003. (a) **OBJECTIVES.**—The objectives of this Act are to promote the protection of health, and the environment and to conserve valuable material and energy resources by—

(1) providing technical and financial assistance to State and local governments and interstate agencies for the development of solid waste management plans (including resource recovery and resource conservation systems) which will promote improved solid waste management techniques (including more effective organizational arrangements), new and improved methods of collection, separation and recovery of solid waste, and the environmentally safe disposal of nonrecoverable residues;

(2) providing training grants in occupations involving the design, operation, and maintenance of solid waste disposal systems;

(3) prohibiting future open dumping on the land and requiring the conversion of existing open dumps to facilities which do not pose a danger to the environment or to health;

[(4) regulating the treatment, storage, transportation, and disposal of hazardous wastes which have adverse effects on health and the environment;]

(4) assuring that hazardous waste management practices are conducted in a manner which protects human health and the environment;

(5) requiring that hazardous waste be properly managed in the first instance thereby reducing the need for corrective action at a future date;

(6) minimizing the generation of hazardous waste and the land disposal of hazardous waste by encouraging process substitution, materials recovery, properly conducted recycling and reuse, and treatment;

(7) establishing a viable Federal-State partnership to carry out the purposes of this Act and insuring that the Administrator will, in carrying out the provisions of subtitle C of this Act, give a high priority to assisting and cooperating with States in obtaining full authorization of State programs under subtitle C;

[(5)] (8) providing for the promulgation of guidelines for solid waste collection, transport, separation, recovery, and disposal practices and systems;

[(6)] (9) promoting a national research and development program for improved solid waste management and resource conservation techniques, more effective organizational arrangements, and new and improved methods of collection, separation, and recovery and recycling of solid wastes and environmentally safe disposal of nonrecoverable resources;

[(7)] (10) promoting the demonstration, construction, and application of solid waste management, resource recovery, and resource conservation systems which preserve and enhance the quality of air, water, and land resources; and

[(8)] (11) establishing a cooperative effort among the Federal, State, and local governments and private enterprise in order to recover valuable materials and energy from solid waste.

(b) **NATIONAL POLICY.**—The Congress hereby declares it to be the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.

DEFINITIONS

SEC. 1004. As used in this Act:

(1) The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) The term "construction," with respect to any project of construction under this Act, means (A) the erection or building of new structures and acquisition of lands or interests therein, or the acquisition, replacement, expansion, remodeling, alteration, modernization, or extension of existing structures, and (B) the acquisition and installation of initial equipment of, or required in connection with, new or newly acquired structures or the expanded, remodeled, altered, modernized or extended part of existing structures (including trucks and other motor vehicles, and tractors, cranes, and other machinery) necessary for the proper utilization and operation of the facility after completion of the project; and includes preliminary planning to determine the economic and engineering feasibility and the public health and safety aspects of the project, the engineering, architectural, legal, fiscal, and economic investigations and studies, and any surveys, designs, plans, working drawing, specifications, and other action necessary for the carrying out of the project, and (C) the inspection and supervision of the process of carrying out the project to completion.

(3) The term "demonstration" means the initial exhibition of

tion or use of technologies, processes or practices, subsequent to the development stage, for the purpose of proving technological feasibility and cost effectiveness.

(3) The term "disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

(4) The term "Federal agency" means any department, agency or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

(5) The term "hazardous waste" means a solid waste, or combination of solid waste, which because of its quantity, concentration, physical, chemical, or infectious characteristics may—

(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

(6) The term "hazardous waste generation" means the act or process of producing hazardous waste.

(7) The term "hazardous waste management" means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

(8) For purposes of Federal financial assistance (other than rural communities assistance), the term "implementation" does not include the acquisition, leasing, construction, or modification of facilities or equipment or the acquisition, leasing or improvement of land.

(9) The term "intermunicipal agency" means an agency established by two or more municipalities with responsibility for planning or administration of solid waste.

(10) The term "interstate agency" means an agency of two or more municipalities in different States, or an agency established by two or more States, with authority to provide for the management of solid wastes and serving two or more municipalities located in different States.

(11) The term "long-term contract" means, when used in relation to solid waste supply, a contract of sufficient duration to assure viability of a resource recovery facility (to the extent that such liability depends upon solid waste supply).

(12) The term "manifest" means the form used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment, or storage.

(13) The term "municipality" (A) means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law, with responsibility for the planning or administration of solid waste management, or an Indian tribe authorized to

cludes any rural community or unincorporated town or village or any other public entity for which an application for assistance is made by a State or political subdivision thereof.

(14) The term "open dump" means any facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 and which is not a facility for disposal of hazardous waste.

(15) The term "person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

(16) The term "procurement item" means any device, good, substance, material, product, or other item whether real or personal property which is the subject of any purchase, barter, or other exchange made to procure such item.

(17) The term "procuring agency" means any Federal agency, or any State agency or agency of a political subdivision of a State which is using appropriated Federal funds for such procurement, or any person contracting with any such agency with respect to work performed under such contract.

(18) The term "recoverable" refers to the capability and likelihood of being recovered from solid waste for a commercial or industrial use.

(19) The term "recovered material" means waste material and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

(20) The term "recovered resources" means material or energy recovered from solid waste.

(21) The term "resource conservation" means reduction of the amounts of solid waste that are generated, reduction of overall resource consumption, and utilization of recovered resources.

(22) The term "resource recovery" means the recovery of material or energy from solid waste.

(23) The term "resource recovery system" means a solid waste management system which provides for collection, separation, recycling, and recovery of solid wastes, including disposal of nonrecoverable waste residues.

(24) The term "resource recovery facility" means any facility of which solid waste is processed for the purpose of extracting, converting to energy, or otherwise separating and preparing solid waste for reuse.

(25) The term "regional authority" means the authority established or designated under section 4006.

(26) The term "sanitary landfill" means a facility for the disposal of solid waste which meets the criteria published under section 4004.

(26A) The term "sludge" means any solid, semisolid or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

(27) The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

(28) The term "solid waste management" means the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

(29) The term "solid waste management facility" includes—

(A) any resource recovery system or component thereof,

(B) any system, program, or facility for resource conservation, and

(C) any facility for the collection, source separation, storage, transportation, transfer, processing, treatment or disposal of solid wastes, including hazardous wastes, whether such facility is associated with facilities generating such wastes or otherwise.

(30) The terms "solid waste planning", "solid waste management", and "comprehensive planning" include planning or management respecting resource recovery and resource conservation.

(31) The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(32) The term "State authority" means the agency established or designated under section 4007.

(33) The term "storage", when used in connection with hazardous waste, means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste.

(34) The term "treatment", when used in connection with hazardous waste, means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

(35) The term "virgin material" means a raw material, including previously unused copper, aluminum, lead, zinc, iron, or other metal or metal ore, any undeveloped resource that is, or with new technology will become, a source of raw materials.

(36) The term "used oil" means any oil which has been—

(A) refined from crude oil,

(B) used, and

(C) as a result of such use, contaminated by physical or chemical impurities.

(37) The term "recycled oil" means any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes oil which is re-refined, reclaimed, burned, or reprocessed.

(38) The term "lubricating oil" means the fraction of crude oil which is sold for purposes of reducing friction in any industrial or mechanical device. Such term includes re-refined oil.

(39) The term "re-refined oil" means used oil from which the physical and chemical contaminants acquired through previous use have been removed through a refining process.

GOVERNMENTAL COOPERATION

SEC. 1005. (a) INTERSTATE COOPERATION.—The provisions of this Act to be carried out by States may be carried out by interstate agencies and provisions applicable to States may apply to interstate regions where such agencies and regions have been established by the respective States and approved by the Administrator. In any such case, action required to be taken by the Governor of a State, respecting regional designation shall be required to be taken by the Governor of each of the respective States with respect to so much of the interstate region as is within the jurisdiction of that State.

(b) CONSENT OF CONGRESS TO COMPACTS.—The consent of the Congress is hereby given to two or more States to negotiate and enter into agreement or compacts, not in conflict with any law or treaty of the United States, for—

(1) cooperative effort and mutual assistance for the management of solid waste or hazardous waste (or both) and the enforcement of their respective laws relating thereto, and

(2) the establishment of such agencies, joint or otherwise, as they may deem desirable for making effective such agreements or compacts.

No such agreement or compact shall be binding or obligatory upon any State a party thereto unless it is agreed upon by all parties to the agreement and until it has been approved by the Administrator and the Congress.

APPLICATION OF ACT AND INTEGRATION WITH OTHER ACTS

SEC. 1006. (a) APPLICATION OF ACT.—Nothing in this Act shall be construed to apply to (or to authorize any State, interstate, or local authority to regulate) any activity or substance which is subject to the Federal Water Pollution Control Act (33 U.S.C. 1151 and following), the Safe Drinking Water Act (42 U.S.C. 300f and following), the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 and following), or the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following) except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.

(b) INTEGRATION WITH OTHER ACTS.—(1) The Administrator shall integrate all provisions of this Act for purposes of administration and enforcement and shall avoid duplication to the maximum

extent practicable, with the appropriate provisions of the Clean Air Act (42 U.S.C. 1857 and following), the Federal Water Pollution Control Act (33 U.S.C. 1151 and following), the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 and following), the Safe Drinking Water Act (42 U.S.C. 300f and following), the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 and following) and such other Acts of Congress as grant regulatory authority to the Administrator. Such integration shall be effected only to the extent that it can be done in a manner consistent with the goals and policies expressed in this Act and in the other acts referred to in this subsection.

(2)(A) As promptly as practicable after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a report describing—

(i) the current data and information available on emissions of polychlorinated dibenzo-p-dioxins from resource recovery facilities burning municipal solid waste;

(ii) any significant risks to human health posed by these emissions; and

(iii) operating practices appropriate for controlling these emissions.

(B) Based on the report under subparagraph (A) and on any future information on such emissions, the Administrator may publish advisories or guidelines regarding the control of dioxin emissions from such facilities. Nothing in this paragraph shall be construed to preempt or otherwise affect the authority of the Administrator to promulgate any regulations under the Clean Air Act regarding emissions of polychlorinated dibenzo-p-dioxins.

(3) Notwithstanding any other provisions of law, in developing solid waste plans, it is the intention of this Act that in determining the size of waste-to-energy facility, adequate provisions shall be given to present and reasonably anticipated future needs, including those needs created by thorough implementation of section 6002(h), of the recycling and resource recovery interests within the area encompassed by the solid waste plan.

(c) INTEGRATION WITH THE SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977.—(1) No later than 90 days after the date of enactment of the Solid Waste Disposal Act Amendments of 1980, the Administrator shall review any regulations applicable to the treatment, storage, or disposal of any coal mining wastes or overburden promulgated by the Secretary of the Interior under the Surface Mining and Reclamation Act of 1977. If the Administrator determines that any requirement of final regulations promulgated under any section of subtitle C relating to mining wastes or overburden is not adequately addressed in such regulations promulgated by the Secretary, the Administrator shall promptly transmit such determination, together with suggested revisions and supporting documentation, to the Secretary.

(2) The Secretary of the Interior shall have exclusive responsibility for carrying out any requirement of subtitle C of this Act with respect to coal mining wastes or overburden for which a surface coal mining and reclamation permit is issued or approved under the Surface Mining Control and Reclamation Act of 1977. The Secretary shall, with the concurrence of the Administrator, promul-

gulate such regulations as may be necessary to carry out the purposes of this subsection and shall integrate such regulations with regulations promulgated under the Surface Mining Control and Reclamation Act of 1977.

FINANCIAL DISCLOSURE

SEC. 1007. (a) **STATEMENT.**—Each officer or employee of the Administrator who—

- (1) performs any function or duty under this Act; and
 - (2) has any known financial interest in any person who applies for or receives financial assistance under this Act
- shall, beginning on February 1, 1977, annually file with the Administrator a written statement concerning all such interests held by such officer or employee during the preceding calendar year. Such statement shall be available to the public.

(b) **ACTION BY ADMINISTRATOR.**—The Administrator shall—

- (1) act within ninety days after the date of enactment of this Act—

(A) to define the term "known financial interest" for purposes of subsection (a) of this section; and

(B) to establish the methods by which the requirement to file written statements specified in subsection (a) of this section will be monitored and enforced, including appropriate provision for the filing by such officers and employees of such statements and the review by the Administrator of such statements; and

- (2) report to the Congress on June 1, 1978, and on each succeeding calendar year with respect to such disclosures and the actions taken in regard thereto during the preceding calendar year.

(c) **EXEMPTION.**—In the rules prescribed under subsection (b) of this section, the Administrator may identify specific positions within the Environmental Protection Agency which are of a nonpolicy-making nature and provide that officers or employees occupying such positions shall be exempt from the requirements of this section.

(d) **PENALTY.**—Any officer or employee who is subject to, and knowingly violates, this section shall be fined not more than \$2,500 or imprisoned not more than one year, or both.

SOLID WASTE MANAGEMENT INFORMATION AND GUIDELINES

SEC. 1008. (a) **GUIDELINES.**—Within one year of enactment of this section, and from time to time thereafter, the Administrator shall, in cooperation with appropriate Federal, State, municipal, and intermunicipal agencies, and in consultation with other interested persons, and after public hearings, develop and publish suggested guidelines for solid waste management. Such suggested guidelines shall—

- (1) provide a technical and economic description of the level of performance that can be attained by various available solid waste management practices (including operating practices) which provide for the protection of public health and the environment;

- (2) not later than two years after the enactment of this section, describe levels of performance, including appropriate methods and degrees of control, that provide at a minimum for (A) protection of public health and welfare; (B) protection of the quality of ground waters and surface waters from leachates; (C) protection of the quality of surface waters from runoff through compliance with effluent limitations under the Federal Water Pollution Control Act, as amended; (D) protection of ambient air quality through compliance with new source performance standards or requirements of air quality implementation plans under the Clean Air Act, as amended; (E) disease and vector control; (F) safety; and (G) esthetics; and
- (3) provide minimum criteria to be used by the States to define those solid waste management practices which constitute the open dumping of solid waste or hazardous waste and are to be prohibited under subtitle D of this Act.

Where appropriate, such suggested guidelines also shall include minimum information for use in deciding the adequate location, design, and construction of facilities associated with solid waste management practices, including the consideration of regional, geographic, demographic, and climatic factors.

(b) **NOTICE.**—The Administrator shall notify the Committee on Public Works² of the Senate and the Committee on Interstate and Foreign Commerce of the House of Representatives a reasonable time before publishing any suggested guidelines or proposed regulations under this Act of the content of such proposed suggested guidelines or proposed regulations under this Act.

Subtitle B—Office of Solid Waste; Authorities of the Administrator and Interagency Coordinating Committee

SEC. 2001. (a) **OFFICE OF SOLID WASTE.**—The Administrator shall establish within the Environmental Protection Agency an Office of Solid Waste (hereinafter referred to as the "Office") to be headed by an Assistant Administrator of the Environmental Protection Agency.³ The duties and responsibilities (other than duties and responsibilities relating to research and development) of the Administrator under this Act (as modified by applicable reorganization plans) shall be carried out through the Office.

(b) **INTERAGENCY COORDINATING COMMITTEE.**—(1) There is hereby established an Interagency Coordinating Committee on Federal Resource Conservation and Recovery Activities which shall have the responsibility for coordinating all activities dealing with resource conservation and recovery from solid waste carried out by the Environmental Protection Agency, the Department of Energy, the Department of Commerce, and all other Federal agencies which conduct such activities pursuant to this or any other Act. For purposes of this subsection, the term "resource conservation and recovery activities" shall include, but not be limited to, all research, development and demonstration projects on resource conservation or

² Pursuant to the adoption of S. Res. 4, Senate Committee Reorganization, the committee was renamed "Committee on Environment and Public Works."

³ This amendment was made by Public Law 95-810.

energy, or material, recovery from solid waste, and all technical or financial assistance for State or local planning for, or implementation of, projects related to resource conservation or energy or material, recovery from solid waste. The Committee shall be chaired by the Administrator of the Environmental Protection Agency or such person as the Administrator may designate. Members of the Committee shall include representatives of the Department of Energy, the Department of Commerce, the Department of the Treasury, and each other Federal agency which the Administrator determines to have programs or responsibilities affecting resource conservation or recovery.

(2) The Interagency Coordinating Committee shall include oversight of the implementation of

(A) the May 1979 Memorandum of Understanding on Energy Recovery from Municipal Solid Waste between the Environmental Protection Agency and the Department of Energy;

(B) the May 30, 1978, Interagency Agreement between the Department of Commerce and the Environmental Protection Agency on the Implementation of the Resource Conservation and Recovery Act; and

(C) any subsequent agreements between these agencies or other Federal agencies which address Federal resource recovery or conservation activities.

(3) The Interagency Coordinating Committee shall submit to the Congress by March 1, 1981, and on March 1 each year thereafter, a five-year action plan for Federal resource conservation or recovery activities which shall identify means and propose programs to encourage resource conservation or material and energy recovery and increase private and municipal investment in resource conservation or recovery systems, especially those which provide for material conservation or recovery as well as energy conservation or recovery. Such plan shall describe, at a minimum, a coordinated and nonduplicatory plan for resource recovery and conservation activities for the Environmental Protection Agency, the Department of Energy, the Department of Commerce, and all other Federal agencies which conduct such activities.

AUTHORITIES OF ADMINISTRATOR

SEC. 2002. (a) **AUTHORITIES.**—In carrying out this Act, the Administrator is authorized to—

(1) prescribe, in consultation with Federal, State, and regional authorities, such regulations as are necessary to carry out his functions under this Act;

(2) consult with or exchange information with other Federal agencies undertaking research, development, demonstration projects, studies, or investigations relating to solid waste;

(3) provide technical and financial assistance to States or regional agencies in the development and implementation of solid waste plants and hazardous waste management programs;

(4) consult with representatives of science, industry, agriculture, labor, environmental protection and consumer organizations, and other groups, as he deems advisable;

(5) utilize the information, facilities, personnel and other resources of Federal agencies, including the National Bureau of Standards and the National Bureau of the Census, on a reimbursable basis, to perform research and analyses and conduct studies and investigations related to resource recovery and conservation and to otherwise carry out the Administrator's functions under this Act; and

(6) to delegate to the Secretary of Transportation the performance of any inspection or enforcement function under this Act relating to the transportation of hazardous waste where such delegation would avoid unnecessary duplication of activity and would carry out the objectives of this Act and of the Hazardous Materials Transportation Act.

(b) **REVISION OF REGULATIONS.**—Each regulation promulgated under this Act shall be reviewed and, where necessary, revised not less frequently than every three years.

(c) **CRIMINAL INVESTIGATIONS.**—In carrying out the provisions of this Act, the Administrator, and duly-designated agents and employees of the Environmental Protection Agency, are authorized to initiate and conduct investigations under the criminal provisions of this Act, and to refer the results of these investigations to the Attorney General for prosecution in appropriate cases.

RESOURCE RECOVERY AND CONSERVATION PANELS

SEC. 2003. The Administrator shall provide teams of personnel, including Federal, State, and local employees or contractors (hereinafter referred to as "Resource Conservation and Recovery Panels") to provide Federal agencies, States, and local governments, upon request, with technical assistance on solid waste management, resource recovery and resource conservation. Such teams shall include technical, marketing, financial, and institutional specialists, and the services of such teams shall be provided without charge to States or local governments.

GRANTS FOR DISCARDED TIRE DISPOSAL

SEC. 2004. (a) **GRANTS.**—The Administrator shall make available grants equal to 5 percent of the purchase price of tire shredders (including portable shredders attached to tire collection trucks) to those eligible applicants best meeting criteria promulgated under this section. An eligible applicant may be any private purchaser, public body, or public-private joint venture. Criteria for receiving grants shall be promulgated under this section and shall include the policy to offer any private purchaser the first option to receive a grant, the policy to develop widespread geographic distribution of tire shredding facilities, the need for such facilities within a geographic area, and the projected risk and viability of any such venture. In the case of an application under this section from a public body, the Administrator shall first make a determination that there are no private purchasers interested in making an application before approving a grant to a public body.

(b) **AUTHORIZATION.**—There is authorized to be appropriated \$750,000 for each of the fiscal years 1978 and 1979 to carry out this section.

LABELING OF CERTAIN OIL

SEC. 2005. For purposes of any provision of law which requires the labeling of commodities, including oil shall be treated as lawfully labeled only if it bears the following statement, prominently displayed:

"DON'T POLLUTE—CONSERVE RESOURCES; RETURN USED OIL TO COLLECTION CENTERS"

ANNUAL REPORT

SEC. 2006. The Administrator shall transmit to the Congress and the President, not later than ninety days after the end of each fiscal year, a comprehensive and detailed report on all activities of the Office during the preceding fiscal year. Each such report shall include—

(1) a statement of specific and [detail] detailed objectives for the activities and programs conducted and assisted under this Act;

(2) statements of the Administrator's conclusions as to the effectiveness of such activities and programs in meeting the stated objectives and the purposes of this Act, measured through the end of such fiscal year;

(3) a summary of outstanding solid waste problems confronting the Administrator, in order of priority;

(4) recommendations with respect to such legislation which the Administrator deems necessary or desirable to assist in solving problems respecting solid waste;

(5) all other information required to be submitted to the Congress pursuant to any other provision of this Act; and

(6) the Administrator's plans for activities and programs respecting solid waste during the next fiscal year.

GENERAL AUTHORIZATION

SEC. 2007. (a) **GENERAL ADMINISTRATION.**—There are authorized to be appropriated to the Administrator for the purpose of carrying out the provisions of this Act, \$35,000,000 for the fiscal year ending September 30, 1977, \$38,000,000 for the fiscal year ending September 30, 1978, \$42,000,000 for the fiscal year ending September 30, 1979, \$70,000,000 for the fiscal year ending September 30, 1980, \$80,000,000 for the fiscal year ending September 30, 1981, [and \$80,000,000 for the fiscal year ending September 30, 1982.] \$80,000,000 for the fiscal year ending September 30, 1982, \$70,000,000 for the fiscal year ending September 30, 1985, \$80,000,000 for the fiscal year ending September 30, 1986, \$80,000,000 for the fiscal year ending September 30, 1987, and \$80,000,000 for the fiscal year 1988.

(b) **RESOURCE RECOVERY AND CONSERVATION PANELS.**—Not less than 20 percent of the amount appropriated under subsection (a), or \$5,000,000 per fiscal year, whichever is less, shall be used only for purposes of Resource Recovery and Conservation Panels established under section 2003 (including travel expenses incurred by panels in carrying out their functions under this Act).

(c) **HAZARDOUS WASTE.**—Not less than 30 percent of the amount appropriated under subsection (a) shall be used only for purposes of carrying out subtitle C of this Act (relating to hazardous waste) other than section 3011.

(d) **STATE AND LOCAL SUPPORT.**—Not less than 25 per centum of the total amount appropriated under this title, up to the amount authorized in section 4008(a)(1), shall be used only for purposes of support to State, regional, local, and interstate agencies in accordance with subtitle D of this Act other than section 4008(a)(2) or 4009.

(e) **CRIMINAL INVESTIGATORS.**—There is authorized to be appropriated to the Administrator \$3,246,000 for the fiscal year 1985, \$2,408,300 for the fiscal year 1986, \$2,529,000 for the fiscal year 1987, and \$2,529,000 for the fiscal year 1988 to be used—

(1) for additional officers or employees of the Environmental Protection Agency authorized by the Administrator to conduct criminal investigations (to investigate, or supervise the investigation of, any activity for which a criminal penalty is provided) under this Act; and

(2) for support costs for such additional officers or employees.

(f) **UNDERGROUND STORAGE TANKS.**—(1) There are authorized to be appropriated to the Administrator for the purpose of carrying out the provisions of subtitle I (relating to regulation of underground storage tanks), \$10,000,000 for each of the fiscal years 1985 through 1988.

(2) There is authorized to be appropriated \$25,000,000 for each of the fiscal years 1985 through 1988 to be used to make grants to the States for purposes of assisting the States in the development and implementation of approved State underground storage tank release detection, prevention, and correction programs under subtitle I.

OFFICE OF OMBUDSMAN

SEC. 2008. (a) **ESTABLISHMENT; FUNCTIONS.**—The Administrator shall establish an Office of Ombudsman, to be directed by an Ombudsman. It shall be the function of the Office of Ombudsman to receive individual complaints, grievances, requests for information submitted by any person with respect to any program or requirement under this Act.

(b) **AUTHORITY TO RENDER ASSISTANCE.**—The Ombudsman shall render assistance with respect to the complaints, grievances, and requests submitted to the Office of Ombudsman, and shall make appropriate recommendations to the Administrator.

(c) **EFFECT ON PROCEDURES FOR GRIEVANCES, APPEALS, OR ADMINISTRATIVE MATTERS.**—The establishment of the Office of Ombudsman shall not affect any procedures for grievances, appeals, or administrative matters in any other provision of this Act, any other provision of law, or any Federal regulation.

(d) **TERMINATION.**—The Office of the Ombudsman shall cease to exist 4 years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

Subtitle C—Hazardous Waste Management

IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SEC. 3001. (a) CRITERIA FOR IDENTIFICATION OR LISTING.—Not later than eighteen months after the date of the enactment of this Act, the Administrator shall, after notice and opportunity for public hearing, and after consultation with appropriate Federal and State agencies, develop and promulgate criteria for identifying the characteristics of hazardous waste, and for listing hazardous waste, which should be subject to the provisions of this subtitle, taking into account toxicity, persistence, and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics. Such criteria shall be revised from time to time as may be appropriate.

(b)(1) IDENTIFICATION AND LISTING.—Not later than eighteen months after the date of enactment of this section, and after notice and opportunity for public hearing, the Administrator shall promulgate regulations identifying the characteristics of hazardous waste, and listing particular hazardous wastes (within the meaning of section 1004(5)), which shall be subject to the provisions of this subtitle. Such regulations shall be based on the criteria promulgated under subsection (a) and shall be revised from time to time thereafter as may be appropriate. *The Administrator, in cooperation with the Agency for Toxic Substances and Disease Registry and the National Toxicology Program, shall also identify or list those hazardous wastes which shall be subject to the provisions of this subtitle solely because of the presence in such wastes of certain constituents (such as identified carcinogens, mutagens, or teratogens) at levels in excess of levels which endanger human health.*

(2)(A) Notwithstanding the provisions of paragraph (1) of this subsection, drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy shall be subject only to existing State or Federal regulatory programs in lieu of subtitle C until at least 24 months after the date of enactment of the Solid Waste Disposal Act Amendments of 1980 and after promulgation of the regulations in accordance with subparagraphs (B) and (C) of this paragraph. It is the sense of the Congress that such State or Federal programs should include, for waste disposal sites which are to be closed, provisions requiring at least the following:

(i) The identification through surveying, platting, or other measures, together with recordation of such information on the public record, so as to assure that the location where such wastes are disposed of can be located in the future; except however, that no such surveying, platting, or other measure identifying the location of a disposal site for drilling fluids and associated wastes shall be required if the distance from the disposal site to the surveyed or platted location to the associated well is less than two hundred linear feet; and

(ii) A chemical and physical analysis of a produced water or a drilling fluid suspected to contain a haz-

ardous material, with such information to be acquired or to closure and to be placed on the public record.

(B) Not later than six months after completion and submission of the study required by section 8002(m) of this Act, the Administrator shall, after public hearings and opportunity for comment, determine either to promulgate regulations under this subtitle for drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy or that such regulations are unwarranted. The Administrator shall publish his decision in the Federal Register accompanied by an explanation and justification of the reasons for it. In making the decision under this paragraph, the Administrator shall utilize the information developed or accumulated pursuant to the study required under section 8002(m).

(C) The Administrator shall transmit his decision, along with any regulations, if necessary, to both Houses of Congress. Such regulations shall take effect only when authorized by Act of Congress.

(3)(A) Notwithstanding the provisions of paragraph (1) of this subsection, each waste listed below shall, except as provided in subparagraph (B) of this paragraph, be subject only to regulation under other applicable provisions of Federal or State law in lieu of this subtitle until at least six months after the date of submission of the applicable study required to be conducted under subsection (f), (n), (o), or (p) of section 8002 of this Act and after promulgation of regulations in accordance with subparagraph (C) of this paragraph:

(i) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(ii) Solid waste from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore.

(iii) Cement kiln dust waste.

"(B)(i) Owners and operators of disposal sites for wastes listed in subparagraph (A) may be required by the Administrator, through regulations prescribed under authority of section 2002 of this Act—

(I) as to disposal sites for such wastes which are to be closed, to identify the locations of such sites through surveying, platting, or other measures, together with recordation of such information on the public record, to assure that the locations where such wastes are disposed of are known and can be located in the future, and

(II) to provide chemical and physical analysis and composition of such wastes, based on available information, to be placed on the public record.

(ii)(1) In conducting any study under subsection (f), (n), (o), or (p) of section 8002 of this Act, any officer, employee, or authorized representative of the Environmental Protection Agency, duly designated by the Administrator, is authorized, at reasonable times and as reasonably necessary for the purposes of such study, to enter any establishment where any waste subject to such study is generated, stored, treated, disposed of, or transported from; to inspect, take samples, and conduct monitoring and testing; and to have access to and copy records relating to such waste. Each such in-

be commenced and completed with reasonable promptness. If the officer, employee, or authorized representative obtains any samples prior to leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the sample obtained and if requested a portion of each such sample equal in volume or weight to the portion retained. If any analysis is made of such samples, or monitoring and testing performed, a copy of the results shall be furnished promptly to the owner, operator, or agent in charge.

(II) Any records, reports, or information obtained from any person under subclause (I) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof, to which the Administrator has access under this subparagraph if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, the Administrator shall consider such information or particular portion thereof confidential in accordance with the purposes of that section, except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act. Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subparagraph shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

(iii) The Administrator may prescribe regulations, under the authority of this Act, to prevent radiation exposure which presents an unreasonable risk to human health from the use in construction or land reclamation (with or without revegetation) of (I) solid waste from the extraction, beneficiation, and processing of phosphate rock or (II) overburden from the mining of uranium ore.

(iv) Whenever on the basis of any information the Administrator determines that any person is in violation of any requirement of this subparagraph, the Administrator shall give notice to the violator of his failure to comply with such requirement. If such violation extends beyond the thirtieth day after the Administrator's notification, the Administrator may issue an order requiring compliance within a specified time period or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

(C) Not later than six months after the date of submission of the applicable study required to be conducted under subsection (f), (n), (o), or (p), of section 8002 of this Act, the Administrator shall, after public hearings and opportunity for comment, either determine to promulgate regulations under this subtitle for each waste listed in subparagraph (A) of this paragraph or determine that such regulations are unwarranted. The Administrator shall publish his determination, which shall be based on information developed or accumulated pursuant to such study, public hearings, and comment, in the Federal Register accompanied by an explanation and justification of the reasons for it.

(c) PETITION BY STATE GOVERNMENT.—Any State or

any State may petition the Administrator to identify or list a material as a hazardous waste. The Administrator shall act upon such petition within ninety days following his receipt thereof and shall notify the Governor of such action. If the Administrator denies such petition because of financial consideration, in providing such notice to the Governor he shall include a statement concerning such considerations.

(d) **SMALL QUANTITY GENERATOR WASTE.**—(1) By March 31, 1986, the Administrator shall promulgate standards under sections 3002, 3003, and 3004 for hazardous waste generated by a generator in a total quantity of hazardous waste greater than one hundred kilograms but less than one thousand kilograms during a calendar month.

(2) The standards referred to in paragraph (1), including standards applicable to the legitimate use, reuse, recycling, and reclamation of such wastes, may vary from the standards applicable to hazardous waste generated by larger quantity generators, but such standards shall be sufficient to protect human health and the environment.

(3) Not later than two hundred and seventy days after the enactment of the Hazardous and Solid Waste Amendments of 1984 any hazardous waste which is part of a total quantity generated by a generator generating greater than one hundred kilograms but less than one thousand kilograms during one calendar month and which is shipped off the premises on which such waste is generated shall be accompanied by a copy of the Environmental Protection Agency Uniform Hazardous Waste Manifest form signed by the generator. This form shall contain the following information:

- (A) the name and address of the generator of the waste;
- (B) the United States Department of Transportation description of the waste, including the proper shipping name, hazard class, and identification number (UN/NA), if applicable;
- (C) the number and type of containers;
- (D) the quantity of waste being transported; and
- (E) the name and address of the facility designated to receive the waste.

If subparagraph (B) is not applicable, in lieu of the description referred to in such subparagraph (B), the form shall contain the Environmental Protection Agency identification number, or a generic description of the waste, or a description of the waste by hazardous waste characteristic. Additional requirements related to the manifest form shall apply only if determined necessary by the Administrator to protect human health and the environment.

(4) The Administrator's responsibility under this subtitle to protect human health and the environment may require the promulgation of standards under this subtitle for hazardous wastes which are generated by any generator who does not generate more than one hundred kilograms of hazardous waste in a calendar month.

(5) Until the effective date of standards required to be promulgated under paragraph (1), any hazardous waste identified or listed under section 3001 generated by any generator during any calendar month in a total quantity greater than one hundred kilograms

cility with a permit under section 3005, shall be disposed of only in a facility which is permitted, licensed, or registered by a State to manage municipal or industrial solid waste.

(6) Standards promulgated as provided in paragraph (1) shall, at a minimum, require that all treatment, storage, or disposal of hazardous wastes generated by generators referred to in paragraph (1) shall occur at a facility with interim status or a permit under this subtitle, except that onsite storage of hazardous waste generated by a generator generating a total quantity of hazardous waste greater than one hundred kilograms, but less than one thousand kilograms during a calendar month, may occur without the requirement of a permit for up to one hundred and eighty days. Such onsite storage may occur without the requirement of a permit for not more than six thousand kilograms for up to two hundred and seventy days if such generator must ship or haul such waste over two hundred miles.

(7XA) Nothing in this subsection shall be construed to affect or impair the validity of regulations promulgated by the Secretary of Transportation pursuant to the Hazardous Materials Transportation Act.

(B) Nothing in this subsection shall be construed to affect, modify, or render invalid any requirements in regulations promulgated prior to January 1, 1983 applicable to any acutely hazardous waste identified or listed under section 3001 which is generated by any generator during any calendar month in a total quantity less than one thousand kilograms.

(8) Effective March 31, 1986, unless the Administrator promulgates standards as provided in paragraph (1) of this subsection prior to such date, hazardous waste generated by any generator in a total quantity greater than one hundred kilograms but less than one thousand kilograms during a calendar month shall be subject to the following requirements until the standards referred to in paragraph (1) of this subsection have become effective:

(A) the notice requirements of paragraph (3) of this subsection shall apply and in addition, the information provided in the form shall include the name of the waste transporters and the name and address of the facility designated to receive the waste;

(B) except in the case of the onsite storage referred to in paragraph (6) of this subsection, the treatment, storage, or disposal of such waste shall occur at a facility with interim status or a permit under this subtitle;

(C) generators of such waste shall file manifest exception reports as required of generators producing greater amounts of hazardous waste per month except that such reports shall be filed by January 31, for any waste shipment occurring in the last half of the preceding calendar year, and by July 31, for any waste shipment occurring in the first half of the calendar year; and

(D) generators of such waste shall retain for three years a copy of the manifest signed by the designated facility that has received the waste.

ing in this paragraph shall be construed as a determination

(9) The last sentence of section 3010(b) shall not apply to regulations promulgated under this subsection.

(c) SPECIFIED WASTES.—(1) Not later than 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, where appropriate, list under subsection (b)(1), additional waste containing chlorinated dioxins or chlorinated dibenzofurans. Not later than one year after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, where appropriate, list under subsection (b)(1) wastes containing remaining halogenated dioxins and halogenated dibenzofurans.

(2) Not later than fifteen months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall make a determination of whether or not to list under subsection (b)(1) the following wastes: Chlorinated Aliphatics, Dioxin, Dimethyl Hydrazine, TDI (toluene diisocyanate), Carbamates, Bromacil, Linuron, Organo-bromines, solvents, refining wastes, chlorinated aromatics, dyes and pigments, inorganic chemical industry wastes, lithium batteries, coke byproducts, paint production waste, and coal slurry pipeline effluent.

(f) DELISTING PROCEDURES.—(1) When evaluating a petition to exclude a waste generated at a particular facility from listing under this section, the Administrator shall consider factors (including additional constituents) other than those for which the waste was listed if the Administrator has a reasonable basis to believe that such additional factors could cause the waste to be a hazardous waste. The Administrator shall provide notice and opportunity for comment on these additional factors before granting or denying such petition.

(2XA) To the maximum extent practicable the Administrator shall publish in the Federal Register a proposal to grant or deny a petition referred to in paragraph (1) within twelve months after receiving a complete application to exclude a waste generated at a particular facility from being regulated as a hazardous waste and shall grant or deny such a petition within twenty-four months after receiving a complete application.

(B) The temporary granting of such a petition prior to the enactment of the Hazardous and Solid Waste Amendments of 1984 without the opportunity for public comment and the full consideration of such comments shall not continue for more than twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984. If a final decision to grant or deny such a petition has not been promulgated after notice and opportunity for public comment within the time limit prescribed by the preceding sentence, any such temporary granting of such petition shall cease to be in effect.

(g) EP TOXICITY.—Not later than twenty-eight months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 the Administrator shall examine the deficiencies of the extraction procedure toxicity characteristic as a predictor of the leaching potential of wastes and make changes in the extraction procedure toxicity characteristic, including changes in the leaching media, as are necessary to insure that it accurately reflects the

leaching potential of wastes which pose a threat to human health and the environment when mismanaged.

(h) **ADDITIONAL CHARACTERISTICS.**—Not later than two years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate regulations under this section identifying additional characteristics of hazardous waste, including measures or indicators of toxicity.

(i) **CLARIFICATION OF HOUSEHOLD WASTE EXCLUSION.**—A resource recovery facility recovering energy from the mass burning of municipal solid waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous waste for the purposes of regulation under this subtitle, if—

(1) such facility—

(A) receives and burns only—

(i) household waste (from single, and multiple dwellings, hotels, motels, and other residential sources) and

(ii) solid waste from commercial or industrial sources that does not contain hazardous waste identified or listed under this section, and

(B) does not accept hazardous wastes identified or listed under this section, and

(2) the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in such facility.

STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

SEC. 3002. (a) **IN GENERAL.**—Not later than eighteen months after the date of the enactment of this section, and after notice and opportunity for public hearings and after consultation with appropriate Federal and State agencies, the Administrator shall promulgate regulations establishing such standards applicable to generators of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. Such standards shall establish requirements respecting—

(1) recordkeeping practices that accurately identify the quantities of such hazardous waste generated, the constituents thereof which are significant in quantity or in potential harm to human health or the environment, and the disposition of such waste;

(2) labeling practices for any container used for the storage, transport, or disposal of such hazardous waste such as will identify accurately such waste;

(3) use of appropriate containers for such hazardous waste;

(4) furnishing of information on the general chemical composition of such hazardous waste to persons transporting, treating, storing, or disposing of such wastes;

(5) use of a manifest system and any other reasonable means necessary to assure that all such hazardous waste generated is designated for treatment, storage, or disposal in and arrives at, treatment, storage, or disposal facilities (other than facilities at the premises where the waste is generated) for which a permit has been issued as provided in this subtitle or in

to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052), and

[(6) submission of reports to the Administrator (or the State agency in any case in which such agency carries out an authorized permit program pursuant to this subtitle) at such times as the Administrator (or the State agency if appropriate) deems necessary, setting out—

[(A) the quantities of hazardous waste identified or listed under this subtitle that he has generated during a particular time period; and

[(B) the disposition of all hazardous waste reported under subparagraph (A).]

(6) submission of reports to the Administrator (or the State agency in any case in which such agency carries out a permit program pursuant to this subtitle) at least once every two years, setting out—

(A) the quantities and nature of hazardous waste identified or listed under this subtitle that he has generated during the year;

(B) the disposition of all hazardous waste reported under subparagraph (A);

(C) the efforts undertaken during the year to reduce the volume and toxicity of waste generated; and

(D) the changes in volume and toxicity of waste actually achieved during the year in question in comparison with previous years, to the extent such information is available for years prior to enactment of the Hazardous and Solid Waste Amendments of 1984.

(b) **WASTE MINIMIZATION.**—Effective September 1, 1985, the manifest required by subsection (a)(5) shall contain a certification by the generator that—

(1) the generator of the hazardous waste has a program in place to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) the proposed method of treatment, storage, or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment.

STANDARDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTE

SEC. 3003. (a) **STANDARDS.**—Not later than eighteen months after the date of enactment of this section, and after opportunity for public hearings, the Administrator, after consultation with the Secretary of Transportation and the States, shall promulgate regulations establishing such standards, applicable to transporters of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. Such standards shall include but need not be limited to requirements respecting—

(1) recordkeeping concerning such hazardous waste transported, and their source and delivery points.

(3) compliance with the manifest system referred to in section 3002(5); and

(4) transportation of all such hazardous waste only to the hazardous waste treatment, storage, or disposal facilities which the shipper designates on the manifest form to be a facility holding a permit issued under this subtitle, or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052).

(b) **COORDINATION WITH REGULATIONS OF SECRETARY OF TRANSPORTATION.**—In case of any hazardous waste identified or listed under this subtitle which is subject to the Hazardous Materials Transportation Act (88 Stat. 2156; 49 U.S.C. 1801 and following), the regulations promulgated by the Administrator under this section shall be consistent with the requirements of such Act and the regulations thereunder. The Administrator is authorized to make recommendations to the Secretary of Transportation respecting the regulations of such hazardous waste under the Hazardous Materials Transportation Act and for addition of materials to be covered by such Act.

(c) **FUEL FROM HAZARDOUS WASTE.**—Not later than two years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, and after opportunity for public hearing, the Administrator shall promulgate regulations establishing standards, applicable to transporters of fuel produced (1) from any hazardous waste identified or listed under section 3001, or (2) from any hazardous waste identified or listed under section 3001 and any other material, as may be necessary to protect human health and the environment. Such standards may include any of the requirements set forth in paragraphs (1) through (4) of subsection (a) as may be appropriate.

STANDARDS APPLICABLE TO OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

SEC. 3004. (a) IN GENERAL.—Not later than eighteen months after the date of enactment of this section, and after opportunity for public hearings and after consultation with appropriate Federal and State agencies, the Administrator shall promulgate regulations establishing such performance standards, applicable to owners and operators of facilities for the treatment, storage, or disposal of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. In establishing such standards the Administrator shall, where appropriate, distinguish in such standards between requirements appropriate for new facilities and for facilities in existence on the date of promulgation of such regulations. Such standards shall include, but need not be limited to, requirements respecting—

(1) maintaining records of all hazardous wastes identified or listed under this title which is treated, stored or disposed of, as the case may be, and the manner in which such wastes were treated, stored, or disposed of;

(2) satisfactory reporting, monitoring, and inspection and compliance with the manifest system referred to in section 3002(5);

(3) treatment, storage, or disposal of all such waste received by the facility pursuant to such operating methods, techniques, and practices as may be satisfactory to the Administrator;

(4) the location, design, and construction of such hazardous waste treatment, disposal, or storage facilities;

(5) contingency plans for effective action to minimize anticipated damage from any treatment, storage, or disposal of any such hazardous waste;

(6) the maintenance of operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, training for personnel, and financial responsibility (including financial responsibility for corrective action) as may be necessary or desirable; and

(7) compliance with the requirements of section 3005 respecting permits for treatment, storage, or disposal.

No private entity shall be precluded by reason of criteria established under paragraph (6) from the ownership or operation of facilities providing hazardous waste treatment, storage, or disposal services where such entity can provide assurances of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste.

(b) **SALT DOME FORMATIONS, SALT BED FORMATIONS, UNDERGROUND MINES AND CAVES.**—(1) Effective on the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as—

(A) the Administrator has determined, after notice and opportunity for hearings on the record in the affected areas, that such placement is protective of human health and the environment;

(B) the Administrator has promulgated performance and permitting standards for such facilities under this subtitle, and;

(C) a permit has been issued under section 3005(c) for the facility concerned.

(2) Effective on the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any hazardous waste other than a hazardous waste referred to in paragraph (1) in a salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as a permit has been issued under section 3005(c) for the facility concerned.

(3) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) applies shall affect the prohibition contained in paragraph (1) or (2) of this subsection.

(4) Nothing in this subsection shall apply to the Department of Energy Waste Isolation Pilot Project in New Mexico.

(c) **LIQUIDS IN LANDFILLS.**—(1) Effective 6 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not absorbents have been added) in any landfill is prohibited. Prior to such date the requirements (as in effect on April 30, 1980) promul-

gated under this section by the Administrator regarding and liquid hazardous waste shall remain in force and effect to the extent such requirements are applicable to the placement of bulk or noncontainerized liquid hazardous waste, or free liquids contained in hazardous waste, in landfills.

(2) Not later than fifteen months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate final regulations which—

(A) minimize the disposal of containerized liquid hazardous waste in landfills, and

(B) minimize the presence of free liquids in containerized hazardous waste to be disposed of in landfills.

Such regulations shall also prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations. Prior to the date on which such final regulations take effect, the requirements (as in effect on April 30, 1983) promulgated under this section by the Administrator shall remain in force and effect to the extent such requirements are applicable to the disposal of containerized liquid hazardous waste, or free liquids contained in hazardous waste in landfills.

(3) Effective twelve months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any liquid which is not a hazardous waste in a landfill for which a permit is required under section 3005(c) or which is operating pursuant to interim status granted under section 3005(e) is prohibited unless the owner or operator of such landfill demonstrates to the Administrator, or the Administrator determines, that—

(A) the only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted under section 3005(c) or operating pursuant to interim status under section 3005(e), which contains, or may reasonably be anticipated to contain, hazardous waste; and

(B) placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water.

As used in subparagraph (B), the term "underground source of drinking water" has the same meaning as provided in regulations under the Safe Drinking Water Act (title XIV of the Public Health Service Act).

(4) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) applies shall affect the prohibition contained in paragraph (1) of this subsection.

(d) PROHIBITIONS ON LAND DISPOSAL OF SPECIFIED WASTES.—(1) Effective 32 months after the enactment of the Hazardous and Solid Waste Amendments of 1984 (except as provided in subsection (f) with respect to underground injection into deep injection wells), the land disposal of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition or more methods of land disposal of such waste is not required.

(A) the long-term uncertainties associated with land disposal,
(B) the goal of managing hazardous waste in an appropriate manner in the first instance, and

(C) the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous wastes and their hazardous constituents.

For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other than a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m)), unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

(2) Paragraph (1) applies to the following hazardous wastes listed or identified under section 3001:

(A) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/L.

(B) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:

(i) arsenic and/or compounds (as As) 500 mg/L;

(ii) cadmium and/or compounds (as Cd) 100 mg/L;

(iii) chromium (VI) and/or compounds (as Cr VI) 500 mg/L;

(iv) lead and/or compounds (as Pb) 500 mg/L;

(v) mercury and/or compounds (as Hg) 20 mg/L;

(vi) nickel and/or compounds (as Ni) 134 mg/L;

(vii) selenium and/or compounds (as Se) 100 mg/L; and

(viii) thallium and/or compounds (as Th) 130 mg/L.

(C) Liquid hazardous waste having a pH less than or equal to two (2.0).

(D) Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 50 ppm.

(E) Hazardous wastes containing halogenated organic compounds in total concentration greater than or equal to 1,000 mg/kg.

When necessary to protect human health and the environment, the Administrator shall substitute more stringent concentration levels than the levels specified in subparagraphs (A) through (E).

(3) During the period ending forty-eight months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action required under this subtitle.

(e) SOLVENTS AND DIOXINS.—(1) Effective twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984,

of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition of one or more methods of land disposal of such waste is not required in order to protect human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraph (A) through (C) of subsection (d)(1). For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other than a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m)), unless upon application by an interested person it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

(2) The hazardous wastes to which the prohibition under paragraph (1) applies are as follows—

(A) dioxin-containing hazardous wastes numbered F020, F021, F022, and F023 (as referred to in the proposed rule published by the Administrator in the Federal Register for April 4, 1983), and

(B) those hazardous wastes numbered F001, F002, F003, F004, and F005 in regulations promulgated by the Administrator under section 3001 (40 C.F.R. 261.31 (July 1, 1983)), as those regulations are in effect on July 1, 1983.

(3) During the period ending forty-eight months after the date of the enactment of Hazardous and Solid Waste Amendments of 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action required under this subtitle.

(f) DISPOSAL INTO DEEP INJECTION WELLS; SPECIFIED SUBSECTION (d) WASTES; SOLVENTS AND DIOXINS.—(1) Not later than forty-five months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a review of the disposal of all hazardous wastes referred to in paragraph (2) of subsection (d) and in paragraph (2) of subsection (e) by underground injection into deep injection wells.

(2) Within forty-five months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall make a determination regarding the disposal by underground injection into deep injection wells of the hazardous wastes referred to in paragraph (2) of subsection (d) and the hazardous wastes referred to in paragraph (2) of subsection (e). The Administrator shall promulgate final regulations prohibiting the disposal of such wastes into such wells if it may reasonably be determined that such disposal may not be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraphs (A) through (C) of section (d)(1). In promulgating such regulations, the Administrator shall consider each hazardous waste referred to in paragraph

(3) If the Administrator fails to make a determination under paragraph (2) for any hazardous waste referred to in paragraph (2) of subsection (d) or in paragraph (2) of subsection (e) within forty-five months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, such hazardous waste shall be prohibited from disposal into any deep injection well.

(4) As used in this subsection, the term "deep injection well" means a well used for the underground injection of hazardous waste other than a well to which section 7010(a) applies.

(g) ADDITIONAL LAND DISPOSAL PROHIBITION DETERMINATIONS.—

(1) Not later than twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a schedule to Congress for—

(A) reviewing all hazardous wastes listed (as of the date of the enactment of the Hazardous and Solid Waste Amendments of 1984) under section 3001 other than those wastes which are referred to in subsection (d) or (e); and

(B) taking action under paragraph (5) of this subsection with respect to each such hazardous waste.

(2) The Administrator shall base the schedule on a ranking of such listed wastes considering their intrinsic hazard and their volume such that decisions regarding the land disposal of high volume hazardous wastes with high intrinsic hazard shall, to the maximum extent possible, be made by the date forty-five months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984. Decisions regarding low volume hazardous wastes with lower intrinsic hazard shall be made by the date sixty-six months after such date of enactment.

(3) The preparation and submission of the schedule under this subsection shall not be subject to the Paperwork Reduction Act of 1980. No hearing on the record shall be required for purposes of preparation or submission of the schedule. The schedule shall not be subject to judicial review.

(4) The schedule under this subsection shall require that the Administrator shall promulgate regulations in accordance with paragraph (5) or make a determination under paragraph (5)—

(A) for at least one-third of all hazardous wastes referred to in paragraph (1) by the date forty-five months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984;

(B) for at least two-thirds of all such listed wastes by the date fifty-five months after the date of enactment of such Amendments; and

(C) for all such listed wastes and for all hazardous wastes identified under 3001 by the date sixty-six months after the date of enactment of such Amendments.

In the case of any hazardous waste identified or listed under section 3001 after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall determine whether such waste shall be prohibited from one or more methods of land disposal in accordance with paragraph (5) within six months after the date of such identification or listing.

(5) Not later than the date specified in the act published under this subsection the Administrator shall promulgate the final rule.

ulations prohibiting one or more methods of land disposal of the hazardous wastes listed on such schedule except for methods of land disposal which the Administrator determines will be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraph (A) through (C) of subsection (d)(1). For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment (except with respect to a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m)) unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

(6XA) If the Administrator fails (by the date forty-five months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first one-third of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

(i) such facility is in compliance with the requirements of subsection (o) which are applicable to new facilities (relating to minimum technological requirements); and

(ii) prior to such disposal, the generator has certified to the Administrator that such generator has investigated the availability of treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

(B) If the Administrator fails (by the date 55 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first two-thirds of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

(i) such facility is in compliance with the requirements of subsection (o) which are applicable to new facilities (relating to minimum technological requirements); and

(ii) prior to such disposal, the generator has certified to the Administrator that such generator has investigated the availability of treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

(C) If the Administrator fails to promulgate regulations, or make a determination under paragraph (5) for any hazardous waste referred to in paragraph (1) within 66 months after the date of enact-

ment of the Hazardous and Solid Waste Amendments of 1984, such hazardous waste shall be prohibited from land disposal.

(h) **VARIANCES FROM LAND DISPOSAL PROHIBITIONS.**—(1) A prohibition in regulations under subsection (d), (e), (f), or (g) shall be effective immediately upon promulgation.

(2) The Administrator may establish an effective date different from the effective date which would otherwise apply under subsection (d), (e), (f), or (g) with respect to a specific hazardous waste which is subject to a prohibition under subsection (d), (e), (f), or (g) or under regulations under subsection (d), (e), (f), or (g). Any such other effective date shall be established on the basis of the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. Any such other effective date shall in no event be later than 2 years after the effective date of the prohibition which would otherwise apply under subsection (d), (e), (f), or (g).

(3) The Administrator, after notice and opportunity for comment and after consultation with appropriate State agencies in all affected States, may on a case-by-case basis grant an extension of the effective date which would otherwise apply under subsection (d), (e), (f), or (g) or under paragraph (2) for up to one year, where the applicant demonstrates that there is a binding contractual commitment to construct or otherwise provide such alternative capacity but due to circumstances beyond the control of such applicant such alternative capacity cannot reasonably be made available by such effective date. Such extension shall be renewable once for no more than one additional year.

(4) Whenever another effective date (hereinafter referred to as a "variance") is established under paragraph (2), or an extension is granted under paragraph (3), with respect to any hazardous waste, during the period for which such variance or extension is in effect, such hazardous waste may be disposed of in a landfill or surface impoundment only if such facility is in compliance with the requirements of subsection (o).

(i) **PUBLICATION OF DETERMINATION.**—If the administrator determines that a method of land disposal will be protective of human health and the environment, he shall promptly publish in the Federal Register notice of such determination, together with an explanation of the basis for such determination.

(j) **STORAGE OF HAZARDOUS WASTE PROHIBITED FROM LAND DISPOSAL.**—In the case of any hazardous waste which is prohibited from one or more methods of land disposal under this section (or under regulations promulgated by the administrator under any provision of this section) the storage of such hazardous waste is prohibited unless such storage is solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal.

(k) **DEFINITION OF LAND DISPOSAL.**—For the purposes of this section, the term "land disposal", when used with respect to a specified hazardous waste, shall be deemed to include, but not be limited to, any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground (or cave.

(1) **BAN ON DUST SUPPRESSION.**—The use of waste or used oil or other material, which is contaminated or mixed with dioxin or any other hazardous waste identified or listed under section 3001 (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

(m) **TREATMENT STANDARDS FOR WASTES SUBJECT TO LAND DISPOSAL PROHIBITION.**—(1) Simultaneously with the promulgation of regulations under subsection (d), (e), (f), or (g) prohibiting one or more methods of land disposal of a particular hazardous waste, and as appropriate thereafter, the Administrator shall, after notice and an opportunity for hearings and after consultation with appropriate Federal and State agencies, promulgate regulations specifying those levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.

(2) If such hazardous waste has been treated to the level or by a method specified in regulations promulgated under this subsection, such waste or residue thereof shall not be subject to any prohibition promulgated under subsection (d), (e), (f), or (g) and may be disposed of in a land disposal facility which meets the requirements of this subtitle. Any regulations promulgated under this subsection for a particular hazardous waste shall become effective on the same date as any applicable prohibition promulgated under subsection (d), (e), (f), or (g).

(n) **AIR EMISSIONS.**—Not later than thirty months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate such regulations for the monitoring and control of air emissions at hazardous waste treatment, storage, and disposal facilities, including but not limited to open tanks, surface impoundments, and landfills, as may be necessary to protect human health and the environment.

(o) **MINIMUM TECHNOLOGICAL REQUIREMENTS.**—The regulations under subsection (a) of this section shall be revised from time to time to take into account improvements in the technology of control and measurement. At a minimum, such regulations shall require, and a permit issued pursuant to section 3005(c) after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require—

(A) for each new landfill or surface impoundment, each new landfill or surface impoundment unit at an existing facility, each replacement of an existing landfill or surface impoundment unit, and each lateral expansion of an existing landfill or surface impoundment unit, for which an application for a final determination regarding issuance of a permit under section 3005(c) is received after the date of enactment of the Hazardous and Solid Waste Amendments of 1984—

(i) the installation of two or more liners and a leachate collection system above (in the case of a landfill) and between such liners; and

(ii) ground water monitoring.

(B) For each incinerator which receives a permit under section 3005, after the date of enactment of the Hazardous and Solid

Waste Amendments of 1984, the attainment of the minimum destruction and removal efficiency required by regulation in effect on June 24, 1982.

The requirements of this paragraph shall apply with respect to all waste received after the issuance of the permit.

(2) Paragraph (1)(A)(i) shall not apply if the owner or operator demonstrates to the Administrator, and the Administrator finds for such landfill or surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(3) The double-liner requirement set forth in paragraph (1)(A)(i) may be waived by the Administrator for any monofill, if—

(A) such monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand,

(B) such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Extraction Procedure ("EP") toxicity characteristics set forth in regulations under this subtitle, and

(C) such monofill meets the same requirements as are applicable in the case of a waiver under section 3005(j) (2) or (4).

(4)(A) Not later than thirty months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate standards requiring that new landfill units, surface impoundment units, waste piles, underground tanks, and land treatment units for the storage, treatment, or disposal of hazardous waste identified or listed under section 3001 shall be required to utilize approved leak detection systems.

(B) For the purposes of subparagraph (A)—

(i) the term "approved leak detection system" means a system or technology which the Administrator determines to be capable of detecting leaks of hazardous constituents at the earliest practicable time; and

(ii) the term "new units" means units on which construction commences after the date of promulgation of regulations under this paragraph.

(5)(A) The Administrator shall promulgate regulations or issue guidance documents implementing the requirements of paragraph (1)(A) within two years after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

(B) Until the effective date of such regulations or guidance documents, the requirement for the installation of two or more liners may be satisfied by the installation of a top liner designed, operated, and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of no more than 1×10^{-7} centimeter per second.

(6) Any permit under section 3005 which is issued for a landfill located within the State of Alabama shall require the installation of two or more liners and a leachate collection system above and between such liners, notwithstanding any other provision of this Act.

(7) In addition to the requirements set forth in this subsection, the regulations referred to in paragraph (1) shall specify criteria for the acceptable location of new and existing treatment storage, or disposal facilities as necessary to protect human health and the environment. Within 18 months after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall publish guidance criteria identifying areas of vulnerable hydrogeology.

(p) **GROUND WATER MONITORING.**—The standards under this section concerning ground water monitoring which are applicable to surface impoundments, waste piles, land treatment units, and landfills shall apply to such a facility whether or not—

(1) the facility is located above the seasonal high water table;

(2) two liners and a leachate collection system have been installed at the facility; or

(3) the owner or operator inspects the liner (or liners) which has been installed at the facility.

This subsection shall not be construed to affect other exemptions or waivers from such standards provided in regulations in effect on the date of enactment of the Hazardous and Solid Waste Amendments of 1984 or as may be provided in revisions to those regulations, to the extent consistent with this subsection. The Administrator is authorized on a case-by-case basis to exempt from ground water monitoring requirements under this section (including subsection (o)) any engineered structure which the Administrator finds does not receive or contain liquid waste (nor waste containing free liquids), is designed and operated to exclude liquid from precipitation or other runoff, utilizes multiple leak detection systems within the outer layer of containment, and provides for continuing operation and maintenance of these leak detection systems during the operating period, closure, and the period required for post-closure monitoring and for which the Administrator concludes on the basis of such findings that there is a reasonable certainty hazardous constituents will not migrate beyond the outer layer of containment prior to the end of the period required for post-closure monitoring.

(q) **HAZARDOUS WASTE USED AS FUEL.**—(1) Not later than two years after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, and after notice and opportunity for public hearing, the Administrator shall promulgate regulations establishing such—

(A) standards applicable to the owners or operators of facilities which produce a fuel—

(i) from any hazardous waste identified or listed under section 3001, or

(ii) from any hazardous waste identified or listed under section 3001 of any other material;

(B) standards applicable to the owners and operators of facilities which burn, for purposes of energy recovery, any fuel produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 3001.

(C) standards applicable to any person who distributes on markets any fuel which is produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 3001

as may be necessary to protect human health and the environment. Such standards may include any of the requirements set forth in paragraphs (1) through (7) of subsection (a) as may be appropriate. Nothing in this subsection shall be construed to affect or impair the provisions of section 3001(b)(3). For purposes of this subsection, the term "hazardous waste listed under section 3001" includes any commercial product which is listed under section 3001 and which, in lieu of its original intended use, is (i) produced for use as (or as a component of) a fuel, (ii) distributed for use as a fuel, or (iii) burned as a fuel.

(2)(A) This subsection, subsection (r), and subsection (s) shall not apply to petroleum refinery wastes containing oil which are converted into petroleum coke at the same facility at which such wastes were generated, unless the resulting coke product would exceed one or more characteristics by which a substance would be identified as a hazardous waste under section 3001.

(B) The Administrator may exempt from the requirements of this subsection, subsection (r), or subsection (s) facilities which burn de minimis quantities of hazardous waste as fuel, as defined by the Administrator, if the wastes are burned at the same facility at which such wastes are generated; the waste is burned to recover useful energy, as determined by the Administrator on the basis of the design and operating characteristics of the facility and the heating value and other characteristics of the waste; and the waste is burned in a type of device determined by the Administrator to be designed and operated at a destruction and removal efficiency sufficient such that protection of human health and environment is assured.

(CXi) After the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 and until standards are promulgated and in effect under paragraph (2) of this subsection, no fuel which contains any hazardous waste may be burned in any cement kiln which is located within the boundaries of any incorporated municipality with a population greater than five hundred thousand (based on the most recent census statistics) unless such kiln fully complies with regulations (as in effect on the date of the enactment of the Hazardous and Solid Waste Amendments of 1984) under the subtitle which are applicable to incinerators.

(ii) Any person who knowingly violates the prohibition contained in clause (i) shall be deemed to have violated section 3008(d)(2).

(r) **LABELING.**—(1) Notwithstanding any other provision of law, until such time as the Administrator promulgates standards under subsection (q) specifically superseding this requirement, it shall be unlawful for any person who is required to file a notification in accordance with paragraph (1) or (3) of section 3010 to distribute or market any fuel which is produced from any hazardous waste identified or listed under section 3001, or any fuel which otherwise contains any hazardous waste identified or listed under section 3001.

(A) to bear the following statement: "WARNING: THIS FUEL CONTAINS HAZARDOUS WASTES", and

(B) to list the hazardous wastes contained therein.

Beginning ninety days after the enactment of the Hazardous and Solid Waste Amendments of 1984, such statement shall be located in a conspicuous place on every such invoice or bill of sale and shall appear in conspicuous and legible type in contrast by typography, layout, or color with other printed matter on the invoice or bill of sale.

(2) Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from petroleum refining waste containing oil if—

(A) such materials are generated and reinserted onsite into the refining process;

(B) contaminants are removed; and

(C) such refining waste containing oil is converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of Management and Budget Standard Industrial Classification Manual.

(3) Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from oily materials, resulting from normal petroleum refining, production and transportation practices, if (A) contaminants are removed; and (B) such oily materials are converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of Management and Budget Standard Classification Manual.

(b) **RECORDKEEPING.**—Not later than fifteen months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate regulations requiring that any person who is required to file a notification in accordance with subparagraph (1), (2), or (3), of section 3010(a) shall maintain such records regarding fuel blending, distribution, or use as may be necessary to protect human health and the environment.

(i) **FINANCIAL RESPONSIBILITY PROVISIONS.**—(1) Financial responsibility required by subsection (a) of this section may be established in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this section, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this Act.

(2) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where (with reasonable diligence) jurisdiction in any State court or any Federal Court cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claims arising

from conduct for which evidence of financial responsibility must be provided under this section may be asserted directly against the guarantor, without providing such evidence of financial responsibility. In the case of any action pursuant to this subsection, such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

(3) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this Act. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

(4) For the purpose of this subsection, the term "guarantor" means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this section.

(u) **CONTINUING RELEASES AT PERMITTED FACILITIES.**—Standards promulgated under this section shall require, and a permit issued after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in such unit. Permits issued under section 3005 shall contain schedules of compliance for such corrective action (which such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

(v) **CORRECTIVE ACTIONS BEYOND FACILITY BOUNDARY.**—As promptly as practicable after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall amend the standards under this section regarding corrective action required at facilities for the treatment, storage, or disposal, of hazardous waste listed or identified under section 3001 to require that corrective action be taken beyond the facility boundary where necessary to protect human health and the environment unless the owner or operator of the facility concerned demonstrates to the satisfaction of the Administrator that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Such regulations shall take effect immediately upon promulgation, notwithstanding section 3010(b), and shall apply to—

(1) all facilities operating under permits issued under subsection (c), and

(2) all landfills, surface impoundments, and waste pile units (including any new units, replacements of existing units, or lateral expansions of existing units) which receive hazardous waste after July 26, 1982.

Pending promulgation of such regulations, the Administrator shall issue corrective action orders for facilities referred to in paragraphs (1) and (2), on a case-by-case basis, consistent with the purposes of this subsection.

(w) **UNDERGROUND TANKS.**—Not later than March 1, 1985, the Administrator shall promulgate final permitting standards under this section for underground tanks that cannot be entered for inspection. Within forty-eight months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, such standards shall be modified, if necessary, to cover at a minimum all requirements and standards described in section 9003.

(x) If (1) solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium, (2) fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels, or (3) cement kiln dust waste, is subject to regulation under this subtitle, the Administrator is authorized to modify the requirements of subsections (c), (d), (e), (f), (g), (o), and (u) and section 3005(j), in the case of landfills or surface impoundments receiving such solid waste, to take into account the special characteristics of such wastes, the practical difficulties associated with implementation of such requirements, and site-specific characteristics, including but not limited to the climate, geology, hydrology and soil chemistry at the site, so long as such modified requirements assure protection of human health and the environment.

PERMITS FOR TREATMENT, STORAGE, OR DISPOSAL OF HAZARDOUS WASTE

SEC. 3005. (a) **PERMIT REQUIREMENTS.**—Not later than eighteen months after the date of the enactment of this section, the Administrator shall promulgate regulations requiring each person owning or operating [a] an existing facility or planning to construct a new facility for the treatment, storage, or disposal of hazardous waste identified or listed under this subtitle to have a permit issued pursuant to this section. Such regulations shall take effect on the date provided in section 3010 and upon and after such date the treatment storage or disposal of any such hazardous waste and the construction of any new facility for the treatment, storage, or disposal of any such hazardous waste is prohibited except in accordance with such a permit. No permit shall be required under this section in order to construct a facility if such facility is constructed pursuant to an approval issued by the Administrator under section 6(e) of the Toxic Substances Control Act for the incineration of polychlorinated biphenyls and any person owning or operating such a facility may, at any time after operation or construction of such facility has begun, file an application for a permit pursuant to this section authorizing such facility to incinerate hazardous waste identified of

(b) **REQUIREMENTS OF PERMIT APPLICATION.**—Each application for a permit under this section shall contain such information as may be required under regulations promulgated by the Administrator including information respecting—

(1) estimates with respect to the composition, quantities, and concentrations of any hazardous waste identified or listed under this subtitle, or combinations of any such hazardous waste and any other solid waste, proposed to be disposed of, treated, transported, or stored, and the time, frequency, or rate of which such waste is proposed to be disposed of, treated, transported, or stored; and

(2) the site at which such hazardous waste or the products or treatment of such hazardous waste will be disposed of, treated, transported to, or stored.

(c) **PERMIT ISSUANCE.**—(1) Upon a determination by the Administrator (or a State, if applicable), of compliance by a facility for which a permit is applied for under this section with the requirements of this section and section 3004, the Administrator (or the State) shall issue a permit for such facilities. In the event permit applicants propose modification of their facilities, or in the event the Administrator (or the State) determines that modifications are necessary to conform to the requirements under this section and section 3004, the permit shall specify the time allowed to complete the modifications.

(2)(A)(i) Not later than the date four years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of each application under this subsection for a permit for a land disposal facility which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

(ii) Not later than the date five years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of each application for a permit under this subsection for an incinerator facility which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

(B) Not later than the date eight years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of each application for a permit under this subsection for any facility (other than a facility referred to in subparagraph (A)) which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

(C) The time periods specified in this paragraph shall also apply in the case of any State which is administering an authorized hazardous waste program under section 3006. Interim status under subsection (c) shall terminate for each facility referred to in subparagraph (A)(ii) or (B) on the expiration of the five- or eight-year period referred to in subparagraph (A) or (B), whichever is applicable, unless the owner or operator of the facility applies for a final determination regarding the issuance of a permit under this subsection.

(i) two years after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 (in the case of a facility referred to in subparagraph (A)(ii)), or

(ii) four years after such date of enactment (in the case of a facility referred to in subparagraph (B)).

(3) Any permit under this section shall be for a fixed term, not to exceed 10 years in the case of any land disposal facility, storage facility, or incinerator or other treatment facility. Each permit for a land disposal facility shall be reviewed five years after date of issuance or reissuance and shall be modified as necessary to assure that the facility continues to comply with the currently applicable requirements of this section and section 3004. Nothing in this subsection shall preclude the Administrator from reviewing and modifying a permit at any time during its term. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology as well as changes in applicable regulations. Each permit issued under this section shall contain such terms and conditions as the Administrator (or the State) determines necessary to protect human health and the environment.

(d) **PERMIT REVOCATION.**—Upon a determination by the Administrator (or by a State, in the case of a State having an authorized hazardous waste program under section 3006) of noncompliance by a facility having a permit under this title with the requirements of this section or section 3004, the Administrator (or State, in the case of a State having an authorized hazardous waste program under section 3006) shall revoke such permit.

(e) **INTERIM STATUS.**—(1) Any person who—

[(1) owns or operates a facility required to have a permit under this section which facility is in existence on November 19, 1980.]

(A) owns or operates a facility required to have a permit under this section which facility—

(i) was in existence on November 19, 1980, or

(ii) is in existence on the effective date of statutory or regulatory changes under this Act that render the facility subject to the requirement to have a permit under this section.

[(2)] (B) has complied with the requirements of section 3010(a), and

[(3)] (C) has made an application for a permit under this section shall be treated as having been issued such permit until such time as final administrative disposition of such application is made, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application.

This paragraph shall not apply to any facility which has been previously denied a permit under this section or if authority to operate the facility under this section has been previously terminated.

(2) In the case of each land disposal facility which has been granted interim status under this subsection before the date of enactment of the Hazardous and Solid Waste Amendments of 1984, in-

date of the enactment of such Amendments unless the owner or operator of such facility—

(A) applies for a final determination regarding the issuance of a permit under subsection (c) for such facility before the date twelve months after the date of the enactment of such Amendments; and

(B) certifies that such facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements.

(3) In the case of each land disposal facility which is in existence on the effective date of statutory or regulatory changes under this Act that render the facility subject to the requirement to have a permit under this section and which is granted interim status under this subsection, interim status shall terminate on the date twelve months after the date on which the facility first becomes subject to such permit requirement unless the owner or operator of such facility—

(A) applies for a final determination regarding the issuance of a permit under subsection (c) for such facility before the date twelve months after the date on which the facility first becomes subject to such permit requirement; and

(B) certifies that such facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements.

(f) **COAL MINING WASTES AND RECLAMATION PERMITS.**—Notwithstanding subsection (a) through (e) of this section, any surface coal mining and reclamation permit covering any coal mining wastes or overburden which has been issued or approved under the Surface Mining Control and Reclamation Act of 1977 shall be deemed to be a permit issued pursuant to this section with respect to the treatment, storage, or disposal of such wastes or overburden. Regulations promulgated by the Administrator under this subtitle shall not be applicable to treatment, storage, or disposal of coal mining wastes or overburden which are covered by such a permit.

(g) **RESEARCH, DEVELOPMENT, AND DEMONSTRATION PERMITS.**—(1) The Administrator may issue a research, development, and demonstration permit for any hazardous waste treatment facility which proposes to utilize an innovative and experimental hazardous waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under this subtitle. Any such permit shall include such terms and conditions as will assure protection of human health and the environment. Such permits—

(A) shall provide for the construction of such facilities, as necessary, and for operation of the facility for not longer than one year (unless renewed as provided in paragraph (4)), and

(B) shall provide for the receipt and treatment by the facility of only those types and quantities of hazardous waste which the Administrator deems necessary for purposes of determining the efficacy and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment, and

(C) shall include such requirements as the Administrator deems necessary to protect human health and the environment.

(including, but not limited to, requirements regarding monitoring, operation, insurance or bonding, financial responsibility, closure, and remedial action), and such requirements as the Administrator deems necessary regarding testing and providing of information to the Administrator with respect to the operation of the facility.

The Administrator may apply the criteria set forth in this paragraph in establishing the conditions of each permit without separate establishment of regulations implementing such criteria.

(2) For the purpose of expediting review and issuance of permits under this subsection, the Administrator may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements established in the administrator's general permit regulations except that there may be no modification or waiver of regulations regarding financial responsibility (including insurance) or of procedures established under section 7004(b)(2) regarding public participation.

(3) The Administrator may order an immediate termination of all operations at the facility at any time he determines that termination is necessary to protect human health and the environment.

(4) Any permit issued under this subsection may be renewed not more than three times. Each such renewal shall be for a period of not more than 1 year.

(h) **WASTE MINIMIZATION.**—Effective September 1, 1985, it shall be a condition of any permit issued under this section for the treatment, storage, or disposal of hazardous waste on the premises where such waste was generated that the permittee certify, no less often than annually, that—

(1) the generator of the hazardous waste has a program in place to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) the proposed method of treatment, storage, or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment.

(i) **INTERIM STATUS FACILITIES RECEIVING WASTES AFTER JULY 26, 1982.**—The standards concerning ground water monitoring, unsaturated zone monitoring, and corrective action, which are applicable under section 3004 to new landfills, surface impoundments, land treatment units, and waste-pile units required to be permitted under subsection (c) shall also apply to any landfill, surface impoundment, land treatment unit, or waste-pile unit qualifying for the authorization to operate under subsection (c) which receives hazardous waste after July 26, 1982.

(j) **INTERIM STATUS SURFACE IMPOUNDMENTS.**—(1) Except as provided in paragraph (2), (3), or (4), each surface impoundment in existence on the date of enactment of the Hazardous and Solid Waste Amendments of 1984 and qualifying for the authorization to operate under subsection (c) of this section shall not receive, store, or treat hazardous waste after the date four years after such date of enactment unless such surface impoundment is in compliance with the requirements of section 3004(o)(1)(A) which would apply to such impoundment if it were new.

(2) Paragraph (1) of this subsection shall not apply to any surface impoundment which (A) has at least one liner, for which there is no evidence that such liner is leaking; (B) is located more than one-quarter mile from an underground source of drinking water; and (C) is in compliance with generally applicable ground water monitoring requirements for facilities with permits under subsection (c) of this section.

(3) Paragraph (1) of this subsection shall not apply to any surface impoundment which (A) contains treated waste water during the secondary or subsequent phases of an aggressive biological treatment facility subject to a permit issued under section 404 of the Clean Water Act (or which holds such treated waste water after treatment and prior to discharge); (B) is in compliance with generally applicable ground water monitoring requirements for facilities with permits under subsection (c) of this section; and (C)(i) is part of a facility in compliance with section 301(b)(2) of the Clean Water Act, or (ii) in the case of a facility for which no effluent guidelines required under section 304(b)(2) of the Clean Water Act are in effect and no permit under section 402(a)(1) of such Act implementing section 301(b)(2) of such Act has been issued, is part of a facility in compliance with a permit under section 403 of such Act, which is achieving significant degradation of toxic pollutants and hazardous constituents contained in the untreated waste stream and which has identified those toxic pollutants and hazardous constituents in the untreated waste stream to the appropriate permitting authority.

(4) The Administrator (or the State, in the case of a State with an authorized program), after notice and opportunity for comment, may modify the requirements of paragraph (1) for any surface impoundment if the owner or operator demonstrates that such surface impoundment is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time. The Administrator or the State shall take into account locational criteria established under section 3004(o)(7).

(5) The owner or operator of any surface impoundment potentially subject to paragraph (1) who has reason to believe that on the basis of paragraph (2), (3), or (4) such surface impoundment is not required to comply with the requirements of paragraph (1), shall apply to the Administrator (or the State, in the case of a State with an authorized program) not later than twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 for a determination of the applicability of paragraph (1) (in the case of paragraph (2) or (3)) or for a modification of the requirements of paragraph (1) (in the case of paragraph (4)), with respect to such surface impoundment. Such owner or operator shall provide, with such application, evidence pertinent to such decision, including:

(A) an application for a final determination regarding the issuance of a permit under subsection (c) of this section for such facility, if not previously submitted;

(B) evidence as to compliance with all applicable ground water monitoring requirements and the information and analysis from such monitoring;

(C) all reasonably ascertainable evidence as to whether such surface impoundment is leaking; and

(D) in the case of applications under paragraph (2) or (3), a certification by a registered professional engineer with academic training and experience in ground water hydrology that—

(i) under paragraph (2), the liner of such surface impoundment is designed, constructed, and operated in accordance with applicable requirements, such surface impoundment is more than one-quarter mile from an underground source of drinking water and there is no evidence such liner is leaking; or

(ii) under paragraph (3), based on analysis of those toxic pollutants and hazardous constituents that are likely to be present in the untreated waste stream, such impoundment satisfies the conditions of paragraph (3).

In the case of any surface impoundment for which the owner or operator fails to apply under this paragraph within the time provided by this paragraph or paragraph (6), such surface impoundment shall comply with paragraph (1) notwithstanding paragraph (2), (3), or (4). Within twelve months after receipt of such application and evidence and not later than thirty-six months after such date of enactment, and after notice and opportunity to comment, the Administrator (or, if appropriate, the State) shall advise such owner or operator on the applicability of paragraph (1) to such surface impoundment or as to whether and how the requirements of paragraph (1) shall be modified and applied to such surface impoundment.

(6)(A) In any case in which a surface impoundment becomes subject to paragraph (1) after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 due to the promulgation of additional listings or characteristics for the identification of hazardous waste under section 3001, the period for compliance in paragraph (1) shall be four years after the date of such promulgation, the period for demonstrations under paragraph (4) and for submission of evidence under paragraph (5) shall be not later than twenty-four months after the date of such promulgation, and the period for the Administrator (or if appropriate, the State) to advise such owners or operators under paragraph (5) shall be not later than thirty-six months after the date of promulgation.

(B) In any case in which a surface impoundment is initially determined to be excluded from the requirements of paragraph (1) but due to a change in condition (including the existence of a leak) no longer satisfies the provisions of paragraph (2), (3), or (4) and therefore becomes subject to paragraph (1), the period for compliance in paragraph (1) shall be two years after the date of discovery of such change of condition, or in the case of a surface impoundment excluded under paragraph (3) three years after such date of discovery.

(7)(A) The Administrator shall study and report to the Congress on the number, range of size, construction, likelihood of hazardous constituents migrating into ground water, and potential threat to human health and the environment of existing surface impoundments excluded by paragraph (3) from the requirements of paragraph (1). Such report shall address the need, feasibility, and estimated costs of subjecting such existing surface impoundments to the requirements of paragraph (1).

(B) In the case of any existing surface impoundment or of surface impoundments from which the Administrator (or the State, in the case of a State with an authorized program) determines hazardous constituents are likely to migrate into ground water, the Administrator (or if appropriate, the State) is authorized to impose such requirements as may be necessary to protect human health and the environment, including the requirements of section 3004(a) which would apply to such impoundments if they were new.

(C) In the case of any surface impoundment excluded by paragraph (3) from the requirement of paragraph (1) which is subsequently determined to be leaking, the Administrator (or, if appropriate, the State) shall require compliance with paragraph (1), unless the Administrator (or, if appropriate, the State) determines that such compliance is not necessary to protect human health and the environment.

(8) In the case of any surface impoundment in which the liners and leak detection system have been installed pursuant to the requirements of paragraph (1) and in good faith compliance with section 3004(a) and the Administrator's regulations and guidance documents governing liners and leak detection systems, no liner or leak detection system which is different from that which was so installed pursuant to paragraph (1) shall be required for such unit by the Administrator when issuing the first permit under this section to such facility. Nothing in this paragraph shall preclude the Administrator from requiring installation of a new liner when the Administrator has reason to believe that any liner installed pursuant to the requirements of this subsection is leaking.

(9) In the case of any surface impoundment which has been excluded by paragraph (2) on the basis of a liner meeting the definition under paragraph (12)(A)(ii), at the closure of such impoundment the Administrator shall require the owner or operator of such impoundment to remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment shall be required to comply with appropriate post-closure requirements, including but not limited to ground water monitoring and corrective action.

(10) Any incremental cost attributable to the requirements of this subsection or section 3004(a) shall not be considered by the Administrator (of the State, in the case of a State with an authorized program under section 402 of the Clean Water Act)—

(A) in establishing effluent limitations and standards under section 301, 304, 306, 307, or 402 of the Clean Water Act based on effluent limitations guidelines and standards promulgated any time before twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984; or

(B) in establishing any other effluent limitations to carry out the provisions of section 301, 307, or 402 of the Clean Water Act on or before October 1, 1986.

(11)(A) If the Administrator allows a hazardous waste which is prohibited from one or more methods of land disposal under subsection (d), (e), or (g) of section 3004 (or under regulations promulgated by the Administrator under such subsections) to be placed in a surface impoundment (which is operating pursuant to its permit status)

for storage or treatment, such impoundment shall meet the requirements that are applicable to new surface impoundments under section 2004(o)(1), unless such impoundment meets the requirements of paragraph (2) or (4).

(B) In the case of any hazardous waste which is prohibited from one or more methods of land disposal under subsection (d), (e), or (g) of section 3004 (or under regulations promulgated by the Administrator under such subsection) the placement or maintenance of such hazardous waste in a surface impoundment for treatment is prohibited as of the effective date of such prohibition unless the treatment residues which are hazardous are, at a minimum, removed for subsequent management within one year of the entry of the waste into the surface impoundment.

(12)(A) For the purposes of paragraph (2)(A) of this subsection, the term "liner" means—

(i) a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility; or

(ii) a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility.

(B) For the purposes of this subsection, the term "aggressive biological treatment facility" means a system of surface impoundments in which the initial impoundment of the secondary treatment segment of the facility utilizes intense mechanical aeration to enhance biological activity to degrade waste water pollutants and

(i) the hydraulic retention time in such initial impoundment is no longer than 5 days under normal operating conditions, on an annual average basis;

(ii) the hydraulic retention time in such initial impoundment is no longer than thirty days under normal operating conditions, on an annual average basis: Provided, That the sludge in such impoundment does not constitute a hazardous waste as identified by the extraction procedure toxicity characteristic in effect on the date of enactment of the Hazardous and Solid Waste Amendments of 1984; or

(iii) such system utilizes activated sludge treatment in the first portion of secondary treatment.

(C) For the purposes of this subsection, the term "underground source or drinking water" has the same meaning as provided in regulations under the Safe Drinking Water Act (title XIV of the Public Health Service Act).

(13) The Administrator may modify the requirements of paragraph (1) in the case of a surface impoundment for which the owner or operator, prior to October 1, 1984, has entered into, and is in compliance with, a consent order, decree, or agreement with the Administrator or a State with an authorized program mandating corrective action with respect to such surface impoundment that provides a degree of protection of human health and the environment which is at a minimum equivalent to that provided by paragraph (1).

AUTHORIZED STATE HAZARDOUS WASTE PROGRAMS

SEC. 3006. (a) **FEDERAL GUIDELINES.**—Not later than eighteen months after the date of enactment of this Act, the Administrator, after consultation with State authorities, shall promulgate guidelines to assist States in the development of State hazardous waste programs.

(b) **AUTHORIZATION OF STATE PROGRAMS.**—Any State which seeks to administer and enforce a hazardous waste program pursuant to this subtitle may develop and, after notice and opportunity for public hearing, submit to the Administrator on application, in such form as he shall require, for authorization of such program. Within ninety days following submission of an application under this subsection, the Administrator shall issue a notice as to whether or not he expects such program to be authorized, and within ninety days following such notice (and after opportunity for public hearing) he shall publish his findings as to whether or not the conditions listed in items (1), (2), and (3) below have been met. Such State is authorized to carry out such program in lieu of the Federal program under this subtitle in such State and to issue and enforce permits for the storage, treatment, or disposal of hazardous waste (and to enforce permits deemed to have been issued under section 3012(d)(1)) unless, within ninety days following submission of the application the Administrator notifies such State that such program may not be authorized and, within ninety days following such notice and after opportunity for public hearing, he finds that (1) such State program is not equivalent to the Federal program under this subtitle, (2) such program is not consistent with the Federal or State programs applicable in other States, or (3) such program does not provide adequate enforcement of compliance with the requirements of this subtitle. In authorizing a State program, the Administrator may base his findings on the Federal program in effect one year prior to submission of a State's application or in effect on January 26, 1983, whichever is later.

(c) **INTERIM AUTHORIZATION.**—(1) Any State which has in existence a hazardous waste program pursuant to State law before the date ninety days after the date of promulgation of regulations under sections 3002, 3003, 3004, and 3005, may submit to the Administrator evidence of such existing program and may request a temporary authorization to carry out such program under this subtitle. The Administrator shall, if the evidence submitted shows the existing State program to be substantially equivalent to the Federal program under this subtitle, grant an interim authorization to the State to carry out such program in lieu of the Federal program pursuant to this subtitle for a [twenty-four month period beginning on the date six months after the date of promulgation of regulations under sections 3002 through 3005.] period ending no later than January 31, 1986.

(2) The Administrator shall, by rule, establish a date for the expiration of interim authorization under this subsection.

(3) Pending interim or final authorization of a State program for any State which reflects the amendments made by the Hazardous and Solid Waste Amendments of 1984, the State may enter into an agreement with the Administrator under which such State may

in the administration of the requirements and prohibitions which take effect pursuant to such Amendments.

(4) In the case of a State permit program for any State which is authorized under subsection (b) or under this subsection, until such program is amended to reflect the amendments made by the Hazardous and Solid Waste Amendments of 1984 and such program amendments receive interim or final authorization, the Administrator shall have the authority in such State to issue or deny permits or those portions of permits affected by the requirements and prohibitions established by the Hazardous and Solid Waste Amendments of 1984. The Administrator shall coordinate with States the procedures for issuing such permits.

(d) EFFECT OF STATE PERMIT.—Any action taken by a State under a hazardous waste program authorized under this section shall have the same force and effect as action taken by the Administrator under this subtitle.

(e) WITHDRAWAL OF AUTHORIZATION.—Wherever the Administrator determines after public hearing that a State is not administering and enforcing a program authorized under this section in accordance with requirements of this section, he shall so notify the State, and if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days, the Administrator shall withdraw authorization of such program and establish a Federal program pursuant to this subtitle. The Administrator shall not withdraw authorization of any such program unless he shall first have notified the State, and made public, in writing, the reasons for such withdrawal.

(f) AVAILABILITY OF INFORMATION.—No State program may be authorized by the Administrator under this section unless—

(1) such program provides for the public availability of information obtained by the State regarding facilities and sites for the treatment, storage, and disposal of hazardous waste; and

(2) such information is available to the public in substantially the same manner and to the same degree, as would be the case if the Administrator was carrying out the provisions of this subtitle in such State.

(g) AMENDMENTS MADE BY 1984 ACT.—(1) Any requirement or prohibition which is applicable to the generation, transportation, treatment, storage, or disposal of hazardous waste and which is imposed under this subtitle pursuant to the amendments made by the Hazardous and Solid Waste Amendments of 1984 shall take effect in each State having an interim or finally authorized State program on the same date as such requirement takes effect in other States. The Administrator shall carry out such requirement directly in each such State unless the State program is finally authorized (or is granted interim authorization as provided in paragraph (2)) with respect to such requirements.

(2) Any State which, before the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 has an existing hazardous waste program which has been granted interim or final authorization under this section may submit to the Administrator evidence that such existing program contains (or has been amended to include) any requirement which is substantially equivalent to a requirement referred to in paragraph (1) and may request interim au-

thorization to carry out that requirement under this subtitle. The Administrator shall, if the evidence submitted shows the State requirement to be substantially equivalent to the requirement referred to in paragraph (1), grant an interim authorization to the State to carry out such requirement in lieu of direct administration in the State by the Administrator of such requirement.

(h) STATE PROGRAMS FOR USED OIL.—In the case of used oil which is not listed or identified under this subtitle as a hazardous waste but which is regulated under section 3014, the provisions of this section regarding State programs shall apply in the same manner and to the same extent as such provisions apply to hazardous waste identified or listed under this subtitle.

INSPECTIONS

SEC. 3007. (a) ACCESS ENTRY.—For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title any person who generates, stores, treats, transports, disposes of or has handled hazardous wastes shall, upon request of any officer, employee, or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee, or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes and and permit such person at all reasonable times to have access to, and to copy all records relating to such wastes. For the purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, such officers, employees, or representatives are authorized—

(1) enter at reasonable times any establishment or other place where hazardous wastes are, or have been, generated, stored, treated, or disposed of, or transported from;

(2) to inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes.

Each such inspection shall be commenced and completed with reasonable promptness. If the officer, employee, or representative obtains any samples, prior to leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the sample obtained and if requested a portion of each such sample equal in volume or weight to the portion retained. If any analysis is made of such samples, a copy of the results of such analysis shall be furnished promptly to the owner, operator, or agent in charge.

(b) AVAILABILITY TO PUBLIC.—(1) Any records, reports, or information (including records, reports, or information obtained by representatives of the Environmental Protection Agency) obtained from any person under this section [(including records, reports, or information obtained by representatives of the Environmental Protection Agency)] shall be available to the public, except that upon a showing satisfactory to the Administrator (or the State, as the case may be) by any person that records, reports, or information, or particular part thereof, to which the Administrator (or the State, as

the case may be) or any officer, employee, or representative thereof has access under this section if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, such information or particular portion thereof shall be considered confidential in accordance with the purposes of that section, except that such record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act, or when relevant in any proceeding under this Act.

(2) Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly, and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

(3) In submitting data under this Act, a person required to provide such data may—

(A) designate the data which such person believes is entitled to protection under this subsection, and

(B) submit such designated data separately from other data submitted under this Act.

A designation under this paragraph shall be made in writing and in such manner as the Administrator may prescribe.

(4) Notwithstanding any limitation contained in this section or any other provision of law, all information reported to, or otherwise obtained by, the Administrator (or any representative of the Administrator) under this Act shall be made available upon written request of any duly authorized committee of the Congress, to such committee.

(c) **FEDERAL FACILITY INSPECTIONS.**—Beginning twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, or in the case of a State with an authorized hazardous waste program the State may, undertake on an annual basis a thorough inspection of each facility for the treatment, storage, or disposal of hazardous waste which is owned or operated by a Federal agency to enforce its compliance with this subtitle and the regulations promulgated thereunder. The records of such inspections shall be available to the public as provided in subsection (b).

(d) **STATE-OPERATED FACILITIES.**—The Administrator shall annually undertake a thorough inspection of every facility for the treatment, storage, or disposal of hazardous waste which is operated by a State or local government for which a permit is required under section 3005 of this title. The records of such inspection shall be available to the public as provided in subsection (b).

(e) **MANDATORY INSPECTIONS.**—(1) The Administrator (or the State in the case of a State having an authorized hazardous waste program under this subtitle) shall commence a program to thoroughly inspect every facility for the treatment, storage, or disposal of hazardous waste for which a permit is required under section 3005 not less often than every two years as to its compliance with this subtitle (and the regulations promulgated under this subtitle). Such inspections shall commence not later than twelve months after the date of enactment of the Hazardous and Solid Waste Amendments

of 1984. The Administrator shall, after notice and opportunity for public comment, promulgate regulations governing the minimum frequency and manner of such inspections, including the manner in which records of such inspections shall be maintained and the manner in which reports of such inspections shall be filed. The Administrator may distinguish between classes and categories of facilities commensurate with the risks posed by each class or category.

(2) Not later than six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit to the Congress a report on the potential for inspections of hazardous waste treatment, storage, or disposal facilities by nongovernmental inspectors as a supplement to inspections conducted by officers, employees, or representatives of the Environmental Protection Agency or States having authorized hazardous waste programs or operating under a cooperative agreement with the Administrator. Such report shall be prepared in cooperation with the States, insurance companies offering environmental impairment insurance, independent companies providing inspection services, and other such groups as appropriate. Such report shall contain recommendations on provisions and requirements for a program of private inspections to supplement governmental inspections.

FEDERAL ENFORCEMENT

SEC. 3008. (a) **COMPLIANCE ORDERS.**—[(1) Except as provided in paragraph (2), whenever on the basis of any information the Administrator determines that any person is in violation of any requirement of this subtitle, the Administrator may issue an order requiring compliance immediately or within a specified time period or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.] (1) Except as provided in paragraph (2), whenever on the basis of any information the Administrator determines that any person has violated or is in violation of any requirement of the subtitle, the Administrator may issue an order assessing a civil penalty for any past or current violation, requiring compliance immediately or within a specified time period, or both, or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

(2) In the case of a violation of any requirement of this subtitle where such violation occurs in a State which is authorized to carry out a hazardous waste program under section 3006, the Administrator shall give notice to the State in which such violation has occurred thirty days prior to issuing an order or commencing a civil action under this section.

[(3) If such violator fails to take corrective action within the time specified in the order, he shall be liable for a civil penalty of not more than \$25,000 for each day of continued noncompliance and the Administrator may suspend or revoke any permit issued to the violator (whether issued by the Administrator or the State).]

(3) Any order issued pursuant to this subsection may be

or a State under this subtitle and shall state with reasonable specificity the nature of the violation. Any penalty assessed in the order shall not exceed \$25,000 per day of noncompliance for each violation of a requirement of this subtitle. In assessing such a penalty, the Administrator shall take into account the seriousness of the violation and any good faith efforts to comply with applicable requirements.

(b) **PUBLIC HEARING.**—Any order issued under this section shall become final unless, no later than thirty days after the order or persons named therein request a public hearing. Upon such request the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.

[(c) **REQUIREMENTS OF COMPLIANCE ORDERS.**—Any order issued under this section may include a suspension or revocation of a permit issued under this subtitle, and shall state with reasonable specificity the nature of the violation and specify a time for compliance and assess a penalty, if any, which the Administrator determines is reasonable taking into account the seriousness of the violation and any good faith efforts to comply with the applicable requirements.]

(c) **VIOLATION OF COMPLIANCE ORDERS.**—If a violator fails to take corrective action within the time specified in a compliance order, the Administrator may assess a civil penalty of not more than \$25,000 for each day of continued noncompliance with the order and the Administrator may suspend or revoke any permit issued to the violator (whether issued by the Administrator or the State).

(d) **CRIMINAL PENALTIES.**—Any person who—

(1) knowingly transports or causes to be transported any hazardous waste identified or listed under this subtitle to a facility which does not have a permit under [section 3005 (or 3006 in the case of a State program).] this subtitle or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052);

(2) knowingly treats, stores, or disposes of any hazardous waste identified or listed under this subtitle [either]—

(A) without [having obtained] a permit under [section 3005 (or 3006 in the case of a State program)] this subtitle or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052); or

[(B) in knowing violation of any material condition or requirement of such permit;]

(B) in knowing violation of any material condition or requirement of such permit; or

(C) in knowing violation of any material condition or requirement of any applicable interim status regulations or standards;

[(3) knowingly makes any false material statement or representation in any application, label, manifest, record, report, permit or other document filed, maintained, or used for purposes of compliance with this subtitle; or

[(4) knowingly generates, stores, treats, transports, disposes of, or otherwise handles any hazardous waste (whether such activity took place before or takes place after the date of the enactment of this paragraph) and who knowingly destroys, alters, or conceals any record required to be maintained under regulations promulgated by the Administrator under this subtitle,

shall, upon conviction, be subject to a fine of not more than \$25,000 (\$50,000 in the case of a violation of paragraph (1) or (2)) for each day of violation, or to imprisonment not to exceed one year (two years in the case of a violation of paragraph (1) or (2)), or both. If the conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or by both.]

(3) knowingly omits material information or makes any false material statement or representation in any application, label, manifest, record, report, permit, or other document filed, maintained, or used for purposes of compliance with regulations promulgated by the Administrator (or by a State in the case of an authorized State program) under this subtitle;

(4) knowingly generates, stores, treats, transports, disposes of, exports or otherwise handles any hazardous waste (or any used oil not identified or listed as a hazardous waste under this subtitle)* (whether such activity took place before or takes place after the date of the enactment of this paragraph) and who knowingly destroys, alters, conceals, or fails to file any record, application, manifest, report, or other document required to be maintained or filed for purposes of compliance with regulations promulgated by the Administrator (or by a State in the case of an authorized State program) under this subtitle;

(5) knowingly transports without a manifest, or causes to be transported without a manifest, any hazardous waste (or any used oil not identified or listed as a hazardous waste under this subtitle)* required by regulations promulgated under this subtitle (or by a State in the case of a State program authorized under this subtitle) to be accompanied by a manifest;

shall, upon conviction, be subject to a fine of not more than \$50,000 for each day of violation, or imprisonment not to exceed two years (five years in the case of a violation of paragraph (1) or (2)), or both. If the conviction is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment under the respective paragraph shall be doubled with respect to both fine and imprisonment; or

(6) knowingly exports a hazardous waste identified or listed under this subtitle (A) without the consent of the receiving country or, (B) where there exists an international agreement between the United States and the government of the receiving country establishing notice, export, and enforcement procedures for the transportation, treatment, storage, and disposal of haz-

* Language enclosed in light-face brackets indicates amendment made by P.L. 99-499, Superfund

ardous wastes, in a manner which is not in conformance with such agreement []; or *

* (7) knowingly stores, treats, transports, or causes to be transported, disposes of, or otherwise handles any used oil not identified or listed as hazardous waste under subtitle C of the Solid Waste Disposal Act—

(A) in knowing violation of any material condition or requirement of a permit under this subtitle C; or

(B) in knowing violation of any material condition or requirement of any applicable regulations or standards under this Act;

[(c) **KNOWING ENDANGERMENT.**—Any person who knowingly transports, treats, stores or disposes of any hazardous waste identified or listed under this subtitle—

[(1)(A) in violation of paragraph (1) or (2) of subsection (d) of this section, or

[(B) having applied for a permit under section 3005 or 3006, and knowingly either—

[(i) has failed to include in his application material information required under regulations promulgated by the Administrator, or

[(ii) fails to comply with the applicable interim status regulations and standards promulgated pursuant to this subtitle,

who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, and

[(2)(A) if his conduct in the circumstances manifests an unjustified and inexcusable disregard for human life, or

[(B) if his conduct in the circumstances manifests an extreme indifference for human life,

shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than 2 years, or both, except that any person who violates subsection (e)(2)(B) shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than 5 years, or both. A defendant that is an organization shall, upon conviction of violating this subsection, be subject to a fine of not more than \$1,000,000.]

(e) **KNOWING ENDANGERMENT.**—Any person who knowingly transports, treats, stores, disposes of, or exports any hazardous waste identified or listed under this subtitle (or used oil not identified or listed as a hazardous waste under this subtitle)* in violation of paragraph (1), (2), (3), (4), (5), [(or)]* (6), [or (7)]* of subsection (d) of this section who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than fifteen years, or both. A defendant that is an organization shall, upon conviction of violating this subsection, be subject to a fine of not more than \$1,000,000.

(f) **SPECIAL RULES.**—For the purposes of subsection (e)—

(1) A person's state of mind is knowing with respect to—

* P.L. 99-499, Superfund

* Language enclosed in light face brackets indicates amendment made by P.L. 99-499, §.

(A) his conduct, if he is aware of the nature of his conduct;

(B) an existing circumstance, if he is aware or believes that the circumstance exists; or

(C) a result of his conduct, if he is aware or believes that his conduct is substantially certain to cause danger of death or serious bodily injury.

(2) In determining whether a defendant who is a natural person knew that his conduct placed another person in imminent danger of death or serious bodily injury—

(A) the person is responsible only for actual awareness or actual belief that he possessed; and

(B) knowledge possessed by a person other than the defendant but not by the defendant himself may not be attributed to the defendant;

Provided, That in proving the defendant's possession of actual knowledge, circumstantial evidence may be used, including evidence that the defendant took affirmative steps to shield himself from relevant information.

(3) It is an affirmative defense to a prosecution that the conduct charged was consented to by the person endangered and that the danger and conduct charged were reasonably foreseeable hazards of—

(A) an occupation, a business, or a profession; or

(B) medical treatment or medical or scientific experimentation conducted by professionally approved methods and such other person had been made aware of the risks involved prior to giving consent.

The defendant may establish an affirmative defense under this subsection by a preponderance of the evidence.

(4) All general defenses, affirmative defenses, and bars to prosecution that may apply with respect to other Federal criminal offenses may apply under subsection (e) and shall be determined by the courts of the United States according to the principles of common law as they may be interpreted in the light of reason and experience. Concepts of justification and excuse applicable under this section may be developed in the light of reason and experience.

(5) The term "organization" means a legal entity, other than a government, established or organized for any purpose, and such term includes a corporation, company, association, firm, partnership, joint stock company, foundation, institution, trust, society, union, or any other association of persons.

(6) The term "serious bodily injury" means—

(A) bodily injury which involve a substantial risk of death;

(B) unconsciousness;

(C) extreme physical pain;

(D) protracted and obvious disfigurement; or

(E) protracted loss or impairment of the function of a bodily member, organ, or mental faculty.

(g) **CIVIL PENALTY.**—Any person who violates any requirement of this subtitle shall be liable to the United States for a civil penalty in an amount not to exceed \$25,000 for each violation.

day on such violation shall, for purposes of this subsection, constitute a separate violation. Nothing in this title (or in any regulation adopted under this title) shall be construed to prohibit any State from requiring that the State be provided with a copy of each manifest used in connection with hazardous waste which is generated within that State or transported to a treatment, storage, or disposal facility within that State.

(h) **INTERIM STATUS CORRECTIVE ACTION ORDERS.**—(1) Whenever on the basis of any information the Administrator determines that there is or has been a release of hazardous waste into the environment from a facility authorized to operate under section 3005(e) of this subtitle, the Administrator may issue an order requiring corrective action or such other response measure as he deems necessary to protect human health or the environment or the Administrator may commence a civil action in the United States district court in the district in which the facility is located for appropriate relief, including a temporary or permanent injunction.

(2) Any order issued under this subsection may include a suspension or revocation of authorization to operate under section 3005(e) of this subtitle, shall state with reasonable specificity the nature of the required corrective action or other response measure, and shall specify a time for compliance. If any person named in an order fails to comply with the order, the Administrator may assess, and such person shall be liable to the United States for, a civil penalty in an amount not to exceed \$25,000 for each day of noncompliance with the order.

RETENTION OF STATE AUTHORITY

Sec. 3009. Upon the effective date of regulations under this subtitle no State or political subdivision may impose any requirements less stringent than those authorized under this subtitle respecting the same matter as governed by such regulations, except that if application of a regulation with respect to any matter under this subtitle is postponed or enjoined by the action of any court, no State or political subdivision shall be prohibited from acting with respect to the same aspect of such matter until such time as such regulation takes effect. Nothing in this title shall be construed to prohibit any State or political subdivision thereof from imposing any requirements, including those for site selection, which are more stringent than those imposed by such regulations.

EFFECTIVE DATE

Sec. 3010. (a) **PRELIMINARY NOTIFICATION.**—Not later than ninety days after promulgation of regulations under section 3001 identifying by its characteristics of listing any substance as hazardous waste subject to this subtitle, any person generating or transporting such substance or owning or operating a facility for treatment, storage, or disposal of such substances shall file with the Administrator (or with States having authorized hazardous waste permit programs under section 3006) a notification stating the location and general description of such activity and the identified or listed hazardous wastes handled by such person. Not later than fifteen

months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984—

(1) the owner or operator of any facility which produces a fuel (A) from any hazardous waste identified or listed under section 3001, (B) from such hazardous waste identified or listed under section 3001 and any other material, (C) from used oil, or (D) from used oil and any other material;

(2) the owner or operator of any facility (other than a single- or two-family residence) which burns for purposes of energy recovery any fuel produced as provided in paragraph (1) or any fuel which otherwise contains used oil or any hazardous waste identified or listed under section 3001; and

(3) any person who distributes or markets any fuel which is produced as provided in paragraph (1) or any fuel which otherwise contains used oil or any hazardous waste identified or listed under section 3001

shall file with the Administrator (and with the State in the case of a State with an authorized hazardous waste program) a notification stating the location and general description of the facility, together with a description of the identified or listed hazardous waste involved and, in the case of a facility referred to in paragraph (1) or (2), a description of the production or energy recovery activity carried out at the facility and such other information as the Administrator deems necessary. For purposes of the preceding sentence, the term "hazardous waste listed under section 3001" also includes any commercial chemical product which is listed under section 3001 and which, in lieu of its original intended use, is (i) produced for use as (or as a component of) a fuel, (ii) distributed for use as a fuel, or (iii) burned as a fuel. Notification shall not be required under the second sentence of this subsection in the case of facilities (such as residential boilers) where the Administrator determines that such notification is not necessary in order for the Administrator to obtain sufficient information respecting current practices of facilities using hazardous waste for energy recovery. Nothing in this subsection shall be construed to affect or impair the provisions of section 3001(b)(3). Nothing in this subsection shall affect regulatory determinations under section 3014.

In revising any regulation under section 3001 identifying additional characteristics of hazardous waste or listing any additional substance as hazardous waste subject to this subtitle, the Administrator may require any person referred to in the [preceding sentence] proceeding provisions to file with the Administrator (or with States having authorized hazardous waste permit programs under section 3006) the notification described in the [preceding sentence] proceeding provisions. Not more than one such notification shall be required to be filed with respect to the same substance. No identified or listed hazardous waste subject to this subtitle may be transported, treated, stored, or disposed of unless notification has been given as required under this subsection.

(b) **EFFECTIVE DATE OF REGULATION.**—The regulations under this subtitle respecting requirements applicable to the generation, transportation, treatment, storage, or disposal of hazardous waste (including requirements respecting permits for such treatment, storage, or disposal) shall take effect on the date six months after

the date of promulgation thereof (or six months after the date of revision in the case of any regulation which is revised after the date required for promulgation thereof). At the time a regulation is promulgated, the Administrator may provide for a shorter period prior to the effective date, or an immediate effective date for:

- (1) a regulation with which the Administrator finds the regulated community does not need six months to come into compliance;
- (2) a regulation which responds to an emergency situation; or
- (3) other good cause found and published with the regulation.

AUTHORIZATION OF ASSISTANCE TO STATES

SEC. 3011. (a) AUTHORIZATION.—There is authorized to be appropriated \$25,000,000 for each of the fiscal years 1978 and 1979, \$20,000,000 for fiscal year 1980, \$35,000,000 for fiscal year 1981, [and \$40,000,000 for fiscal year 1982] \$40,000,000 for the fiscal year 1982, \$55,000,000 for the fiscal year 1985, \$60,000,000 for the fiscal year 1986, \$60,000,000 for the fiscal year 1987, and \$60,000,000 for the fiscal year 1988 to be used to make grants to the States for purposes of assisting the States in the development and implementation of authorized State hazardous waste programs.

(b) ALLOCATION.—Amounts authorized to be appropriated under subsection (a) shall be allocated among the States on the basis of regulations promulgated by the Administrator, after consultation with the States, which take into account, the extent to which hazardous waste is generated, transported, treated, stored, and disposed of within such State, the extent of exposure of human beings and the environment within such State to such State to such waste, and such other factors as the Administrator deems appropriate.

(c) ACTIVITIES INCLUDED.—State hazardous waste programs for which grants may be made under subsection (a) may include (but shall not be limited to) planning for hazardous waste treatment, storage and disposal facilities, and the development and execution of programs to protect health and the environment from inactive facilities which may contain hazardous waste.

HAZARDOUS WASTE SITE INVENTORY

SEC. 3012. (a) STATE INVENTORY PROGRAMS.—Each State shall, as expeditiously as practicable, undertake a continuing program to compile, publish, and submit to the Administrator an inventory describing the location of each site within such State at which hazardous waste has at any time been stored or disposed of. Such inventory shall contain—

- (1) a description of the location of the sites at which any such storage or disposal has taken place before the date on which permits are required under section 3005 for such storage or disposal;
- (2) such information relating to the amount, nature, and toxicity of the hazardous waste at each such site as may be practicable to obtain and may be necessary to determine the extent of any health hazard which may be associated with such

(3) the name and address, or corporate headquarters of, the owner of each such site, determined as of the date of preparation of the inventory;

(4) an identification of the types or techniques of waste treatment or disposal which have been used at each site; and

(5) information concerning the current status of the site, including information respecting whether or not hazardous waste is currently being treated or disposed of at such site (and if not, the date on which such activity ceased) and information respecting the nature of any other activity currently carried out at such site.

For purposes of assisting the States in compiling information under this section, the Administrator shall make available to each State undertaking a program under this section such information as is available to him concerning the items specified in paragraphs (1) through (5) with respect to the sites within such State, including such information as the Administrator is able to obtain from other agencies or departments of the United States and from surveys and studies carried out by any committee or subcommittee of the Congress. Any State may exercise the authority of section 3007 for purposes of this section in the same manner and to the same extent as provided in such section in the case of States having an authorized hazardous waste program, and any State may by order require any person to submit such information as may be necessary to compile the data referred to in paragraphs (1) through (5).

(b) ENVIRONMENTAL PROTECTION AGENCY PROGRAM.—If the Administrator determines that any State program under subsection (a) is not adequately providing information respecting the sites in such State referred to in subsection (a), the Administrator shall notify the State. If within ninety days following such notification, the State program has not been revised or amended in such manner as will adequately provide such information, the Administrator shall carry out the inventory program in such State. In any such case—

(1) the Administrator shall have the authorities provided with respect to State programs under subsection (a);

(2) the funds allocated under subsection (c) for grants to States under this section may be used by the Administrator for carrying out such program in such State; and

(3) no further expenditure may be made for grants to such State under this section until such time as the Administrator determines that such State is carrying out, or will carry out, an inventory program which meets the requirements of this section.

(c) GRANTS.—(1) Upon receipt of an application submitted by any State to carry out a program under this section, the Administrator may make grants to the States for purposes of carrying out such a program. Grants under this section shall be allocated among the several States by the Administrator based upon such regulations as he prescribes to carry out the purposes of this section. The Administrator may make grants to any State which has conducted an inventory program which effectively carried out the purposes of this section before the date of the enactment of the Solid Waste Disposal Act Amendments of 1990 to reimburse such State.

portion of the costs incurred by such State in conducting such program.

(2) There are authorized to be appropriated to carry out this section **[\$20,000,000.] \$25,000,000 for each of the fiscal years 1985 through 1988.**

(d) **NO IMPEDIMENT TO IMMEDIATE REMEDIAL ACTION.**—Nothing in this section shall be construed to provide that the Administrator or any State should, pending completion of the inventory required under this section, postpone undertaking any enforcement or remedial action with respect to any site at which hazardous waste has been treated, stored, or disposed of.

MONITORING, ANALYSIS, AND TESTING

SEC. 3013. (a) AUTHORITY OF ADMINISTRATOR.—If the Administrator determines, upon receipt of any information, that—

(1) the presence of any hazardous waste at a facility or site at which hazardous waste is, or has been, stored, treated, or disposed of, or

(2) the release of any waste from such facility or site may present a substantial hazard to human health or the environment,

he may issue an order requiring the owner or operator of such facility or site to conduct such monitoring, testing, analysis, and reporting with respect to such facility or site as the Administrator deems reasonable to ascertain the nature and extent of such hazard.

(b) **PREVIOUS OWNERS AND OPERATORS.**—In the case of any facility or site not in operation at the time a determination is made under subsection (a) with respect to the facility or site, if the Administrator finds that the owner of such facility or site could not reasonably be expected to have actual knowledge of the presence of hazardous waste at such facility or site and of its potential for release, he may issue an order requiring the most recent previous owner or operator of such facility or site who could reasonably be expected to have such actual knowledge to carry out the actions referred to in subsection (a).

(c) **PROPOSAL.**—An order under subsection (a) or (b) shall require the person to whom such order is issued to submit to the Administrator within 30 days from the issuance of such order a proposal for carrying out the required monitoring, testing, analysis, and reporting. The Administrator may, after providing such person with an opportunity to confer with the Administrator respecting such proposal, require such person to carry out such monitoring, testing, analysis, and reporting in accordance with such proposal, and such modifications in such proposal as the Administrator deems reasonable to ascertain the nature and extent of the hazard.

(d) **MONITORING, ETC., CARRIED OUT BY ADMINISTRATOR.**—(1) If the Administrator determines that no owner or operator referred to in subsection (a) or (b) is able to conduct monitoring, testing, analysis, or reporting satisfactory to the Administrator, if the Administrator deems any such action carried out by an owner or operator to be unsatisfactory, or if the Administrator cannot initially determine where is an owner or operator referred to in subsection (a)

(b) who is able to conduct such monitoring, testing, analysis, or reporting, he may—

(A) conduct monitoring, testing, or analysis (or any combination thereof) which he deems reasonable to ascertain the nature and extent of the hazard associated with the site concerned, or

(B) authorize a State or local authority or other person to carry out any such action,

and require, by order, the owner or operator referred to in subsection (a) or (b) to reimburse the Administrator or other authority or person for the costs of such activity.

(2) No order may be issued under this subsection requiring reimbursement of the costs of any action carried out by the Administrator which confirms the results of an order issued under subsection (a) or (b).

(3) For purposes of carrying out this subsection, the Administrator or any authority or other person authorized under paragraph (1), may exercise the authorities set forth in section 3007.

(e) **ENFORCEMENT.**—The Administrator may commence a civil action against any person who fails or refuses to comply with any order issued under this section. Such action shall be brought in the United States district court in which the defendant is located, resides, or is doing business. Such court shall have jurisdiction to require compliance with such order and to assess a civil penalty of not to exceed \$5,000 for each day during which such failure or refusal occurs.

RESTRICTIONS ON RECYCLED OIL

[SEC. 3012.] SEC. 3014. (a) IN GENERAL.—Not later than one year after the date of the enactment of this section, the Administrator shall promulgate regulations establishing such performance standards and other requirements as may be necessary to protect the public health and the environment from hazards associated with recycled oil. In development such regulations, the Administrator shall conduct an analysis of the economic impact of the regulations on the oil recycling industry. The Administrator shall ensure that the such regulations do not discourage the recovery or recycling of used oil [..], consistent with the protection of human health and the environment.

(b) **IDENTIFICATION OR LISTING OF USED OIL AS HAZARDOUS WASTE.**—Not later than twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 the Administrator shall propose whether to list or identify used automobile and truck crankcase oil as hazardous waste under section 3001. Not later than twenty-four months after such date of enactment, the Administrator shall make a final determination whether to list or identify used automobile and truck crankcase oil and other used oil as hazardous wastes under section 3001.

(c) **USED OIL WHICH IS RECYCLED.**—With respect to generators and transporters of used oil identified or listed as a hazardous waste under section 3001, the standards promulgated under section 3001(d), 3002, and 3003 of this subtitle shall not apply to such used oil if such used oil is recycled.

(2)(A) In the case of used oil which is exempt under paragraph (1), not later than twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate such standards under this subsection regarding the generation and transportation of used oil which is recycled as may be necessary to protect human health and the environment. In promulgating such regulations with respect to generators, the Administrator shall take into account the effect of such regulations on environmentally acceptable types of used oil recycling and the effect of such regulations on small quantity generators and generators which are small businesses (as defined by the Administrator).

(B) The regulations promulgated under this subsection shall provide that no generator of used oil which is exempt under paragraph (1) from the standards promulgated under section 3001(d), 3002, and 3003 shall be subject to any manifest requirement or any associated recordkeeping and reporting requirement with respect to such used oil if such generator—

(i) either—

(I) enters into an agreement or other arrangement (including an agreement or arrangement with an independent transporter or with an agent of the recycler) for delivery of such used oil to a recycling facility which has a permit under section 3005(c) (or for which a valid permit is deemed to be in effect under subsection (d)), or

(II) recycles such used oil at one or more facilities of the generator which has such a permit under section 3005 of this subtitle (or for which a valid permit is deemed to have been issued under subsection (d) of this section);

(ii) such used oil is not mixed by the generator with other types of hazardous wastes; and

(iii) the generator maintains such records relating to such used oil, including records of agreements or other arrangements for delivery of such used oil to any recycling facility referred to in clause (ix), as the Administrator deems necessary to protect human health and the environment.

(3) The regulations under this subsection regarding the transportation of used oil which is exempt from the standards promulgated under section 3001(d), 3002, and 3003 under paragraph (1) shall require the transporters of such used oil to deliver such used oil to a facility which has a valid permit under section 3005 of this subtitle or which is deemed to have a valid permit under subsection (d) of this section. The Administrator shall also establish other standards for such transporters as may be necessary to protect human health and the environment.

(d) PERMITS.—(1) The owner or operator of a facility which recycles used oil which is exempt under subsection (c)(1), shall be deemed to have a permit under this subsection for all such treatment or recycling (and any associated tank or container storage) if such owner and operator comply with standards promulgated by the Administrator under section 3004; except that the Administrator may require such owners and operators to obtain an individual permit under section 3005(c) if he determines that an individual permit is necessary to protect human health and the environment.

(2) Notwithstanding any other provision of law, any generator who recycles used oil which is exempt under subsection (c)(1) shall not be required to obtain a permit under section 3005(c) with respect to such used oil until the Administrator has promulgated standards under section 3004 regarding the recycling of such used oil.

EXPANSION DURING INTERIM STATUS

SEC. 3015. (a) WASTE PILES.—The owner or operator of a waste pile qualifying for the authorization to operate under section 3005(c) shall be subject to the same requirements for liners and leachate collection systems or equivalent protection provided in regulation promulgated by the Administrator under section 3004 before October 1, 1982, or revised under section 3004(a) (relating to minimum technological requirements), for new facilities receiving individual permits under subsection (c) of section 3005, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the waste management area identified in the permit application submitted under section 3005, and with respect to waste received beginning six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

(b) LANDFILLS AND SURFACE IMPOUNDMENTS.—(1) The owner or operator of a landfill or surface impoundment qualifying for the authorization to operate under section 3005(c) shall be subject to the requirements of section 3004(a) (relating to minimum technological requirements), with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the waste management area identified in the permit application submitted under this section, and with respect to waste received beginning 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

(2) The owner or operator of each unit referred to in paragraph (1) shall notify the Administrator (or the State, if appropriate) at least sixty days prior to receiving waste. The Administrator (or the State) shall require the filing, within six months of receipt of such notice, of an application for a final determination regarding the issuance of a permit for each facility submitting such notice.

(3) In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of this section and in good faith compliance with the Administrator's regulations and guidance documents governing liners and leachate collection systems, no liner or leachate collection system which is different from that which was so installed pursuant to this section shall be required for such unit by the Administrator when issuing the first permit under section 3005 to such facility, except that the Administrator shall not be precluded from requiring installation of a new liner when the Administrator has reason to believe that any liner installed pursuant to the requirements of this section is leaking. The Administrator may, under section 3004, amend the requirements for liners and leachate collection systems required under this section as may be necessary to provide additional protection for human health and the environment.

INVENTORY OF FEDERAL AGENCY HAZARDOUS WASTE FACILITIES

SEC. 3016. (a) Each Federal agency shall undertake a continuing program to compile, publish, and submit to the Administrator (and to the State in the case of sites in States having an authorized hazardous waste program) an inventory of each site which the Federal agency owns or operates or has owned or operated at which hazardous waste is stored, treated, or disposed of or has been disposed of at any time. The inventory shall be submitted every two years beginning January 31, 1986. Such inventory shall be available to the public as provided in section 3007(b). Information previously submitted by a Federal agency under section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or under section 3005 or 3010 of this Act, or under this section need not be resubmitted except that the agency shall update any previous submission to reflect the latest available data and information. The inventory shall include each of the following:

(1) A description of the location of each site at which any such treatment, storage, or disposal has taken place before the date on which permits are required under section 3005 for such storage, treatment, or disposal, and where hazardous waste has been disposed, a description of hydrogeology of the site and the location of withdrawal wells and surface water within one mile of the site.

(2) Such information relating to the amount, nature, and toxicity of the hazardous waste in each site as may be necessary to determine the extent of any health hazard which may be associated with any site.

(3) Information on the known nature and extent of environmental contamination at each site, including a description of the monitoring data obtained.

(4) Information concerning the current status of the site, including information respecting whether or not hazardous waste is currently being treated, stored, or disposed of at such site (and if not, the date on which such activity ceased) and information respecting the nature of any other activity currently carried out at such site.

(5) A list of sites at which hazardous waste has been disposed and environmental monitoring data has not been obtained, and the reasons for the lack of monitoring data at each site.

(6) A description of response actions undertaken or contemplated at contaminated sites.

(7) An identification of the types of techniques of waste treatment, storage, or disposal which have been used at each site.

(8) The name and address and responsible Federal agency for each site, determined as of the date of preparation of the inventory.

(b) ENVIRONMENTAL PROTECTION AGENCY PROGRAM.—If the Administrator determines that any Federal agency under subsection (a) is not adequately providing information respecting the sites referred to in subsection (a), the Administrator shall notify the chief official of such agency. If within ninety days following such notification, the Federal agency has not undertaken a program to adequately pro-

vide such information, the Administrator shall carry out the inventory program for such agency.

EXPORT OF HAZARDOUS WASTE

SEC. 3017. (a) IN GENERAL.—Beginning twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, no person shall export any hazardous waste identified or listed under this subtitle unless

(1)(A) such person has provided the notification required in subsection (c) of this section,

(B) the government of the receiving country has consented to accept such hazardous waste,

(C) a copy of the receiving country's written consent is attached to the manifest accompanying each waste shipment, and

(D) the shipment conforms with the terms of the consent of the government of the receiving country required pursuant to subsection (e), or

(2) the United States and the government of the receiving country have entered into an agreement as provided for in subsection (f) and the shipment conforms with the terms of such agreement.

(b) REGULATIONS.—Not later than twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate the regulations necessary to implement this section. Such regulations shall become effective one hundred and eighty days after promulgation.

(c) NOTIFICATION.—Any person who intends to export a hazardous waste identified or listed under this subtitle beginning twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, shall, before such hazardous waste is scheduled to leave the United States, provide notification to the Administrator. Such notification shall contain the following information:

(1) the name and address of the exporter;

(2) the types and estimated quantities of hazardous waste to be exported;

(3) the estimated frequency or rate at which such waste is to be exported; and the period of time over which such waste is to be exported;

(4) the ports of entry;

(5) a description of the manner in which such hazardous waste will be transported to and treated, stored, or disposed in the receiving country; and

(6) the name and address of the ultimate treatment, storage, or disposal facility.

(d) PROCEDURES FOR REQUESTING CONSENT OF THE RECEIVING COUNTRY.—Within thirty days of the Administrator's receipt of a complete notification under this section, the Secretary of State acting on behalf of the Administrator, shall—

(1) forward a copy of the notification to the government of the receiving country;

(2) advise the government that United States law prohibits the export of hazardous waste unless the receiving country consents to accept the hazardous waste;

(3) request the government to provide the Secretary with a written consent or objection to the terms of the notification; and

(4) forward to the government of the receiving country a description of the Federal regulations which would apply to the treatment, storage, and disposal of the hazardous waste in the United States.

(c) **CONVEYANCE OF WRITTEN CONSENT TO EXPORTER.**—Within thirty days of receipt by the Secretary of State of the receiving country's written consent or objection (or any subsequent communication withdrawing a prior consent or objection), the Administrator shall forward such a consent, objection, or other communication to the exporter.

(f) **INTERNATIONAL AGREEMENTS.**—Where there exists an international agreement between the United States and the government of the receiving country establishing notice, export, and enforcement procedures for the transportation, treatment, storage, and disposal of hazardous wastes, only the requirements of such actions (a)(2) and (g) shall apply.

(g) **REPORTS.**—After the date of enactment of the Hazardous and Solid Waste Amendments of 1984, any person who exports any hazardous waste identified or listed under section 3001 of this subtitle shall file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all such hazardous waste exported during the previous calendar year.

(h) **OTHER STANDARDS.**—Nothing in this section shall preclude the Administrator from establishing other standards for the export of hazardous wastes under section 3002 or section 3003 of this subtitle.

DOMESTIC SEWAGE

SEC. 3018. (a) REPORT.—The Administrator shall, not later than 15 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, submit a report to Congress concerning those substances identified or listed under section 3001 which are not regulated under this subtitle by reason of the exclusion for mixtures of domestic sewage and other wastes that pass through a sewer system to a publicly owned treatment works. Such report shall include the types, size and number of generators which dispose of such substances in this manner, the types and quantities disposed of in this manner, and the identification of significant generators, wastes, and waste constituents not regulated under existing Federal law or regulated in a manner sufficient to protect human health and the environment.

(b) **REVISIONS OR REGULATIONS.**—Within eighteen months after submitting the report specified in subsection (a), the Administrator shall revise existing regulations and promulgate such additional regulations pursuant to this subtitle (or any other authority of the Administrator, including section 307 of the Federal Water Pollution Control Act) as are necessary to assure that substances identified or

listed under section 3001 which pass through a sewer system to a publicly owned treatment works are adequately controlled to protect human health and the environment.

(c) **REPORT ON WASTEWATER LAGOONS.**—The Administrator shall, within thirty-six months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, submit a report to Congress concerning wastewater lagoons at publicly owned treatment works and their effect on groundwater quality. Such report shall include—

(1) the number and size of such lagoons;

(2) the types and quantities of waste contained in such lagoons;

(3) the extent to which such waste has been or may be released from such lagoons and contaminate ground water; and

(4) available alternatives for preventing or controlling such releases.

The Administrator may utilize the authority of sections 3007 and 3013 for the purpose of completing such report.

(d) **APPLICATION OF SECTION 3010 AND SECTION 3007.**—The provisions of sections 3007 and 3010 shall apply to solid or dissolved materials in domestic sewage to the same extent and in the same manner as such provisions apply to hazardous waste.

EXPOSURE INFORMATION AND HEALTH ASSESSMENTS

SEC. 3019. (a) EXPOSURE INFORMATION.—Beginning on the date nine months after the enactment of the Hazardous and Solid Waste Amendments of 1984, each application for a final determination regarding a permit under section 3005(c) for a landfill or surface impoundment shall be accompanied by information reasonably ascertainable by the owner or operator on the potential for the public to be exposed to hazardous wastes or hazardous constituents through releases related to the unit. At a minimum, such information must address:

(1) reasonably foreseeable potential releases from both normal operations and accidents at the unit, including releases associated with transportation to or from the unit;

(2) the potential pathways of human exposure to hazardous wastes or constituents resulting from the releases described under paragraph (1); and

(3) the potential magnitude and nature of the human exposure resulting from such releases.

The owner or operator of a landfill or surface impoundment for which an application for such a final determination under section 3005(c) has been submitted prior to the date of enactment of the Hazardous and Solid Waste Amendments of 1984 shall submit the information required by this subsection to the Administrator (or the State, in the case of a State with an authorized program) no later than the date nine months after such date of enactment.

(b) **HEALTH ASSESSMENTS.**—(1) The Administrator (or the State, in the case of a State with an authorized program) shall make the information required by subsection (a), together with other relevant information, available to the Agency for Toxic Substances and Disease

Registry established by section 104(i) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980.

(2) Whenever in the judgment of the Administrator, or the State (in the case of a State with an authorized program), a landfill or a surface impoundment poses a substantial potential risk to human health, due to the existence of releases of hazardous constituents, the magnitude of contamination with hazardous constituents which may be the result of a release, or the magnitude of the population exposed to such release or contamination, the Administrator or the State (with the concurrence of the Administrator) may request the Administrator of the Agency for Toxic Substances and Disease Registry to conduct a health assessment in connection with such facility and take other appropriate action with respect to such risks as authorized by section 104 (b) and (i) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980. If funds are provided in connection with such request the Administrator of such Agency shall conduct such health assessment.

(c) **MEMBERS OF THE PUBLIC.**—Any member of the public may submit evidence of releases of or exposure to hazardous constituents from such a facility, or as to the risks or health effects associated with such releases or exposure, to the Administrator of the Agency for Toxic Substances and Disease Registry, the Administrator, or the State (in the case of a State with an authorized program).

(d) **PRIORITY.**—In determining the order in which to conduct health assessments under this subsection, the Administrator of the Agency for Toxic Substances and Disease Registry shall give priority to those facilities or sites at which there is documented evidence of release of hazardous constituents, at which the potential risk to human health appears highest, and for which in the judgment of the Administrator of such Agency existing health assessment data is inadequate to assess the potential risk to human health as provided in subsection (f).

(e) **PERIODIC REPORTS.**—The Administrator of such Agency shall issue periodic reports which include the results of all the assessments carried out under this section. Such assessments or other activities shall be reported after appropriate peer review.

(f) **DEFINITION.**—For the purposes of this section, the term 'health assessments' shall include preliminary assessments of the potential risk to human health posed by individual sites and facilities subject to this section, based on such factors as the nature and extent of contamination, the existence of potential for pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified contaminants and any available recommended exposure or tolerance limits for such contaminants, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The assessment shall include an evaluation of the risks to the potentially affected population from all sources of such contaminants, including known point or nonpoint sources other than the site or facility in question. A purpose of such preliminary assessments shall be to help determine whether full-

scale health or epidemiological studies and medical evaluations of exposed populations shall be undertaken.

(g) **COST RECOVERY.**—In any case in which a health assessment performed under this section discloses the exposure of a population to the release of a hazardous substance, the costs of such health assessment may be recovered as a cost of response under section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 from persons causing or contributing to such release of such hazardous substance or, in the case of multiple releases contributing to such exposure, to all such release.

INTERSTATE CONTROL OF HAZARDOUS WASTE INJECTION

SEC. [7003, 3020.] (a) UNDERGROUND SOURCE OF DRINKING WATER.—No hazardous waste may be disposed of by underground injection—

(1) into a formation which contains (within one-quarter mile of the well used for such underground injection) an underground source of drinking water; or

(2) above such a formation.

The prohibitions established under this section shall take effect 6 months after the enactment of the Hazardous and Solid Waste Amendments of 1984 except in the case of any State in which identical or more stringent prohibitions are in effect before such date under the Safe Drinking Water Act.

(b) **ACTIONS UNDER CERCLA.**—Subsection (a) shall not apply to the injection of contaminated ground water into the aquifer from which it was withdrawn, if—

(1) such injection is—

(A) a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, or

(B) part of corrective action required under this title intended to clean up such contamination;

(2) such contaminated ground water is treated to substantially reduce hazardous constituents prior to such injection; and

(3) such response action or corrective action will, upon completion, be sufficient to protect human health and the environment.

(c) **ENFORCEMENT.**—In addition to enforcement under [Sections 7003 and 7005 of this Act,] provisions of this Act) the prohibitions established under paragraphs (1) and (2) of subsection (a) shall be enforceable under the Safe Drinking Water Act in any State—

(1) which has adopted identical or more stringent prohibitions under part C of the Safe Drinking Water Act and which has assumed primary enforcement responsibility under that Act for enforcement of such prohibitions; or

(2) in which the Administrator has adopted identical or more stringent prohibitions under the Safe Drinking Water Act and is exercising primary enforcement responsibility under that Act for enforcement of such prohibitions.

* P.L. 99-339, the Safe Drinking Water Act Amendments

* Language enclosed in light face brackets indicates an amendment made by P.L. 99-339, the Safe Drinking Water Act Amendments

(d) The terms "primary enforcement responsibility", "underground source of drinking water", "formation" and "well" have the same meanings as provided in regulations of the Administrator under the Safe Drinking Water Act. The term "Safe Drinking Water Act" means title XIV of the Public Health Service Act.

Subtitle D—State or Regional Solid Waste Plans

OBJECTIVES OF SUBTITLE

Sec. 4001. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources including energy and materials, which are recoverable from solid waste and to encourage resource conservation. Such objectives are to be accomplished through Federal technical and financial assistance to States or regional authorities for comprehensive planning pursuant to Federal guidelines designed to foster cooperation among Federal, State, and local governments and private industry. In developing such comprehensive plans, it is the intention of this Act that in determining the size of the waste-to-energy facility, adequate provision shall be given to the present and reasonably anticipated future needs, including those needs created by thorough implementation of section 6002(h), of the recycling and resource recovery interest within the area encompassed by the planning process.

FEDERAL GUIDELINES FOR PLANS

Sec. 4002. (a) **GUIDELINES FOR IDENTIFICATION OF REGIONS.**—For purposes of encouraging and facilitating the development of regional planning for solid waste management, the Administrator, within one hundred and eighty days after the date of enactment of this section and after consultation with appropriate Federal, State, and local authorities, shall by regulation publish guidelines for the identification of those areas which have common solid waste management problems and are appropriate units for planning regional solid waste management services. Such guidelines shall consider—

- (1) the size and location of areas which should be included,
- (2) the volume of solid waste which should be included, and
- (3) the available means of coordinating regional planning with other related regional planning and for coordination of such region planning into the State plan.

(b) **GUIDELINES FOR STATE PLANS.**—Not later than eighteen months after the date of enactment of this section and after notice and hearing, the Administrator shall, after consultation with appropriate Federal, State, and local authorities, promulgate regulations containing guidelines to assist in the development and implementation of State solid waste management plans (hereinafter in this title referred to as "State plans"). The guidelines shall contain methods for achieving the objectives specified in section 4001. Such guidelines shall be reviewed from time to time, but not less frequently than every three years, and revised as may be appropriate.

(c) **CONSIDERATIONS FOR STATE PLAN GUIDELINES.**—The guidelines promulgated under subsection (b) shall consider—

- (1) the varying regional, geologic, hydrologic, climate, and other circumstances under which different solid waste practices are required in order to insure the reasonable protection of the quality of the ground and surface waters from leachate contamination, the reasonable protection of the quality of the surface waters from surface runoff contamination, and the reasonable protection of ambient air quality;
- (2) characteristics and conditions of collection, storage, processing, and disposal operating methods, techniques and practices, and location of facilities where such operating methods, techniques, and practices are conducted, taking into account the nature of the material to be disposed;
- (3) methods for closing or upgrading open dumps for purposes of eliminating potential health hazards;
- (4) population density, distribution, and projected growth;
- (5) geographic, geologic, climate, and hydrologic characteristics;
- (6) the type and location of transportation;
- (7) the profile of industries;
- (8) the constituents and generation rates waste;
- (9) the political, economic, organizational, financial, and management problems affecting comprehensive solid waste management;
- (10) types of resource recovery facilities and resource conservation systems which are appropriate; and
- (11) available new and additional market for recovered material and energy and energy resources recovered from solid waste as well as methods for conserving such materials and energy.

REQUIREMENTS FOR APPROVAL OF PLANS

Sec. 4003. (a) **MINIMUM REQUIREMENTS.**—In order to be approved under section 4007, each State plan must comply with the following minimum requirements—

(1) The plan shall identify (in accordance with section 4006(b)(A)) the responsibilities of State, local, and regional authorities in the implementation of the State plan, (B) the distribution of Federal funds to the authorities responsible for development and implementation of State plan, and (C) the means for coordinating regional planning and implementation under the State plan.

(2) The plan shall, in accordance with sections 4004(b) and 4005(a) prohibit the establishment of new open dumps within the State, and contain requirements that all solid waste (including solid waste originating in other States, but not including hazardous waste) shall be (A) utilized for resource recovery or (B) disposed of in sanitary landfills (within the meaning of section 4004(a)) or otherwise disposed of in an environmentally sound manner.

(3) The plan shall provide for the closing or upgrading of all existing open dumps within the State pursuant to the requirements of section 4005.

(4) The plan shall provide for the establishment of such State regulatory powers as may be necessary to implement the plan.

(5) The plan shall provide that no State or local government within the State shall be prohibited, under State or local law, from negotiating and entering into long-term contracts for the supply of solid waste to resource recovery facilities, or for conserving materials or energy by reducing the volume of waste, from entering into long-term contracts for the operation of such facilities, or from securing long-term markets for material and energy recovered from such facilities.

(6) The plan shall provide for such resource conservation or recovery and for the disposal of solid waste in sanitary landfills or any combination of practices so as may be necessary to use or dispose of such waste in a manner that is environmentally sound.

(b) DISCRETIONARY PLAN PROVISIONS RELATING TO RECYCLED OIL.—Any State plan submitted under this subtitle may include, at the option of the State, provisions to carry out each of the following:

(1) Encouragement, to the maximum extent feasible and consistent with the protection of the public health and the environment, of the use of recycled oil in all appropriate areas of State and local government.

(2) Encouragement of persons contracting with the State to use recycled oil to the maximum extent feasible, consistent with protection of the public health and the environment.

(3) Informing the public of the uses of recycled oil.

(4) Establishment and implementation of a program (including any necessary licensing of persons and including the use, where appropriate, of manifests) to assure that used oil is collected, transported, treated, stored, reused, and disposed of, in a manner which does not present a hazard to the public health or the environment.

Any plan submitted under this title before the date of the enactment of the Used Oil Recycling Act of 1980 may be amended, at the option of the State, at any time after such date to include any provision referred to in this subsection.

[(b)] (c) ENERGY AND MATERIALS CONSERVATION AND RECOVERY FEASIBILITY PLANNING AND ASSISTANCE.—(1) A State which has a plan approved under this subtitle or which has submitted a plan for such approval shall be eligible for assistance under section 4008(a)(3) if the Administrator determines that under such plan the State will—

(A) analyze and determine the economic and technical feasibility of facilities and programs to conserve resources which contribute to the waste stream or to recovery energy and materials from municipal waste;

(B) analyze the legal, institutional, and economic impediments to the development of systems and facilities for conservation of energy or materials which contribute to the waste stream or for the recovery of energy and materials from municipal waste and make recommendations to appropriate governmental authorities for overcoming such impediments;

(C) assist municipalities within the State in developing plans, programs, and projects to conserve resources or recover energy and materials from municipal waste; and

(D) coordinate the resource conservation and recovery planning under subparagraph (C).

(2) The analysis referred to in paragraph (1)(A) shall include—

(A) the evaluation of, and establishment of priorities among, market opportunities for industrial and commercial users of all types (including public utilities and industrial parks) to utilize energy and materials recovered from municipal waste;

(B) comparisons of the relative costs of energy recovered from municipal waste in relation to the costs of energy derived from fossil fuels and other sources;

(C) studies of the transportation and storage problems and other problems associated with the development of energy and materials recovery technology, including curbside source separation;

(D) the evaluation and establishment of priorities among ways of conserving energy or materials which contribute to the waste stream;

(E) comparison of the relative total costs between conserving resources and disposing of or recovering such waste; and

(F) study of impediments to resource conservation or recovery, including business practices, transportation requirements, or storage difficulties.

Such studies and analyses shall also include studies of other sources of solid waste from which energy and materials may be recovered or minimized.

(d) SIZE OF WASTE-TO-ENERGY FACILITIES.—Notwithstanding any of the above requirements, it is the intention of this Act and the planning process developed pursuant to this Act that in determining the size of the waste-to-energy facility, adequate provision shall be given to the present and reasonably anticipated future needs of the recycling and resource recovery interest within the area encompassed by the planning process.

CRITERIA FOR SANITARY LANDFILL; SANITARY LANDFILLS REQUIRED FOR ALL DISPOSAL

SEC. 4004. (a) CRITERIA FOR SANITARY LANDFILLS.—Not later than one year after the date of enactment of this section, after consultation with the States, and after notice and public hearings, the Administrator shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps within the meaning of this Act. At a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility. Such regulations may provide for the classification of the types of sanitary landfills.

(b) DISPOSAL REQUIRED TO BE IN SANITARY LANDFILLS, ETC.—For purposes of complying with section 4003(2) each State plan shall prohibit the establishment of open dumps and contain a require-

... that disposal of all solid waste within the State shall be in compliance with such section 4003(2).

(c) **EFFECTIVE DATE.**—The prohibition contained in subsection (b) shall take effect on the date six months after the date of promulgation of regulations under subsection (a). [or on the date of approval of the State plan, whichever is later.]

UPGRADING OF OPEN DUMPS

SEC. 4005. (a) CLOSING OR UPGRADING OF EXISTING OPEN DUMPS.—Upon promulgation of criteria under section 1008(a)(3), any solid waste management practice or disposal of solid waste or hazardous waste which constitutes the open dumping of solid waste or hazardous waste is prohibited, except in the case of any practice or disposal of solid waste under a timetable or schedule for compliance established under this section. The prohibition contained in the preceding sentence shall be enforceable under section 7002 against persons engaged in the act of open dumping. For purposes of complying with section 4003(2), and 4003(3) each State plan shall contain a requirement that all existing disposal facilities or sites for solid waste in such State which are open dumps listed in the inventory under subsection (b) shall comply with such measures as may be promulgated by the Administrator to eliminate health hazards and minimize potential health hazards. Each such plan shall establish, for any entity which demonstrates that it has considered other public or private alternatives for solid waste management to comply with the prohibition on open dumping and is unable to utilize such alternatives to so comply, a timetable or schedule for compliance for such practice or disposal of solid waste which specifies a schedule of remedial measures, including an enforceable sequence of actions or operations, leading to compliance with the prohibition on open dumping of solid waste within a reasonable time (not to exceed 5 years from the date of publication of criteria under section 1008(a)(3)).

(b) **INVENTORY.**—To assist the States in complying with section 4003(3), not later than one year after promulgation of regulations under section 4004, the Administrator, with the cooperation of the Bureau of Census shall publish an inventory of all disposal facilities or sites in the United States which are open dumps within the meaning of this Act.

(c) **CONTROL OF HAZARDOUS DISPOSAL.**—(1)(A) Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, each State shall adopt and implement a permit program or other system of prior approval and conditions to assure that each solid waste management facility within such State which may receive hazardous household waste or hazardous waste due to the provision of section 3001(d) for small quantity generators (otherwise not subject to the requirement for a permit under section 3005) will comply with the applicable criteria promulgated under section 4004(a) and section 1008(a)(3).

(B) Not later than eighteen months after the promulgation of revised criteria under subsection 4004(a) (as required by section 4010(c)), each State shall adopt and implement a permit program or other system or prior approval and conditions, to assure that each

solid waste management facility within such State which may receive hazardous household waste or hazardous waste due to the provision of section 3001(d) for small quantity generators (otherwise not subject to the requirement for a permit under section 3005) will comply with the criteria revised under section 4004(a).

(C) The Administrator shall determine whether each State has developed an adequate program under this paragraph. The Administrator may make such a determination in conjunction with approval, disapproval or partial approval of a State plan under section 4007.

(2)(A) In any State that the Administrator determines has not adopted an adequate program for such facilities under paragraph (1)(B) by the date provided in such paragraph, the Administrator may use the authorities available under sections 3007 and 3008 of this title to enforce the prohibition contained in subsection (a) of this section with respect to such facilities.

(B) For purposes of this paragraph, the term "requirement of this subtitle" in section 3008 shall be deemed to include criteria promulgated by the Administrator under sections 1008(a)(3) and 4004(a) of this title, and the term "hazardous wastes" in section 3007 shall be deemed to include solid waste at facilities that may handle hazardous household wastes or hazardous wastes from small quantity generators.

PROCEDURE FOR DEVELOPMENT AND IMPLEMENTATION OF STATE PLAN

SEC. 4006. (a) IDENTIFICATION OF REGIONS.—Within one hundred and eighty days after publication of guidelines under section 4002(a) (relating to identification of regions), the Government of each State, after consultation with local elected officials, shall promulgate regulations based on such guidelines identifying the boundaries of each area within the State which, as a result of urban concentrations, geographic conditions, markets, and other factors, is appropriate for carrying out regional solid waste management. Such regulations may be modified from time to time (identifying additional or different regions) pursuant to such guidelines.

(b) **IDENTIFICATION OF STATE AND LOCAL AGENCIES AND RESPONSIBILITIES.**—(1) Within one hundred and eighty days after the Governor promulgates regulations under subsection (a), for purposes of facilitating the development and implementation of a State plan which will meet the minimum requirements of section 4003, the State, together with appropriate elected officials of general purpose units of local government, shall jointly (A) identify an agency to develop the State plan and identify one or more agencies to implement such a plan, and (B) identify which solid waste management activities will, under such State plan, be planned for and carried out by the State and which such management activities will, under such State plan, be planned for and carried out by a regional or local authority or a combination of regional or local and State authorities. If a multi-functional regional agency authorized by State law to conduct solid waste planning and management (the members of which are appointed by the Governor) is in existence on the date of enactment of this Act, the Governor shall identify such authority for purposes of carrying out within such region (A) of

this paragraph. h. Where feasible, designation of the agency for the affected area designated under section 208 of the Federal Water Pollution Control Act (86 Stat. 839) shall be considered. A State agency identified under this paragraph shall be established or designated by the Governor of such State. Local or regional agencies identified under this paragraph shall be composed of individuals at least a majority of whom are elected local officials.

(2) If planning and implementation agencies are not identified and designated or established as required under paragraph (1) for any affected area, the Governor shall, before the date two hundred and seventy days after promulgation of regulations under subsection (a), establish or designate a State agency to develop and implement the State plan for such area.

(c) **INTERSTATE REGIONS.**—(1) In the case of any region which, pursuant to the guidelines published by the Administrator under section 4002(a) (relating to identification of regions), would be located in two or more States, the Governors of the respective States, after consultation with local elected officials, shall consult, cooperate, and enter into agreements identifying the boundaries of such region pursuant to subsection (a).

(2) Within one hundred and eighty days after an interstate region is identified by agreement under paragraph (1), appropriate elected officials of general purpose units of local government within such region shall jointly establish or designate an agency to develop a plan for such region. If no such agency is established or designated within such period by such officials, the Governors of the respective States may, by agreement, establish or designate for such purpose a single representative organization including elected officials of general purpose units of local government within such region.

(3) Implementation of interstate regional solid waste management plans shall be conducted by units of local government for any portion of region within their jurisdiction, or by multijurisdictional agencies or authorities designated in accordance with State law, including those designated by agreement by such units of local government for such purpose. If no such unit, agency, or authority is so designated, the respective Governors shall designate or establish a single interstate agency to implement such plan.

(4) For purposes of this subtitle, so much of an interstate regional plan as is carried out within a particular State shall be deemed part of the State plan for such State.

APPROVAL OF STATE PLAN; FEDERAL ASSISTANCE

SEC. 4007. (a) PLAN APPROVAL.—The Administrator shall, within six months after a State plan has been submitted for approval, approve or disapprove the plan. The Administrator shall approve a plan if he determines that—

- (1) it meets the requirements of paragraphs (1), (2), (3), and (5) of section 4003; and
- (2) it contains provision for revision of such plan, after notice and public hearing, whenever the Administrator, by regulation, determines—

(A) that revised regulations respecting minimum requirements have been promulgated under paragraphs (1), (2), (3), and (5) of section 4003 with which the State plan is not in compliance;

(B) that information has become available which demonstrates the inadequacy of the plan to effectuate the purposes of this subtitle; or

(C) that such revision is otherwise necessary.

The Administrator shall review approved plans from time to time and if he determines that revision or corrections are necessary to bring such plan into compliance with the minimum requirements promulgated under section 4003 (including new or revised requirements), he shall, after notice and opportunity for public hearing, withdraw his approval of such plan. Such withdrawal of approval shall cease to be effective upon the Administrator's determination that such compliance with such minimum requirements.

(b) **ELIGIBILITY OF STATES FOR FEDERAL FINANCIAL ASSISTANCE.**—

(1) The Administrator shall approve a State application for financial assistance under this subtitle, and make grants to such State, if such State and local and regional authorities within such State have complied with the requirements of section 4006 within the period required under such section and if such State has a State plan which has been approved by the Administrator under this subtitle.

(2) The Administrator shall approve a State application for financial assistance under this subtitle, and make grants to such State, for fiscal years 1978 and 1979 if the Administrator determines that the State plan continues to be eligible for approval under subsection (a) and is being implemented by the State.

(3) Upon withdrawal of approval of a State plan under subsection (a), the Administrator shall withhold Federal financial and technical assistance under this subtitle (other than such technical assistance as may be necessary to assist in obtaining the reinstatement of approval) until such time as such approval is reinstated.

(c) **EXISTING ACTIVITIES.**—Nothing in this subtitle shall be construed to prevent or affect any activities respecting solid waste planning or management which are carried out by State, regional, or local authorities unless such activities are inconsistent with a State plan approved by the Administrator under this subtitle.

FEDERAL ASSISTANCE

SEC. 4008. (a) AUTHORIZATION OF FEDERAL FINANCIAL ASSISTANCE.—(1) There are authorized to be appropriated \$30,000,000 for fiscal year 1978, \$40,000,000 for fiscal year 1979, \$20,000,000 for fiscal year 1980, \$15,000,000 for fiscal year 1981, [and \$20,000,000 for fiscal year 1982] \$20,000,000 for the fiscal year 1982, and \$10,000,000 for each of the fiscal years 1985 through 1988 for purposes of financial assistance to States and local, regional, and interstate authorities for the development and implementation of plans approved by the Administrator under this subtitle (other than the provisions of such plans referred to in section 4003(b), relating to feasibility planning for municipal waste energy and materials conservation and recovery).

(2XA) The Administrator is authorized to provide financial assistance to States, counties, municipalities, and intermunicipal agencies and State and local public solid waste management authorities for implementation of programs to provide solid waste management, resource recovery, and resource conservation services and hazardous waste management. Such assistance shall include assistance for facility planning and feasibility studies; expert consultation; surveys and analyses of market needs; marketing of recovered resources; technology assessments; legal expenses; construction feasibility studies; source separation projects; and fiscal or economic investigations or studies; but such assistance shall not include any other element of construction, or any acquisition of land or interest in land, or any subsidy for the price of recovered resources. Agencies assisted under this subsection shall consider existing solid waste management and hazardous waste management services and facilities as well as facilities proposed for construction.

(B) An applicant for financial assistance under this paragraph must agree to comply with respect to the project or program assisted with the applicable requirements of section 4005 and subtitle C of this Act and apply applicable solid waste management practices, methods, and levels of control consistent with any guidelines published pursuant to section 1008 of this Act. Assistance under this paragraph shall be available only for programs certified by the State to be consistent with any applicable State or areawide solid waste management plan or program. Applicants for technical and financial assistance under this section shall not preclude or foreclose consideration of programs for the recovery of recyclable materials through source separation or other resource recovery techniques.

(C) There are authorized to be appropriated \$15,000,000 for each of the fiscal years 1978 and 1979 for purposes of this section. There are authorized to be appropriated \$10,000,000 for fiscal year 1980, \$10,000,000 for fiscal year 1981, [and \$10,000,000 for fiscal year 1982] \$10,000,000 for fiscal year 1982, and \$10,000,000 for each of the fiscal years 1985 through 1988 for purposes of this paragraph.

(3XA) There is authorized to be appropriated for the fiscal year beginning October 1, 1981, and for each fiscal year thereafter before October 1, 1986, \$4,000,000 for purposes of making grants to States to carry out section 4003(b). No amount may be appropriated for such purposes for the fiscal year beginning October 1, 1986, or for any fiscal year thereafter.

(B) Assistance provided by the Administrator under this paragraph shall be used only for the purposes specified in section 4003(b). Such assistance may not be used for purposes of land acquisition, final facility design, equipment purchase, construction, startup or operation activities.

(C) Where appropriate, any State receiving assistance under this paragraph may make all or any part of such assistance available to municipalities within the State to carry out the activities specified in section 4003(b)(1) (A) and (B).

(D) There are authorized—

(i) to be made available \$15,000,000 out of funds appropriated for fiscal year 1985, and

(ii) to be appropriated for each of the fiscal years 1986 through 1988, \$20,000,000 for grants to States (and where appropriate to regional, local, and interstate agencies) to implement programs requiring compliance by solid waste management facilities with the criteria promulgated under section 4001(a) and section 1003(a)(3) and with the provisions of section 4005. To the extent practicable, such programs shall require such compliance not later than thirty-six months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

(b) STATE ALLOTMENT.—The sums appropriated in any fiscal year under subsection (a)(1) be allotted by the Administrator among all States, in the ratio that the population in each State bears to the population in all of the States, except that no State shall receive less than one-half of 1 per centum of the sums so allotted in any fiscal year. No State shall receive any grant under this section during any fiscal year when its expenditures of non-Federal funds for other than nonrecurrent expenditures for solid waste management control programs will be less than its expenditures were for such programs during fiscal year 1976, except that such funds may be reduced by an amount equal to their proportionate share of any general reduction of State spending ordered by the Governor or legislature of such State. No State shall receive any grant for solid waste management programs unless the Administrator is satisfied that such grant will be so used as to supplement and, to the extent practicable, increase the level of State, local, regional, or other non-Federal funds that would in the absence of such grant be made available for the maintenance of such programs.

(c) DISTRIBUTION OF FEDERAL FINANCIAL ASSISTANCE WITHIN THE STATE.—The Federal assistance allotted to the States under subsection (b) shall be allocated by the State receiving such funds to State, local, regional, and interstate authorities carrying out planning and implementation of the State plan. Such allocation shall be based upon the responsibilities of the respective parties as determined pursuant to section 4006(b).

(d) TECHNICAL ASSISTANCE.—(1) The Administrator may provide technical assistance to State and local governments for purposes of developing and implementing State plans. Technical assistance respecting resource recovery and conservation may be provided through resource recovery and conservation panels, established in the Environmental Protection Agency under subtitle B, to assist the State and local governments with respect to particulate resource recovery and conservation projects under consideration and to evaluate their effect on the State plan.

(2) In carrying out this subsection, the Administrator is authorized to provide technical assistance to States, municipalities, regional authorities, and intermunicipal agencies upon request, to assist in the removal or modification of legal, institutional, and economic impediments which have the effect of impeding the development of systems and facilities to recover energy and materials from municipal waste or to conserve energy or materials which contribute to the waste stream. Such impediments may include—

(A) laws, regulations, and policies, including State and local procurement policies, which are not favorable to resource conservation and recovery policies, systems, and facilities;

(B) impediments to the financing of facilities to conserve or recover energy and materials from municipal waste through the exercise of State and local authority to issue revenue bonds and the use of State and local credit assistance; and

(C) impediments to institutional arrangements necessary to undertake projects for the conservation or recovery of energy and materials from municipal waste, including the creation of special districts, authorities, or corporations where necessary having the power to secure the supply of waste of a project, to conserve resources, to implement the project, and to undertake related activities.

[2] (3) In carrying out this subsection, the Administrator may, upon request, provide technical assistance to States to assist in the removal or modification of legal, institutional, economic, and other impediments to the recycling of used oil. Such impediments may include laws, regulations, and policies, including State procurement policies, which are not favorable to the recycling of used oil.

(c) SPECIAL COMMUNITIES.—(1) The Administrator, in cooperation with State and local officials, shall identify local governments within the United States (A) having a solid waste disposal facility (i) which is owned by the unit of local government, (ii) for which an order has been issued by the State to cease receiving solid waste for treatment, storage, or disposal, and (iii) which is subject to a State-approved end-use recreation plan, and (B) which are located over an aquifer which is the source of drinking water for any person or public water system and which has serious environmental problems resulting from the disposal of such solid waste, including possible methane migration;

(2) There is authorized to be appropriated to the Administrator \$2,500,000 for the fiscal year 1980, [and \$1,500,000 for each of the fiscal years 1981 and 1982] *\$1,500,000 for each of the fiscal years 1981 and 1982, and \$500,000 for each of the fiscal years 1985 through 1988* to make grants to be used for containment and stabilization of solid waste located at the disposal sites referred to in paragraph (1). Not more than one community in any State shall be eligible for grants under this paragraph and not more than one project in any State shall be eligible for such grants. No unit of local government shall be eligible for grants under this paragraph with respect to any site which exceeds 65 acres in size.

(f) ASSISTANCE TO MUNICIPALITIES FOR ENERGY AND MATERIALS CONSERVATION AND RECOVERY PLANNING ACTIVITIES.—(1) The Administrator is authorized to make grants to municipalities, regional authorities, and intermunicipal agencies to carry out activities described in subparagraph (A) and (B) of section 4003(b)(1). Such grants may be made only pursuant to an application submitted to the Administrator by the municipality which application has been approved by the State and determined by the State to be consistent with any State plan approved or submitted under this subtitle or any other appropriate planning carried out by the State.

(2) There is authorized to be appropriated for the fiscal year beginning October 1, 1981, and for each fiscal year thereafter before

October 1, 1986, \$8,000,000 for purposes of making grants to municipalities under this subsection. No amount may be appropriated for such purposes for the fiscal year beginning on October 1, 1986, or for any fiscal year thereafter.

(3) Assistance provided by the Administrator under this subsection shall be used only for the purposes specified in paragraph (1). Such assistance may not be used for purposes of land acquisition, final facility design, equipment purchases, construction, startup or operation activities.

[(f)] (g) ASSISTANCE TO STATES FOR DISCRETIONARY PROGRAM FOR RECYCLED OIL.—(1) The Administrator may make grants to States, which have a State plan approved under section 4007, or which have submitted a State plan for approval under such section, if such plan includes the discretionary provisions described in section 4007(b). Grants under this subsection shall be for purposes of assisting the State in carrying out such discretionary provisions. No grant under this subsection may be used for construction or for the acquisition of land or equipment.

(2) Grants under this subsection shall be allotted among the States in the same manner as provided in the first sentence of subsection (b).

(3) No grant may be made under this subsection unless an application therefor is submitted to, and approved by, the Administrator. The application shall be in such form, be submitted in such manner, and contain such information as the Administrator may require.

(4) For purposes of making grants under this subsection, there are authorized to be appropriated \$5,000,000 for fiscal year 1982 [and \$5,000,000 for fiscal year 1983.] *\$5,000,000 for fiscal year 1983, and \$5,000,000 for each of the fiscal years 1985 through 1988.*

RURAL COMMUNITIES ASSISTANCE

SEC. 4009. (a) IN GENERAL.—The Administrator shall make grants to States to provide assistance to municipalities with a population of five thousand or less, or counties with a population of ten thousand or less or less than twenty persons per square mile and not within a metropolitan area, for solid waste management facilities (including equipment) necessary to meet the requirements of section 4005 of this Act or restrictions on open burning or other requirements arising under the Clean Air Act or the Federal Water Pollution Control Act. Such assistance shall only be available.

(1) to any municipality or county which could not feasibly be included in a solid waste management system or facility serving an urbanized, multijurisdictional area because of its distance from such systems;

(2) where existing or planned solid waste management services or facilities are unavailable or insufficient to comply with the requirements of section 4005 of this Act; and

(3) for systems which are certified by the State to be consistent with any plans or programs established under any State or areawide planning process.

ALLOTMENT.—The Administrator shall allot the sums appropriated to carry out this section in any fiscal year among the States in accordance with regulations promulgated by him on the basis of the average of the ratio which the population of rural areas of each State bears to the total population of rural areas of all the States, the ratio which the population of counties in each State having less than twenty persons per square mile bears to the total population of such counties in all the States, and the ratio which the population of such low-density counties in each State having 33 per centum or more of all families with incomes not in excess of 125 per centum of the poverty level bears to the total population of such counties in all the States.

(c) **LIMIT.**—The amount of any grant under this section shall not exceed 75 per centum of the costs of the project. No assistance under this section shall be available for the acquisition of land or interest in land.

(d) **APPROPRIATIONS.**—There are authorized to be appropriated \$25,000,000 for each of the fiscal years 1978 and 1979 to carry out this section. There are authorized to be appropriated \$10,000,000 for the fiscal year 1980 and \$15,000,000 for each of the fiscal years 1981 and 1982 to carry out this section.

ADEQUACY OF CERTAIN GUIDELINES AND CRITERIA

SEC. 4010. (a) STUDY.—The Administrator shall conduct a study of the extent of which the guidelines and criteria under this Act (other than guidelines and criteria for facilities to which subtitle C applies) which are applicable to solid waste management and disposal facilities, including, but not limited to landfills and surface impoundments, are adequate to protect human health and the environment from ground water contamination. Such study shall include a detailed assessment of the degree to which the criteria under section 1008(a) and the criteria under section 4004 regarding monitoring, prevention of contamination, and remedial action are adequate to protect ground water and shall also include recommendation with respect to any additional enforcement authorities which the Administrator, in consultation with the Attorney General, deems necessary for such purpose.

(b) **REPORT.**—Not later than thirty-six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a report to the Congress setting forth the results of the study required under this section, together with any recommendations made by the Administrator on the basis of such study.

(c) **REVISIONS OF GUIDELINES AND CRITERIA.**—Not later than March 31, 1988, the Administrator shall promulgate revisions of the criteria promulgated under paragraph (1) of section 4004(a) and under section 1008(a)(3) for facilities that may receive hazardous household wastes or hazardous wastes from small quantity generators under section 3001(d). The criteria shall be those necessary to protect human health and the environment and may take into account the practicable capability of such facilities. At a minimum such revisions for facilities potentially receiving such wastes should require ground water monitoring as necessary to detect contamination.

tion, establish criteria for the acceptable location of new or existing facilities, and provide for corrective action as appropriate.

Subtitle E—Duties of the Secretary of Commerce in Resource and Recovery

FUNCTIONS

Sec. 5001. The Secretary of Commerce shall encourage greater commercialization of proven resource recovery technology by providing—

- (1) accurate specifications for recovered materials;
- (2) stimulation of development of markets for recovered materials;
- (3) promotion of proven technology; and
- (4) a forum for the exchange of technical and economic data relating to resource recovery facilities.

DEVELOPMENT OF SPECIFICATIONS FOR SECONDARY MATERIALS

Sec. 5002. The Secretary of Commerce, acting through the National Bureau of Standards, and in conjunction with national standards-setting organizations in resource recovery, shall, after public hearings, and not later than two years after September 1, 1979 publish guidelines for the development of specifications for the classification of materials recovered from waste which were destined for disposal. The specifications shall pertain to the physical and chemical properties and characteristics of such materials with regard to their use in replacing virgin materials in various industrial, commercial, and governmental uses. In establishing such guidelines the Secretary shall also, to the extent feasible, provide such information as may be necessary to assist Federal agencies with procurement of items containing recovered materials. The Secretary shall continue to cooperate with national standards-setting organizations, as may be necessary, to encourage the publication, promulgation and updating of standards for recovered materials and for the use of recovered materials in various industrial, commercial, and governmental uses.

DEVELOPMENT OF MARKETS FOR RECOVERED MATERIALS

Sec. 5003. The Secretary of Commerce shall within two years after September 1, 1979 take such actions as may be necessary to—

- (1) identify the geographical location of existing or potential markets for recovered materials;
- (2) identify the economic and technical barriers to the use of recovered materials; and
- (3) encourage the development of new uses for recovered materials.

TECHNOLOGY PROMOTION

Sec. 5004. The Secretary of Commerce is authorized to evaluate the commercial feasibility of resource recovery facilities and to publish the results of such evaluation, and to develop a data base for purposes of assisting persons in choosing such facilities.

NONDISCRIMINATION REQUIREMENT

SEC. 50A. In establishing any policies which may affect the development of new markets for recovered materials and in making any determination concerning whether or not to impose monitoring or other controls on any marketing or transfer of recovered materials, the Secretary of Commerce may consider whether to establish the same or similar policies or impose the same or similar monitoring or other controls on virgin materials.

AUTHORIZATION OF APPROPRIATIONS

SEC. 5006. There are authorized to be appropriated to the Secretary of Commerce \$5,000,000 for each of fiscal years 1980, 1981, and 1982 and \$1,500,000 for each of the fiscal years 1985 through 1988 to carry out the purposes of this subtitle.

Subtitle F—Federal Responsibilities

APPLICATION OF FEDERAL, STATE, AND LOCAL LAW TO FEDERAL FACILITIES

SEC. 6001. Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including and requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief. The President may exempt any solid waste management facility of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriation. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

FEDERAL PROCUREMENT

SEC. 6002. (a) APPLICATION OF SECTION.—Except as provided in subsection (b), a procuring agency shall comply with the requirements set forth in this section and any regulations issued under this section, with respect to any purchase or acquisition of a procurement item where the purchase price of the item exceeds \$10,000 or where the quantity of such items or of functionally equivalent items purchased or acquired in the course of the preceding fiscal year was \$10,000 or more.

(b) PROCUREMENT SUBJECT TO OTHER LAW.—Any procurement, by any procuring agency, which is subject to regulations of the Administrator under section 6004 (as promulgated before the date of enactment of this section under comparable provisions of prior law) shall not be subject to the requirements of this section to the extent that such requirements are inconsistent with such regulations.

(c) REQUIREMENTS.—(1) After the date specified in applicable guidelines prepared pursuant to subsection (e) of this section, each procuring agency which procures any items designated in such guidelines shall procure such items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition (and in the case of paper, the highest percentage of the postconsumer recovered materials referred to in subsection (h)(1) practicable), considering such guidelines. The decision not to procure such items shall be based on a determination that such procurement items—

(A) are not reasonably available within a reasonable period of time;

(B) fail to meet the performance standards set forth in the applicable specifications or fail to meet the reasonable performance standards of the procuring agencies; or

(C) are only available at an unreasonable price. Any determination under subparagraph (B) shall be made on the basis of the guidelines of the Bureau of Standards in any case in which such material is covered by such guidelines.

(2) Agencies that generate heat, mechanical, or electrical energy from fossil fuel in systems that have the technical capability of using energy or fuels derived from solid waste as a primary or supplementary fuel shall use such capability to the maximum extent practicable.

(3) After the date specified in any applicable guidelines prepared pursuant to subsection (e) of this section, contracting officers shall require that vendors:

(A) certify that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by applicable specifications or other contractual requirements and

(B) estimate the percentage of the total material utilized for the performance of the contract which is recovered materials.

(d) SPECIFICATIONS.—All Federal agencies that have the responsibility for drafting or reviewing specifications for procurement items procured by Federal agencies shall—

(1) as expeditiously as possible but in any event no later than [five years after the date of enactment of this Act.] *eighteen months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984*, eliminate from such specifications—

(A) any exclusion of recovered materials and

(B) any requirement that items be manufactured from virgin materials; and

(2) within one year after the date of publication of applicable guidelines under subsection (e), or as otherwise specified in such guidelines, assure that such specifications require the use of recovered materials to the maximum extent possible without jeopardizing the intended end use of the item.

(e) **GUIDELINES.**—The Administrator, after consultation with the Administrator of General Services, the Secretary of Commerce (acting through the Bureau of Standards), and the Public Printer, shall prepare, and from time to time revise, guidelines for the use of procuring agencies in complying with the requirements of this section. Such guidelines shall—

(1) designate those items which are or can be produced with recovered materials and whose procurement by procuring agencies will carry out the objectives of this section, and in the case of paper, provide for maximizing the use of postconsumer recovered materials referred to in subsection (h)(1); and

(2) set forth recommended practices with respect to the procurement of recovered materials and items containing such materials and with respect to certification by vendors of the percentage of recovered materials used; and shall provide information as to the availability, relative price and performance of such materials and items and where appropriate shall recommend the level of recovered material to be contained in the procured product. The Administrator shall prepare final guidelines [for at least three product categories, including paper, by May 1, 1981, and for two additional product categories, including construction materials, by September 30, 1982.] *for paper and for two additional product categories (including tires) by October 1, 1985.* In making the designation under paragraph (1), the Administrator shall consider, but is not limited in his considerations, to—

(A) the availability of such items;

(B) the impact of the procurement of such items by procuring agencies on the volume of solid waste which must be treated, stored or disposed of;

(C) the economic and technological feasibility of producing and using such items; and

(D) other uses for such recovered materials.

(f) **PROCUREMENT OF SERVICES.**—A procuring agency shall, to the maximum extent practicable, manage or arrange for the procurement of solid waste management services in a manner which maximizes energy and resource recovery.

(g) **EXECUTIVE OFFICE.**—The Office of Procurement Policy in the Executive Office of the President, in cooperation with the Administrator, shall implement [the policy expressed in the requirements

of this section. It shall be the responsibility of the Office of Procurement Policy to coordinate this policy with other policies for Federal procurement, in such a way as to maximize the use of recovered resources, and to annually report to the Congress on actions taken by Federal agencies and the progress made in the implementation of such policy, and to, every two years beginning in 1984, report to the Congress on actions taken by Federal agencies and the progress made in the implementation of this section, including agency compliance with subsection (d).

(h) **DEFINITION.**—As used in this section, in the case of paper products, the term "recovered materials" includes—

(1) postconsumer materials such as—

(A) paper, paperboard, and fibrous wastes from retail stores, office buildings, homes, and so forth, after they have passed through their end-use as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; and

(B) all paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste, and

(2) manufacturing, forest residues, and other wastes such as—

(A) dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste, resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(B) finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others;

(C) fibrous byproducts of harvesting, manufacturing, extractive, or wood-cutting processes, flax, straw, linters, bagasse, slash, and other forest residues;

(D) wastes generated by the conversion of goods made from fibrous material (that is, waste rope from cordage manufacture, textile mill waste, and cuttings); and

(E) fibers recovered from waste water which otherwise would enter the waste stream.

(i) **PROCUREMENT PROGRAM.**—(1) Within one year after the date of publication of applicable guidelines under subsection (e), each procuring agency shall develop an affirmative procurement program which will assure that items composed of recovered materials will be purchased to the maximum extent practicable and which is consistent with applicable provisions of Federal procurement law.

(2) Each affirmative procurement program required under this subsection shall, at a minimum, contain—

(A) a recovered materials preference program;

(B) an agency promotion program to promote the preference program adopted under subparagraph (A);

(C) a program for requiring estimates of the total percentage of recovered material utilized in the performance

certification of minimum recovered material content actually utilized where appropriate; and reasonable verification procedures for estimates and certifications; and

(D) annual review and monitoring of the effectiveness of an agency's affirmative procurement program.

In the case of paper, the recovered materials preference program required under subparagraph (A) shall provide for the maximum use of the post consumer recovered materials referred to in subsection (h)(1).

(3) In developing the preference program, the following options shall be considered for adoption:

(A) **Case-by-Case Policy Development:** Subject to the limitations of subsection (c)(1) (A) through (C), a policy of awarding contracts to the vendor offering an item composed of the highest percentage of recovered materials practicable (and in the case of paper, the highest percentage of the postconsumer recovered materials referred to in subsection (h)(1)). Subject to such limitations, agencies may make an award to a vendor offering items with less than the maximum recovered materials content.

(B) **Minimum Content Standards:** Minimum recovered materials content specifications which are set in such a way as to assure that the recovered materials content (and in the case of paper, the content of postconsumer materials referred to in subsection (h)(1)) required is the maximum available without jeopardizing the intended end use of the item, or violating the limitations of subsection (c)(1) (A) through (C).

Procuring agencies shall adopt one of the options set forth in subparagraphs (A) and (B) or a substantially equivalent alternative, for inclusion in the affirmative procurement program.

COOPERATION WITH THE ENVIRONMENTAL PROTECTION AGENCY

SEC. 6003. (a) GENERAL RULE.—All Federal agencies shall assist the Administrator in carrying out his functions under this Act and shall promptly make available all requested information concerning past or present Agency waste management practices and past or present Agency owned, leased, or operated solid or hazardous waste facilities. This information shall be provided in such format as may be determined by the Administrator.

(b) **INFORMATION RELATING TO ENERGY AND MATERIALS CONSERVATION AND RECOVERY.**—The Administrator shall collect, maintain, and disseminate information concerning the market potential of energy and materials recovered from solid waste, including materials obtained through source separation, and information concerning the savings potential of conserving resources contributing to the waste stream. The Administrator shall identify the regions in which the increased substitution of such energy for energy derived from fossil fuels and other sources is most likely to be feasible, and provide information on the technical and economic aspects of developing integrated resource conservation of recovery systems which provide for the recovery of source-separated materials to be recycled or the conservation of resources. The Administrator shall utilize the authorities of subsection (a) in carrying out this subsection.

APPLICABILITY OF SOLID WASTE DISPOSAL GUIDELINE TO EXECUTIVE AGENCIES

SEC. 6004. (a) COMPLIANCE.—(1) If—

(A) an Executive agency (as defined in section 105 of title 5, United States Code) or any unit of the legislative branch of the Federal Government has jurisdiction over any real property or facility the operation or administration of which involves such agency in solid waste management activities, or

(B) such an agency enters into a contract with any person for the operation by such person of any Federal property or facility, and the performance of such contract involves such person in solid waste management activities.

then such agency shall insure compliance with the guidelines recommended under section 1008 and the purposes of this Act in the operation or administration of such property or facility, or the performance of such contract, as the case may be,

(2) Each Executive agency or any unit of the legislative branch of the Federal Government which conducts any activity—

(A) which generates solid waste, and

(B) which, if conducted by a person other than such agency, would require a permit or license from such agency in order to dispose of such solid waste, shall insure compliance with such guidelines and the purposes of this Act in conducting such activity.

(3) Each Executive agency which permits the use of Federal property for purposes of disposal of solid waste shall insure compliance with such guidelines and the purposes of this Act in the disposal of such waste.

(4) The President or the Committee on House Administration of the House of Representatives and the Committee on Rules and Administration of the Senate with regard to any unit of the legislative branch of the Federal Government, shall prescribe regulations to carry out this subsection.

(b) **LICENSES AND PERMITS.**—Each Executive agency which issues any license or permit for disposal of solid waste shall, prior to the issuance of such license or permit, consult with the Administrator to insure compliance with guidelines recommended under section 1008 and the purposes of this Act.

Subtitle G—Miscellaneous Provisions

EMPLOYEE PROTECTION

SEC. 7001. (a) GENERAL.—No person shall fire, or in any other way discriminate against, or cause to be fired or discriminated against, any employee or any authorized representative of employees by reason of the fact that such employee or representative has filed, instituted, or caused to be filed or instituted any proceeding under this Act or under any applicable implementation plan, or has testified or is about to testify in any proceeding resulting from the administration or enforcement of the provisions of this Act or of any applicable implementation plan.

(b) **REMEDY.**—Any employee or a representative of employees who believes that he has been fired or otherwise discriminated

against by any person in violation of subsection (a) of this section may, within thirty days after such alleged violation occurs, apply to the Secretary of Labor for a review of such firing or alleged discrimination. A copy of the application shall be sent to such person who shall be the respondent. Upon receipt of such application, the Secretary of Labor shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of any party to such review to enable the parties to present information relating to such alleged violation. The parties shall be given written notice of the time and place of the hearing at least five days prior to the hearing. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Secretary of Labor shall make findings of fact. If he finds that such violation did occur, he shall issue a decision, incorporating an order therein and his findings, requiring the party committing such violation to take such affirmative action to abate the violation as the Secretary of Labor deems appropriate, including, but not limited to, the rehiring or reinstatement of the employee or representative of employees to his former position with compensation. If he finds that there was no such violation, he shall issue an order denying the application. Such order issued by the Secretary of Labor under this subparagraph shall be subject to judicial review in the same manner as orders and decisions of the Administrator or subject to judicial review under this Act.

(c) **COSTS.**—Whenever an order is issued under this section to abate such violation, at the request of the applicant, a sum equal to the aggregate amount of all costs and expenses (including the attorney's fees) as determined by the Secretary of Labor, to have been reasonably incurred by the applicant for, or in connection with, the institution and prosecution of such proceedings, shall be assessed against the person committing such violation.

(d) **EXCEPTION.**—This section shall have no application to any employee who, acting without direction from his employer (or his agent) deliberately violates any requirement of this Act.

(e) **EMPLOYMENT SHIFTS AND LOSS.**—The Administrator shall conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of the provisions of this Act and applicable implementation plans, including, where appropriate, investigating threatened plant closures or reductions in employment allegedly resulting from such administration or enforcement. Any employee who is discharged, or laid off, threatened with discharge or layoff, or otherwise discriminated against by any person because of the alleged results of such administration or enforcement, or any representative of such employee, may request the Administrator to conduct a full investigation of the matter. The Administrator shall thereupon investigate the matter and, at the request of any party, shall hold public hearings on not less than five days' notice, and shall at such hearings require the parties, including the employer involved, to present information relating to the actual or potential effect of such administration or enforcement on employment, and on any alleged discharge, layoff, or other discrimination and the detailed reasons or justification therefore. Any such hearing shall be of record and shall be

subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Administrator shall make findings of fact as to the effect of such administration or enforcement on employment and on the alleged discharge, layoff, or discrimination and shall make such recommendations as he deems appropriate. Such report findings, and recommendations shall be available to the public. Nothing in this subsection shall be construed to require or authorize the Administrator or any State to modify or withdraw any standard, limitation, or any any other requirement of this Act or any applicable implementation plan.

(f) **OCCUPATIONAL SAFETY AND HEALTH.**—In order to assist the Secretary of Labor and the Director of the National Institute for Occupational Safety and Health in carrying out their duties under the Occupational Safety and Health Act of 1970, the Administrator shall—

(1) provide the following information, as such information becomes available, to the Secretary and the Director:

(A) the identity of any hazardous waste generation, treatment, storage, disposal facility or site where cleanup is planned or underway;

(B) information identifying the hazards to which persons working at a hazardous waste generation, treatment, storage, disposal facility or site or otherwise handling hazardous waste may be exposed, the nature and extent of the exposure, and methods to protect workers from such hazards; and

(C) incidents of worker injury or harm at a hazardous waste generation, treatment, storage or disposal facility or site; and

(2) notify the Secretary and the Director of the Administrator's receipt of notifications under section 3010 or reports under sections 3002, 3003, and 3004 of this title and make such notifications and reports available to the Secretary and the Director.

CITIZEN SUITS

SEC. 7002. (a) **IN GENERAL.**—Except as provided in subsection (b) or (c) of this section, any person may commence a civil action on his own behalf—

(1)(A) against any person (including (a) the United States, and (b) any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to this Act; or

(B) against any person, including the United States and any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution, and including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may

preclude an imminent and substantial endangerment to health or the environment; or

(2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary with the Administrator.

Any action under paragraph (a)(1) of this subsection shall be brought in the district court for the district in which the alleged violation occurred or the alleged endangerment may occur. Any action brought under paragraph (a)(2) of this subsection may be brought in the district court for the district in which the alleged violation occurred or in the District Court of the District of Columbia. The district court shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, [to enforce such regulation or order, or to order the administrator to perform such act or duty as the case may be] to enforce the permit, standard, regulation, condition, requirement, prohibition, or order, referred to in paragraph (1)(A), to restrain any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in paragraph (1)(B), to order such person to take such other action as may be necessary, or both, or to order the Administrator to perform the act or duty referred to in paragraph (2), as the case may be, and to apply any appropriate civil penalties under section 3008 (a) and (g).

[(b) ACTIONS PROHIBITED.—No action may be commenced under paragraph (a)(1) of this section—

[(1) prior to sixty days after the plaintiff has given notice of the violation (A) to the Administrator; (B) to the State in which the alleged violation occurs; and (C) to any alleged violator of such permit, standard, regulation, condition, requirement, or order; or

[(2) if the Administrator or State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance with such permit, standard, regulation, condition, requirement, or order: Provided, however, That in any such action in a court of the United States, any person may intervene as a matter of right.]

(b) ACTIONS PROHIBITED.—(1) No action may be commenced under subsection (a)(1)(A) of this section—

(A) prior to 60 days after the plaintiff has given notice of the violation to—

(i) the Administrator;

(ii) the State in which the alleged violation occurs; and

(iii) to any alleged violator of such permit, standard, regulation, condition, requirement, prohibition, or order,

except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subtitle C of this Act; or

(B) if the Administrator or State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance with such permit, standard, regulation, condition, requirement, prohibition, or order.

in any action under subsection (a)(1)(A) in a court of the United States, any person may intervene as a matter of right.

(2)(A) No action may be commenced under subsection (1)(B) of this section prior to ninety days after the plaintiff has given notice of the endangerment to—

(i) the Administrator;

(ii) the State in which the alleged endangerment may occur;

(iii) any person alleged to have contributed or to be contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in subsection (a)(1)(B),

except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subtitle C of this Act.

(B) No action may be commenced under subsection (a)(1)(B) of this section if the Administrator, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

(i) has commenced and is diligently prosecuting an action under section 7003 of this Act or under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980;

(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980;

(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and is diligently proceeding with a remedial action under that Act; or

(iv) has obtained a court order (including a consent decree) or issued an administrative order under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or section 7003 of this Act pursuant to which a responsible party is diligently conducting a removal action, Remedial Investigation and Feasibility Study (RIFS), or proceeding with a remedial action.

In the case of an administrative order referred to in clause (iv), actions under subsection (a)(1)(B) are prohibited only as to the scope and duration of the administrative order referred to in clause (iv).

(C) No action may be commenced under subsection (a)(1)(B) of this section if the State, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

(i) has commenced and is diligently prosecuting an action under subsection (a)(1)(B);

(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980; or

(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and is diligently proceeding with a remedial action under that Act.

IMMINENT HAZARD

(C) No action may be commenced under subsection (a)(1)(B) by any person (other than a State or local government) with respect to the siting of a hazardous waste treatment, storage, or a disposal facility, nor to restrain or enjoin the issuance of a permit for such facility.

(E) In any action under subsection (a)(1)(B) in a court of the United States, any person may intervene as a matter of right when the applicant claims an interest relating to the subject of the action and he is so situated that the disposition of the action may, as a practical matter, impair or impede his ability to protect that interest, unless the Administrator or the State shows that the applicant's interest is adequately represented by existing parties.

(F) Whenever any action is brought under subsection (a)(1)(B) in a court of the United States, the plaintiff shall serve a copy of the complaint on the Attorney General of the United States and with the Administrator.

(C) NOTICE.—No action may be commenced under paragraph (a)(2) of this section prior to sixty days after the plaintiff has given notice to the Administrator that he will commence such action, except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subtitle C of this Act. Notice under this subsection shall be given in such manner as the Administrator shall prescribe by regulation. Any action respecting a violation under this Act may be brought under this section only in the judicial district in which such alleged violation occurs.

(d) INTERVENTION.—In any action under this section the Administrator, if not a party, may intervene as a matter of right.

(e) COSTS.—The court, in issuing any final order in any action brought pursuant to this section or section 7006, may award costs of litigation (including reasonable attorney and expert witness fees) [to any party,] to the prevailing or substantially prevailing party whenever the court determines such an award is appropriate. The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.

(f) OTHER RIGHTS PRESERVED.—Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any standard or requirement relating to the management of solid waste or hazardous waste, or to seek any other relief (including relief against the Administrator or a State agency).

(g) TRANSPORTERS.—A transporter shall not be deemed to have contributed or to be contributing to the handling, storage, treatment, or disposal, referred to in subsection (a)(1)(B) taking place after such solid waste or hazardous waste has left the possession or control of such transporter, if the transportation of such waste was under a sole contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste.

SEC. 7003. (a) AUTHORITY OF ADMINISTRATOR.—Notwithstanding any other provision of this Act, upon receipt of evidence that the past or present handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may bring suit on behalf of the United States in the appropriate district court [to immediately restrain any person] against any person (including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility) who has contributed or who is contributing to such handling, storage, treatment, transportation, or disposal [to stop] to restrain such person from such handling, storage, treatment, transportation, or disposal [or to take such other action as may be necessary], to order such person to take such other action as may be necessary, or both. A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal taking place after such solid waste or hazardous waste has left the possession or control of such transporter if the transportation of such waste was under a sole contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste. The Administrator shall provide notice to the affected State of any such suit. The Administrator may also, after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and the environment.

(b) VIOLATIONS.—Any person who willfully violates, or fails or refuses to comply with, any order of the Administrator under subsection (a) may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than \$5,000 for each day in which such violation occurs or such failure to comply continues.

(c) IMMEDIATE NOTICE.—Upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment to human health or the environment, the Administrator shall provide immediate notice to the appropriate local government agencies. In addition, the Administrator shall require notice of such endangerment to be promptly posted at the site where the waste is located.

(d) PUBLIC PARTICIPATION IN SETTLEMENTS.—Whenever the United States or the Administrator proposes to covenant not to sue or to forbear from suit or to settle any claim arising under this section, notice, and opportunity for a public meeting in the affected area, and a reasonable opportunity to comment on the proposed settlement prior to its final entry shall be afforded to the public. The decision of the United States or the Administrator to enter into or not to enter into such Consent Decree, covenant or agreement shall not constitute a final agency action subject to judicial review under this Act or the Administrative Procedure Act.

PETITION FOR REGULATIONS; PUBLIC PARTICIPATION

SEC. 7004. (a) PETITION.—Any person may petition the Administrator for the promulgation, amendment, or repeal of any regulation under this Act. Within a reasonable time following receipt of such petition, the Administrator shall take action with respect to such petition and shall publish notice of such action in the Federal Register, together with the reasons therefor.

(b) PUBLIC PARTICIPATION.—(1) Public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such process.

(2) Before the issuing of a permit to any person with any respect to any facility for treatment, storage, or disposal of hazardous wastes under section 3005, the Administrator shall—

(A) cause to be published in major local newspaper of general circulation and broadcast over local radio stations notice of the agency's intention to issue such permit, and

(B) transmit in writing notice of the agency's intention to issue such permit to each unit of local government having jurisdiction over the area in which such facility is proposed to be located and to each State agency having any authority under State law with respect to the construction or operation of such facility.

If within 45 days the Administrator receives written notice of opposition to the agency's intention to issue such permit and a request for a hearing, or if the Administrator determines on his own initiative, he shall hold an informal public hearing (including an opportunity for presentation of written and oral views) on whether he should issue a permit for the proposed facility. Whenever possible the Administrator shall schedule such hearing at a location convenient to the nearest population center to such proposed facility and give notice in the aforementioned manner of the date, time, and subject matter of such hearing. No State program which provides for the issuance of permits referred to in this paragraph may be authorized by the Administrator under section 3006 unless such program provides for the notice and hearing required by the paragraph.

SEPARABILITY

SEC. 7005. If any provision of this Act, or the application of any provision of this Act to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances, and the remainder of this Act, shall not be affected thereby.

JUDICIAL REVIEW

SEC. 7006. (a) REVIEW OF FINAL REGULATIONS AND CERTAIN PETITIONS.—Any judicial review of final regulations promulgated pursuant to this Act and the Administrator's denial of any petition for the promulgation, amendment, or repeal of any regulation under

this Act shall be in accordance with sections 701 through 706 of title 5 of the United States Code, except that—

(1) a petition for review of action of the Administrator in promulgating any regulation, or requirement under this Act or denying any petition for the promulgation, amendment, or repeal of any regulation under this Act may be filed only in the United States Court of Appeals for the District of Columbia, and such petition shall be filed within ninety days from the date of such promulgation or denial, or after such date of such petition for review is based solely on grounds arising after such ninetieth day; action of the Administrator with respect to which review could have been obtained under this subsection shall not be subject to judicial review in civil or criminal proceedings for enforcement; and

(2) in any judicial proceeding brought under this section in which review is sought of a determination under this Act required to be made on the record after notice and opportunity for hearing, if a party seeking review under this act applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that the information is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, and to be adduced upon the hearing in such manner and upon such terms and conditions as the court may deem proper; the Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken, and he shall file with the court such modified or new findings and his recommendation, if any, for the modification or setting aside of his original order, with the return of such additional evidence.

(b) REVIEW OF CERTAIN ACTIONS UNDER SECTION 3005 AND 3006.—Review of the Administrator's action (1) in issuing, denying, modifying, or revoking any permit under section 3005 (or in modifying or revoking any permit which is deemed to have been issued under section 3012(d)(1)), or (2) in granting, denying, or withdrawing authorization or interim authorization under section 3006, may be had by any interested person in the Circuit Court of Appeals of the United States for the Federal judicial district in which such person resides or transacts such business upon application by such person. Action of the Administrator with respect to which review could have been obtained under this subsection shall not be subject to judicial review in civil or criminal proceedings for enforcement. Any such application shall be made within ninety days from the date of such issuance, denial, modification, revocations, grant, or withdrawal, or after such date only if such application is based solely on grounds which arose after such ninetieth day. Such review shall be in accordance with sections 701 through 706 of title 5 of the United States Code.

GRANTS OR CONTRACTS FOR TRAINING PROJECTS

SEC. 7007. (a) **GENERAL AUTHORITY.**—The Administrator is authorized to make grants to, and contracts with any eligible organization. For purposes of this section the term "eligible organization" means a State or interstate agency, a municipality, educational institution, and any other organization which is capable of effectively carrying out a project which may be funded by grant under subsection (b) of this section.

(b) **PURPOSES.**—(1) Subject to the provisions of paragraph (2), grants or contracts may be made to pay all or a part of the costs, as may be determined by the Administrator, of a project operated or to be operated by an eligible organization, which is designed—

(A) to develop, expand, or carry out a program (which may combine training, education, and employment) for training persons for occupations involving the management, supervision, design, operation, or maintenance of solid waste management and resource recovery equipment and facilities; or

(B) to train instructors and supervisory personnel to train or supervise persons in occupations involving the design, operation, and maintenance of solid waste management and resource recovery equipment and facilities.

(2) A grant or contract authorized by paragraph (1) of this subsection may be made only upon application to the Administrator at such time or times and contains such information as he may prescribe, except that no such application shall be approved unless it provides for the same procedures and reports (and access to such reports and to other records) as required by section 207(b) (4) and (5) (as in effect before the date of the enactment of Resource Conservation and Recovery Act of 1976) with respect to applications made under such section (as in effect before the date of the enactment of Resource Conservation and Recovery Act of 1976).

(c) **STUDY.**—The Administrator shall make a complete investigation and study to determine—

(1) the need for additional trained State and local personnel to carry out plans assisted under this Act and other solid waste and resource recovery programs;

(2) means of using existing training programs to train such personnel; and

(3) the extent and nature of obstacles to employment and occupational advancement in the solid waste management and resource recovery field which may limit either available manpower or the advancement of personnel in such field.

He shall report the results of such investigation and study, including his recommendations to the President and the Congress.

PAYMENTS

SEC. 7008. (a) **GENERAL RULE.**—Payments of grants under this Act may be made (after necessary adjustment on account of previously made underpayments or overpayments) in advance or by way of reimbursement, and in such installments and on such conditions as the Administrator may determine.

(b) **PROHIBITION.**—No grant may be made under this Act to any private profitmaking organization.

LABOR STANDARDS

SEC. 7009. No grant for a project of construction under this Act shall be made unless the Administrator finds that the application contains or is supported by reasonable assurance that all laborers and mechanics employed by contractors or subcontractors on projects of the type covered by the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), will be paid wages at rates not less than those prevailing on similar work in the locality as determined by the Secretary of Labor in accordance with that Act; and the Secretary of Labor shall have with respect to the labor standards specified in this section the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 5 U.S.C. 1332-5) and section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c).

LAW ENFORCEMENT AUTHORITY

SEC. [7012.] 7010.¹⁰ The Attorney General of the United States shall, at the request of the Administrator and on the basis of a showing of need, deputize qualified employees of the Environmental Protection Agency to serve as special deputy United States marshals in criminal investigations with respect to violations of the criminal provisions of this Act.

Subtitle H—Research, Development, Demonstration, and Information

RESEARCH, DEMONSTRATIONS, TRAINING, AND OTHER ACTIVITIES

SEC. 8001. (a) **GENERAL AUTHORITY.**—The Administrator, alone or after consultation with the Administrator of the Federal Energy Administration, the Administrator of the Energy Research and Development Administration, or the Chairman of the Federal Power Commission, shall conduct, and encourage, cooperate with, and render financial and other assistance to appropriate public (whether Federal, State, interstate, or local) authorities, agencies, and institutions, private agencies and institutions, and individuals in the conduct of, and promote the coordination of, research, investigations, experiments, training, demonstrations, surveys, public education programs, and studies relating to—

(1) any adverse health and welfare effects of the release into the environment of material present in solid waste, and methods to eliminate such effects;

(2) the operation and financing of solid waste management programs;

(3) the planning, implementation, and operation of resource recovery and resource conservation systems and hazardous waste management systems, including the marketing or recovered resources;

¹⁰ P.L. 94-339, Safe Drinking Water Act Amendments.

(4) the reduction of usable forms of recovered resources, including sludge, from solid waste;

(5) the reduction of the amount of such waste and unsalvageable waste materials;

(6) the development and application of new and improved methods of collecting and disposing of solid waste and processing and recovering materials and energy from solid wastes;

(7) the identification of solid waste components and potential materials and energy recoverable from such waste components;

(8) small scale and low technology solid waste management systems, including but not limited to, resource recovery source separation systems;

(9) methods to improve the performance characteristics of resources recovered from solid waste and the relationship of such performance characteristics to available and potentially available markets for such resources;

(10) improvements in land disposal practices for solid waste (including sludge) which may reduce the adverse environmental effects of such disposal and other aspects of solid waste disposal on land, including means for reducing the harmful environmental effects of earlier and existing landfills, means for restoring areas damaged by such earlier or existing landfills, means for rendering landfills safe for purposes of construction and other uses, and techniques of recovering materials and energy from landfills;

(11) methods for the sound disposal of, or recovery of resources, including energy, from, sludge (including sludge from pollution control and treatment facilities, coal slurry pipelines, and other sources);

(12) methods of hazardous waste management, including methods of rendering such waste environmentally safe; and

(13) any adverse effects on air quality (particularly with regard to the emission of heavy metals) which result from solid waste which is burned (either alone or in conjunction with other substances) for purposes of treatment, disposal, or energy recovery.

(b) **MANAGEMENT PROGRAM.**—(1)(A) In carrying out his functions pursuant to this Act, and any other Federal legislation respecting solid waste or discarded material research, development, and demonstrations, the Administrator shall establish a management program or system to insure the coordination of all such activities and to facilitate and accelerate the process of development of sound new technology (or other discoveries) from the research phase, through development, and into the demonstration phase.

(B) The Administrator shall (i) assist, on the basis of any research projects which are developed with assistance under this Act or without Federal assistance, the construction of pilot plant facilities for the purpose of investigating or testing the technological feasibility of any promising new fuel, energy, or resource recovery or resource conservation method or technology; and (ii) demonstrate each such method and technology that appears justified by an evaluation at such pilot plant stage or at a pilot plant stage developed without Federal assistance. Each such demonstration shall incorporate new or innovative technical advances or shall apply

such advances to different circumstances and conditions, for the purpose of evaluating design concepts or to test the performance, efficiency, and economic feasibility of a particular method or technology under actual operating conditions. Each such demonstration shall be so planned and designed that, if successful, it can be expanded or utilized directly as a full-scale operational fuel, energy, or resource recovery or resource conservation facility.

(2) Any energy-related research, development, or demonstration project for the conversion including bioconversion, of solid waste carried out by the Environmental Protection Agency or by the Energy Research and Development Administration pursuant to this or any other Act shall be administered in accordance with the May 7, 1976, Interagency Agreement between the Environmental Protection and the Energy Research and Development Administration on the Development of Energy from Solid Wastes and specifically, that in accordance with this agreement, (A) for those energy-related projects of mutual interest, planning will be conducted jointly by the Environmental Protection Agency and the Energy Research and Development Administration, following which project responsibility will be assigned to one agency; (B) energy-related portions of projects for recovery of synthetic fuels or other forms of energy from solid waste shall be the responsibility of the Energy Research and Development Administration; (C) the Environmental Protection Agency shall retain responsibility for the environmental, economic, and institutional aspects of solid waste projects and for assurance that such projects are consistent with any applicable suggested guidelines published pursuant to section 1008, and any applicable State or regional solid waste management plan; and (D) any activities undertaken under provisions of section 8002 and 8003 as related to energy; as related to energy or synthetic fuels recovery from waste; or as related to energy conservation shall be accomplished through coordination and consultation with the Energy Research and Development Administration.

(c) **AUTHORIZATIONS.**—(1) In carrying out subsection (a) of this section respecting solid waste research, studies, development, and demonstration, except as otherwise specifically provided in section 8004(d), the Administrator may make grants to or enter into contracts (including contracts for construction) with, public agencies and authorities or private persons.

(2) Contracts for research, development, or demonstrations or for both (including contracts for construction) shall be made in accordance with and subject to the limitations provided with respect to research contracts of the military departments in title 10, United States Code, section 2353, except that the determination, approval, and certification required thereby shall be made by the Administrator.

(3) Any invention made or conceived in the course of, or under, any contract under this Act shall be subject to section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 to the same extent and in the same manner as inventions made or conceived in the course of contracts under such Act, except that in applying such section, the Environmental Protection Agency shall be substituted for the Energy Research and Development Administration.

tration and the words "solid waste" shall be substituted for the word "energy" where appropriate.

(4) For carrying out the purpose of this Act the Administrator may detail personnel of the Environmental Protection Agency to agencies eligible for assistance under this section.

SPECIAL STUDIES; PLANS FOR RESEARCH, DEVELOPMENT, AND DEMONSTRATIONS

SEC. 8002. (a) GLASS AND PLASTIC.—The Administrator shall undertake a study and publish a report on resource recovery from glass and plastic waste, including a scientific, technological, and economic investigation of potential solutions to implement such recovery.

(b) COMPOSITION OF WASTE STREAM.—The Administrator shall undertake a systematic study of the composition of the solid waste stream and of anticipated future changes in the composition of such stream and shall publish a report containing the results of such study and quantitatively evaluating the potential utility of such components.

(c) PRIORITIES STUDY.—For purposes of determining priorities for research on recovery of materials and energy from solid waste and developing materials and energy recovery research, development, and demonstration strategies, the Administrator shall review, and make a study of, the various existing and promising techniques of energy recovery from solid waste (including, but not limited to, waterwall furnace incinerators, dry shredded fuel systems, pyrolysis, densified refuse-derived fuel systems, anaerobic digestion, and fuel and feedstock preparation systems). In carrying out such study the Administrator shall investigate with respect to each such technique—

(1) the degree of public need for the potential results of such research, development, or demonstration,

(2) the potential for research, development, and demonstration without Federal action, including the degree of restraint on such potential posed by the risks involved, and

(3) the magnitude of effort and period of time necessary to develop the technology to the point where Federal assistance can be ended.

(d) SMALL-SCALE AND LOW TECHNOLOGY STUDY.—The Administrator shall undertake a comprehensive study and analysis of, and publish a report on, systems of small-scale and low technology solid waste management, including household resource recovery and resource recovery systems which have special application to multiple dwelling units and high density housing and office complexes. Such study and analysis shall include an investigation of the degree to which such systems could contribute to energy conservation.

(e) FRONT-END SOURCE SEPARATION.—The Administrator shall undertake research and studies concerning the compatibility of front-end source separation systems with a high technology resource recovery systems and shall publish a report containing the results of such research and studies.

(f) MINING WASTE.—The Administrator, in consultation with the Secretary of the Interior, shall conduct a detailed and comprehensive

study on the adverse effects of solid wastes from active and abandoned surface and underground mines on the environment, including, but not limited to, the effects of such wastes on humans, water, air, health, welfare, and natural resources, and on the adequacy of means and measures currently employed by the mining industry, government agencies, and others to dispose of and utilize such solid wastes and to prevent or substantially mitigate such adverse effects. Not later than thirty-six months after the date of the enactment of the Solid Waste Disposal Act Amendments of 1980 the Administrator shall publish a report of such study and shall include appropriate findings and recommendations for Federal and non-Federal actions concerning such effects. Such report shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives. In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal agencies concerning such wastes with a view toward avoiding duplication of effort and the need to expedite such study. The Administrator shall publish a report of such study and shall include appropriate findings and recommendations for Federal and non-Federal actions concerning such effects.

(g) SLUDGE.—The Administrator shall undertake a comprehensive study and publish a report on sludge. Such study shall include an analysis of—

(1) what types of solid waste (including but not limited to sewage and pollution treatment residues and other residues from industrial operations such as extraction of oil from shale, liquefaction and gasification of coal and coal slurry pipeline operations) shall be classified as sludge;

(2) the effects of air and water pollution legislation on the creation of large volumes of sludge;

(3) the amounts of sludge originating in each State and in each industry producing sludge;

(4) methods of disposal of such sludge, including the cost, efficiency, and effectiveness of such methods;

(5) alternative methods for the use of sludge, including agricultural applications of sludge and energy recovery from sludge; and

(6) methods to reclaim areas which have been used for the disposal of sludge or which have been damaged by sludge.

(h) TIRES.—The Administrator shall undertake a study and publish a report respecting discarded motor vehicle tires which shall include an analysis of the problems involved in the collection, recovery of resources including energy, and use of such tires.

(i) RESOURCE RECOVERY FACILITIES.—The Administrator shall conduct research and report on the economics of, and impediments to, the effective functioning of resource recovery facilities.

(j) RESOURCE CONSERVATION COMMITTEE.—(1) The Administrator shall serve as Chairman of a Committee composed of himself, the Secretary of Commerce, the Secretary of Labor, the Chairman of the Council on Environmental Quality, the Secretary of Treasury, the Secretary of the Interior, the Secretary of Energy, the Chairman of the Council of Economic Advisors, and a

the Office of Management and Budget, which shall conduct a full and complete investigation and study of all aspects of the economic, social, and environmental consequences of resource conservation with respect to—

(A) the appropriateness of recommended incentives and disincentives to foster resource conservation;

(B) the effect of existing public policies (including subsidies and economic incentives and disincentives, percentage depletion allowances, capital gains treatment and other tax incentives and disincentives) upon resource conservation, and the likely effect of the modification or elimination of such incentives and disincentives upon resource conservation;

(C) the appropriateness and feasibility of restricting the manufacture or use of categories of consumer products as a resource conservation strategy;

(D) the appropriateness and feasibility of employing as a resource conservation strategy the imposition of solid waste management charges on consumer products, which charges would reflect the costs of solid waste management services, litter pickup, the value of recoverable components of such product, final disposal, and any social value associated with the nonrecycling or uncontrolled disposal of such product; and

(E) the need for further research, development, and demonstration in the area of resource conservation.

(2) The study required in paragraph (1)(D) may include pilot scale projects, and shall consider and evaluate alternative strategies with respect to—

(A) the product categories on which such charges would be imposed;

(B) the appropriate state in the production of such consumer product at which to levy such charge;

(C) appropriate criteria for establishing such charges for each consumer product category;

(D) methods for the adjustment of such charges to reflect actions such as recycling which would reduce the overall quantities of solid waste requiring disposal; and

(E) procedures for amending, modifying, or revising such charges to reflect changing conditions.

(3) The design for the study required in paragraph (1)(D) of this subsection shall include timetables for the completion of the study. A preliminary report putting forth the study design shall be sent to the President and the Congress within six months following enactment of this section and following reports shall be sent six months thereafter. Each recommendation resulting from the study shall include at least two alternatives to the proposed recommendation.

(4) The results of such investigation and study, including recommendations, shall be reported to the President and the Congress not later than two years after enactment of this subsection.

(5) There are authorized to be appropriated not to exceed \$2,000,000 to carry out this subsection.

(k) **AIRPORT LANDFILLS.**—The Administrator shall undertake a comprehensive study and analysis of and publish a report on systems to alleviate the hazards to aviation from birds congregating and feeding on landfills in the vicinity of airports.

(l) **COMPLETION OF RESEARCH AND STUDIES.**—The Administrator shall complete the research and studies, and submit the reports, required under subsections (b), (c), (d), (e), (f), (g), and (h) not later than October 1, 1978. The Administrator shall complete the research and studies, and submit the reports, required under subsections (a), (h), and (i), not later than October 1, 1979. Upon completion, each study specified in subsections (a) through (k) of this section, the Administrator shall prepare a plan for research, development, and demonstration respecting the findings of the study and shall submit any legislative recommendations resulting from such study to appropriate committees of Congress.

(m) **DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTES ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT, OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.**—(1) The Administrator shall conduct a detailed and comprehensive study and submit a report on the adverse effects, if any, of drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy on human health and the environment, including, but not limited to, the effects of such wastes on humans, water, air, health, welfare, and natural resources and on the adequacy of means and measures currently employed by the oil and gas and geothermal drilling and production industry. Government agencies, and others to dispose of and utilize such wastes and to prevent or substantially mitigate such adverse effects. Such study shall include an analysis of—

(A) the sources and volume of discarded material generated per year from such wastes;

(B) present disposal practices;

(C) potential danger to human health and the environment from the surface runoff or leachate;

(D) documented cases which prove or have caused danger to human health and the environment from surface runoff or leachate;

(E) alternatives to current disposal methods;

(F) the cost of such alternatives; and

(G) the impact of those alternatives on the exploration for, and development and production of, crude oil and natural gas or geothermal energy.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal agencies concerning such wastes with a view toward avoiding duplication of effort and the need to expedite such study. The Administrator shall publish a report of such study and shall include appropriate findings and recommendations for Federal and non-Federal actions concerning such effects.

(2) The Administrator shall complete the research and study and submit the report required under paragraph (1) not later than twenty-four months from the date of enactment of the Solid Waste Disposal Act Amendments of 1980. Upon completion of the study, the Administrator shall prepare a summary of the findings of the study, a plan for research, development, and demonstration respecting the findings of the study, and shall submit the findings and the study, along with any recommendations resulting from

such study, to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

(3) There are authorized to be appropriated not to exceed \$1,000,000 to carry out the provisions of this subsection.

(n) **MATERIALS GENERATED FROM THE COMBUSTION OF COAL AND OTHER FOSSIL FUELS.**—The Administrator shall conduct a detailed and comprehensive study and submit a report on the adverse effects on human health and the environment, if any, of the disposal and utilization of fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, and other byproduct materials generated primarily from the combustion of coal or other fossil fuels. Such study shall include an analysis of—

- (1) the source and volumes of such material generated per year;
- (2) present disposal and utilization practices;
- (3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials;
- (4) documented cases in which danger to human health or the environment from surface runoff or leachate has been proved;
- (5) alternatives to current disposal methods;
- (6) the costs of such alternatives;
- (7) the impact of those alternatives on the use of coal and other natural resources; and
- (8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such material and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report on such study, which shall include appropriate findings, not later than twenty-four months after the enactment of the Solid Waste Disposal Act Amendments of 1980. Such study and findings shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

(o) **CEMENT KILN DUST WASTE.**—The Administrator shall conduct a detailed and comprehensive study of the adverse effects on human health and the environment, if any, of the disposal of cement kiln dust waste. Such study shall include an analysis of—

- (1) the source and volumes of such materials generated per year;
- (2) present disposal practices;
- (3) potential danger, if any, to human health and the environment from the disposal of such materials;
- (4) documented cases in which danger to human health or the environment has been proved;
- (5) alternatives to current disposal methods;
- (6) the costs of such alternatives;
- (7) the impact of those alternatives on the use of natural resources; and
- (8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such waste or materials and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report of such study, which shall include appropriate findings, not later than thirty-six months after the date of enactment of the Solid Waste Disposal Act Amendments of 1980. Such report shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

(p) **MATERIALS GENERATED FROM THE EXTRACTION, BENEFICIATION, AND PROCESSING OF ORES AND MINERALS, INCLUDING PHOSPHATE ROCK AND OVERBURDEN FROM URANIUM MINING.**—The Administrator shall conduct a detailed and comprehensive study on the adverse effects on human health and the environment, if any, of the disposal and utilization of solid waste from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from uranium mining. Such study shall be conducted in conjunction with the study of mining wastes required by subsection (f) of this section and shall include an analysis of—

- (1) the source and volumes of such materials generated per year;
- (2) present disposal and utilization practices;
- (3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials;
- (4) documented cases in which danger to human health or the environment has been proved;
- (5) alternatives to current disposal methods;
- (6) the costs of such alternatives;
- (7) the impact of those alternatives on the use of phosphate rock and uranium ore, and other natural resources; and
- (8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such waste or materials and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report of such study, which shall include appropriate findings, in conjunction with the publication of the report of the study of mining wastes required to be conducted under subsection (f) of this section. Such report and findings shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

(q) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated not to exceed \$8,000,000 for the fiscal years 1978 and 1979 to carry out this section other than subsection (j).

(r) **MINIMIZATION OF HAZARDOUS WASTE.**—The Administrator shall compile, and not later than October 1, 1986, submit to the Congress, a report on the feasibility and desirability of establishing standards of performance or of taking other additional actions

under this Act to require the generators of hazardous waste to reduce the volume or quantity and toxicity of the hazardous waste they generate, and of establishing with respect to hazardous wastes required management practices or other requirements to assure such wastes are managed in ways that minimize present and future risks to human health and the environment. Such report shall include any recommendations for legislative changes which the Administrator determines are feasible and desirable to implement the national policy established by section 1003.

COORDINATION, COLLECTION, AND DISSEMINATION OF INFORMATION

SEC. 8003. (a) INFORMATION.—The Administrator shall develop, collect, evaluate, and coordinate information on—

- (1) methods and costs of the collection of solid waste;
- (2) solid waste management practices, including data on the different management methods and the cost, operation, and maintenance of such methods;
- (3) the amounts and percentages of resources (including energy) that can be recovered from solid waste by use of various solid waste management practices and various technologies;
- (4) methods available to reduce the amount of solid waste that is generated;
- (5) existing and developing technologies for the recovery of energy or materials from solid waste and the costs, reliability, and the risks associated with such technologies;
- (6) hazardous solid waste, including incidents of damage resulting from the disposal of hazardous solid wastes; inherently and potentially hazardous wastes; methods of neutralizing or properly disposing of hazardous solid wastes; facilities that properly dispose of hazardous wastes;
- (7) methods of financing resources recovery facilities or, sanitary landfills, or hazardous solid waste treatment facilities, whichever is appropriate for the entity developing such facility or landfill (taking into account the amount of solid waste reasonably expected to be available to such entity);
- (8) the availability of markets for the purchase of resources, either materials or energy, recovery from solid waste; and
- (9) research and development projects respecting solid waste management.

(b) LIBRARY.—(1) The Administrator shall establish and maintain a central reference library for (A) the materials collected pursuant to subsection (a) of this section and (B) the actual performance and cost effectiveness records and other data and information with respect to—

- (i) the various methods of energy and resource recovery from solid waste,
- (ii) the various systems and means of resource conservation,
- (iii) the various systems and technologies for collection, transport, storage, treatment, and final disposition of solid waste, and
- (iv) other aspects of solid waste and hazardous solid waste management.

Such central reference library shall also contain, but not be limited to, the model codes and model accounting systems developed under this section, the information collected under subsection (a), and, subject to any applicable requirements of confidentiality, information respecting any aspect of solid waste provided by officers and employees of the Environmental Protection Agency which has been acquired by them in the conduct of their functions under this Act and which may be of value to Federal, State, and local authorities and other persons.

(2) Information in the central reference library shall, to the extent practicable, be collated, analyzed, verified, and published and shall be made available to the State and local governments and other persons at reasonable times and subject to such reasonable charges as may be necessary to defray expenses of making such information available.

(c) MODEL ACCOUNTING SYSTEM.—In order to assist State and local governments in determining the cost and revenues associated with the collection and disposal of solid waste and with resource recovery operations, the Administrator shall develop and publish a recommended model cost and revenue accounting system applicable to the solid waste management functions of State and local governments. Such system shall be in accordance with generally accepted accounting principles. The Administrator shall periodically, but not less frequently than once every five years, review such accounting system and revise it as necessary.

(d) MODEL CODES.—The Administrator is authorized, in cooperation with appropriate State and local agencies, to recommend model codes, ordinances, and statutes, providing for sound solid waste management.

(e) INFORMATION PROGRAMS.—(1) The Administrator shall implement a program for the rapid dissemination of information on solid waste management, hazardous waste management, resources conservation, and methods of resource recovery from solid waste, including the results of any relevant research, investigations, experiments, surveys, studies, or other information which may be useful in the implementation of new or improved solid waste management practices and methods and information on any other technical, managerial, financial, or market aspect of resource conservation and recovery facilities.

(2) The Administrator shall develop and implement educational programs to promote citizen understanding of the need for environmentally sound solid waste management practices.

(f) COORDINATION.—In collecting and disseminating information under this section, the Administrator shall coordinate his actions and cooperate to the maximum extent possible with State and local authorities.

(g) SPECIAL RESTRICTION.—Upon request, the full range of alternative technologies programs or processes deemed feasible to meet the resource recovery or resource conservation needs of a jurisdiction shall be described in such a manner as to provide a sufficient evaluative basis from which the jurisdiction can make its decisions, but no officer or employee of the Environmental Protection Agency shall, in an official capacity, lobby for or otherwise represent an agency position in favor of resource recovery or resource conservation.

tion a policy alternative for adoption into ordinances, codes, regulations, or law by any State or political subdivision thereof.

FULL-SCALE DEMONSTRATION FACILITIES

SEC. 8004. (a) AUTHORITY.—The Administrator may enter into contracts with public agencies or authorities or private persons for the construction and operation of a full-scale demonstration facility under this Act, or provide financial assistance in the form of grants to a full-scale demonstration facility under this Act only if the Administrator finds that—

(1) such facility or proposed facility will demonstrate at full-scale a new or significantly improved technology or process, a practical and significant improvement in solid waste management practice, or the technological feasibility and cost effectiveness of an existing, but unproven technology, process, or practice, and will not duplicate any other Federal, State, local, or commercial facility which has been constructed or with respect to which construction has begun (determined as of the date action is taken by the Administrator under this Act),

(2) such contract or assistance meets the requirements of section 8001 and meets other applicable requirements of the Act,

(3) such facility will be able to comply with the guidelines published under section 1008 and with other laws and regulations for the protection of health and the environment,

(4) in the case of a contract for construction or operation, such facility is not likely to be constructed or operated by State, local, or private persons or in the case of an application for financial assistance, such facility is not likely to receive adequate financial assistance from other sources, and

(5) any Federal interest in, or assistance to, such facility will be disposed of or terminated, with appropriate compensation, within such period of time as may be necessary to carry out the basic objectives of this Act.

(b) TIME LIMITATION.—No obligation may be made by the Administrator for financial assistance under this subtitle for any full-scale demonstration facility after the date ten years after the enactment of this section. No expenditure of funds for any such full-scale demonstration facility under this subtitle may be made by the Administrator after the date fourteen years after such date of enactment.

(c) COST SHARING.—(1) Wherever practicable, in constructing, operating, or providing financial assistance under this subtitle to a full-scale demonstration facility, the Administrator shall endeavor to enter into agreements and make other arrangements for maximum practicable cost sharing with other Federal, State, and local agencies, private persons, or any combination thereof.

(2) The Administrator shall enter into arrangements, wherever practicable, and desirable, to provide monitoring of full-scale solid waste facilities (whether or not constructed or operated under this Act) for purposes of obtaining information concerning the performance, and other aspects, of such facilities. Where the Administrator provides only monitoring and evaluation instruments or personnel (or both) or funds for such instruments or personnel and provides

no other financial assistance to a facility, notwithstanding section 8001(c)(3), title to any invention made or conceived of in the course of developing, constructing, or operating such facility shall not be required to vest in the United States and patents respecting such invention shall not be required to be issued to the United States.

(d) PROHIBITION.—After the date of enactment of this section, the Administrator shall not construct or operate any full-scale facility (except by contract with public agencies or authorities or private persons).

SPECIAL STUDY AND DEMONSTRATION PROJECTS ON RECOVERY OF USEFUL ENERGY, AND MATERIALS

SEC. 8005. (a) STUDIES.—The Administrator shall conduct studies and develop recommendations for administrative or legislative action on—

(1) means of recovering materials and energy from solid waste, recommended uses of such materials and energy for national or international welfare, including identification of potential markets for such recovered resources, the impact of distribution of such resources on existing markets, and potentials for energy conservation through resource conservation and resource recovery;

(2) actions to reduce waste generation which have been taken voluntarily or in response to governmental action, and those which practically could be taken in the future, and the economic, social, and environmental consequences of such actions;

(3) methods of collection, separation, and containerization which will encourage efficient utilization of facilities and contribute to more effective programs of reduction, reuse, or disposal of wastes;

(4) the use of Federal procurement to develop market demand for recovered resources;

(5) recommended incentives (including Federal grants, loans, and other assistance) and disincentives to accelerate the reclamation or recycling of materials from solid wastes, with special emphasis on motor vehicle hulks;

(6) the effect of existing public policies, including subsidies and economic incentives and disincentives, percentage depletion allowances, capital gains treatment and other tax incentives and disincentives, upon the recycling and reuse of materials, and the likely effect of the modification or elimination of such incentives and disincentives upon the reuse, recycling and conservation of such materials;

(7) the necessity and method of imposing disposal or other charges on packaging, containers, vehicles, and other manufactured goods, which charges would reflect the cost of final disposal, the value of recoverable components of the item, and any social costs associated with nonrecycling or uncontrolled disposal of such items; and

(8) the legal constraints and institutional barriers to the acquisition of land needed for solid waste management, including land for facilities and disposal sites;

(9) in consultation with the Secretary of Agriculture, agricultural waste management problems and practices, the extent of reuse and recovery of resources in such wastes, the prospects for improvement, Federal, State, and local regulations governing such practices, and the economic, social, and environmental consequences of such practices; and

(10) in consultation with the Secretary of the Interior, mining waste management problems and practices, including an assessment of existing authorities, technologies, and economics, and the environmental and public health consequences of such practices.

(b) **DEMONSTRATION.**—The Administrator is also authorized to carry out demonstration projects to test and demonstrate methods and techniques developed pursuant to subsection (a).

(c) **APPLICATION OF OTHER SECTIONS.**—Section 8001 (b) and (c) shall be applicable to investigations, studies, and projects carried out under this section.

GRANTS FOR RESOURCE RECOVERY SYSTEMS AND IMPROVED SOLID WASTE DISPOSAL FACILITIES

SEC. 8006. (a) AUTHORITY.—The Administrator is authorized to make grants pursuant to this section to any State, municipal, or interstate or intermunicipal agency for the demonstration of resource recovery systems or for the construction of new or improved solid waste disposal facilities.

(b) **CONDITIONS.**—(1) Any grant under this section for the demonstration of a resource recovery system may be made only if it (A) is consistent with any plans which meet the requirements of subtitle D of this Act; (B) is consistent with the guidelines recommended pursuant to section 1008 of this Act; (C) is designed to provide area-wide resource recovery systems consistent with the purposes of this Act, as determined by the Administrator, pursuant to regulations promulgated under subsection (d) of this section; and (D) provides an equitable system for distributing the costs associated with construction, operation, and maintenance of any resource recovery system among the users of such system.

(2) The Federal share for any project to which paragraph (1) applies shall not be more than 75 percent.

(c) **LIMITATIONS.**—(1) A grant under this section for the construction of a new or improved solid waste disposal facility may be made only if—

(A) a State or interstate plan for solid waste disposal has been adopted which applies to the area involved, and the facility to be constructed (i) is consistent with such plan, (ii) is included in a comprehensive plan for the area involved which is satisfactory to the Administrator for the purposes of this Act, and (iii) is consistent with the guidelines recommended under section 1008, and

(B) the project advances the state of the art by applying new and improved techniques in reducing the environmental impact of solid waste disposal, in achieving recovery of energy or resources, or in recycling useful materials.

(2) The Federal share for any project to which paragraph (1) applies shall not be more than 50 percent in the case of a project serving an area which includes only one municipality, and not more than 75 percent in any other case.

(d) **REGULATIONS.**—(1) The Administrator shall promulgate regulations establishing a procedure for awarding grants under this section which—

(A) provides that projects will be carried out in communities of varying sizes, under such conditions as will assist in solving the community waste problems of urban-industrial centers, metropolitan regions, and rural areas, under representative geographic and environmental conditions; and

(B) provides deadlines for submission of, and action on, grant requests.

(2) In taking action on applications for grants under this section, consideration shall be given by the Administrator (A) to the public benefits to be derived by the construction and the propriety of Federal aid in making such grant; (B) to the extent applicable, to the economic and commercial viability of the project (including contractual arrangements with the private sector to market any resources recovered); (C) to the potential of such project for general application to community solid waste disposal problems; and (D) to the use by the applicant of comprehensive regional or metropolitan area planning.

(e) **ADDITIONAL LIMITATIONS.**—A grant under this section—

(1) may be made only in the amount of the Federal share of (A) the estimated total design and construction costs, plus (B) in the case of a grant to which subsection (b)(1) applies, the first-year operation and maintenance costs;

(2) may not be provided for land acquisition or (except as otherwise provided in paragraph (1)(B)) for operating or maintenance costs;

(3) may not be made until the applicant has made provision satisfactory to the Administrator for proper and efficient operation and maintenance of the project (subject to paragraph (1)(B)); and

(4) may be made subject to such conditions and requirements, in addition to those provided in this section, as the Administrator may require to properly carry out his functions pursuant to this Act.

For purposes of paragraph (1), the non-Federal share may be in any form, including, but not limited to, lands or interests therein needed for the project or personal property or services, the values of which shall be determined by the Administrator.

(f) **SINGLE STATE.**—(1) Not more than 15 percent of the total of funds authorized to be appropriated for any fiscal year to carry out this section shall be granted under this section for projects in any one State.

(2) The Administrator shall prescribe by regulation the manner in which the subsection shall apply to a grant under this section for a project in an area which includes all or part of more than one State.

SEC. 8007. There are authorized to be appropriated not to exceed \$35,000 for the fiscal year 1978 to carry out the purposes of this subtitle (except for section 8002).

Subtitle I—Regulation of Underground Storage Tanks

DEFINITIONS AND EXEMPTIONS

SEC. 9001. For the purposes of this subtitle—

(1) The term "underground storage tank" means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10 per centum or more beneath the surface of the ground. Such term does not include any—

(A) farm or residential tank of 1,000 gallons or less capacity used for storing motor fuel for noncommercial purposes,

(B) tank used for storing heating oil for domestic use on the premises where stored,

(C) septic tank,

(D) pipeline facility (including gathering line) regulated under—

(i) the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671, et seq.),

(ii) the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, et seq.), or

(iii) which is an intrastate pipeline facility regulated under State laws comparable to the provisions of law referred to in clause (i) or (ii) of this subparagraph,

(E) surface impoundment, pit, pond, or lagoon,

(F) storm water or waste water collection system,

(G) flow-through process tank,

(H) liquid trap or associated gathering lines directly related to oil or gas production and gathering operations, or

(I) storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term "underground storage tank" shall not include any pipes connected to any tank which is described in subparagraphs (A) through (I).

(2) The term "regulated substance" means—

(A) any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and

(B) petroleum []. [including crude oil or any fraction thereof which is liquid at standard conditions of tempera-

ture and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute)] "

(3) The term "owner" means—

(A) in the case of an underground storage tank in use on the date of enactment of the Hazardous and Solid Waste Amendments of 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(B) in the case of any underground storage tank in use before the date of enactment of the Hazardous and Solid Waste Amendments of 1984, but no longer in use on the date of enactment of such Amendments, any person who owned such tank immediately before the discontinuation of its use.

(4) The term "operator" means any person in control of, or having responsibility for, the daily operation of the underground storage tank.

(5) The term "release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank into ground water, surface water or subsurface soils.

(6) The term "person" has the same meaning as provided in section 1004(15), except that such term includes a consortium, a joint venture, and a commercial entity, and the United States Government.

(7) The term "nonoperational storage tank" means any underground storage tank in which regulated substances will not be deposited or from which regulated substances will not be dispensed after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

" (8) The term "petroleum" means petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

NOTIFICATION

SEC. 9002. (a) UNDERGROUND STORAGE TANKS.—(1) Within 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, each owner of an underground storage tank shall notify the State or local agency or department designated pursuant to subsection (b)(1) of the existence of such tank, specifying the age, size, type, location, and uses of such tank.

(2)(A) For each underground storage tank taken out of operation after January 1, 1974, the owner of such tank shall, within eighteen months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, notify the State or local agency, or department designated pursuant to subsection (b)(1) of the existence of such tanks (unless the owner knows the tank subsequently was removed from the ground). The owner of a tank taken out of operation on or before January 1, 1974, shall not be required to notify the State or local agency under this subsection.

(B) Notice under subparagraph (A) shall specify, to the extent known to the owner—

- (i) the date the tank was taken out of operation,
- (ii) the age of the tank on the date taken out of operation,
- (iii) the size, type and location of the tank, and
- (iv) the type and quantity of substances left stored in such tank on the date taken out of operation.

(3) Any owner which brings into use an underground storage tank after the initial notification period specified under paragraph (1), shall notify the designated State or local agency or department within thirty days of the existence of such tank, specifying the age, size, type, location and uses of such tank.

(4) Paragraphs (1) through (3) of this subsection shall not apply to tanks for which notice was given pursuant to section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

(5) Beginning thirty days after the Administrator prescribes the form of notice pursuant to subsection (b)(2) and for eighteen months thereafter, any person who deposits regulated substances in an underground storage tank shall reasonably notify the owner or operator of such tank of the owner's notification requirements pursuant to this subsection.

(6) Beginning thirty days after the Administrator issues new tank performance standards pursuant to section 9003(c) of this subtitle, any person who sells a tank intended to be used as an underground storage tank shall notify the purchaser of such tank of the owner's notification requirements pursuant to this subsection.

(b) AGENCY DESIGNATION.—(1) Within one hundred and eighty days after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Governors of each State shall designate the appropriate State agency or department or local agencies or departments to receive the notifications under subsection (a)(1), (2), or (3).

(2) Within twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator, in consultation with State and local officials designated pursuant to subsection (b)(1), and after notice and opportunity for public comment, shall prescribe the form of the notice and the information to be included in the notifications under subsection (a)(1), (2), or (3). In prescribing the form of such notice, the Administrator shall take into account the effect on small businesses and other owners and operators.

¹² (c) STATE INVENTORIES.—Each State shall make 2 separate inventories of all underground storage tanks in such State containing regulated substances. One inventory shall be made with respect to petroleum and one with respect to other regulated substances. In making such inventories, the State shall utilize and aggregate the data in the notification forms submitted pursuant to subsections (a) and (b) of this section. Each State shall submit such aggregated data to the Administrator not later than 270 days after the enactment of the Superfund Amendments and Reauthorization Act of 1986.

RELEASE DETECTION, PREVENTION, AND CORRECTION REGULATIONS

SEC. 9003. (a) REGULATIONS.—The Administrator, after notice and opportunity for public comment, and at least three months before the effective dates specified in subsection (f), shall promulgate release detection, prevention, and correction regulations applicable to all owners and operators of underground storage tanks, as may be necessary to protect human health and the environment.

(b) DISTINCTIONS IN REGULATIONS.—In promulgating regulations under this section, the Administrator may distinguish between types, classes, and ages of underground storage tanks. In making such distinctions, the Administrator may take into consideration factors, including, but not limited to: location of the tanks, soil and climate conditions, uses of the tanks, history of maintenance, age of the tanks, current industry recommended practices, national consensus codes, hydrogeology, water table, size of the tanks, quantity of regulated substances periodically deposited in or dispensed from the tank, the technical capability of the owners and operators, and the compatibility of the regulated substance and the materials of which the tank is fabricated.

(c) REQUIREMENTS.—The regulations promulgated pursuant to this section shall include, but need not be limited to, the following requirements respecting all underground storage tanks—

(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designed to identify releases in a manner consistent with the protection of human health and the environment;

(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing or comparable system;

(3) requirements for reporting of releases and corrective action taken in response to a release from an underground storage tank;

(4) requirements for taking corrective action in response to a release from an underground storage tank; [and] ¹³

(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment [..]; and ¹⁴

¹⁵ (6) requirements for maintaining evidence of financial responsibility for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank.

(d) FINANCIAL RESPONSIBILITY.—[(1) As he deems necessary or desirable, the Administrator shall promulgate regulations containing requirements for maintaining evidence of financial responsibility as he deems necessary and desirable for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank.] ¹⁶

[(2)](1) ¹⁷ Financial responsibility required by this subsection may be established in accordance with regulations promulgated by

the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, [or] qualification as a self-insurer[], for any other method satisfactory to the Administrator.]¹⁴ In promulgating requirements under this subsection, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

[(3)](2)¹⁵ In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in the State court of the Federal Courts cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

[(4)](3)¹⁶ The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

[(5)](4)¹⁷ For the purpose of this subsection, the term "guarantor" means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

¹⁸ (SXA) The Administrator, in promulgating financial responsibility regulations under this section, may establish an amount of coverage for particular classes or categories of underground storage tanks containing petroleum which shall satisfy such regulations and which shall not be less than \$1,000,000 for each occurrence with an appropriate aggregate requirement.

(B) The Administrator may set amounts lower than the amounts required by subparagraph (A) of this paragraph for underground storage tanks containing petroleum which are at facilities not engaged in petroleum production, refining, or marketing and which are not used to handle substantial quantities of petroleum.

(C) In establishing classes and categories for purposes of this paragraph, the Administrator may consider the following factors:

(i) The size, type, location, storage, and handling capacity of underground storage tanks in the class or category and the volume of petroleum handled by such tanks.

(ii) The likelihood of release and the potential extent of damage from any release from underground storage tanks in the class or category.

(iii) The economic impact of the limits on the owners and operators of each such class or category, particularly relating to the small business segment of the petroleum marketing industry.

(iv) The availability of methods of financial responsibility in amounts greater than the amount established by this paragraph.

(v) Such other factors as the Administrator deems pertinent.

(D) The Administrator may suspend enforcement of the financial responsibility requirements for a particular class or category of underground storage tanks or in a particular State, if the Administrator makes a determination that methods of financial responsibility satisfying the requirements of this subsection are not generally available for underground storage tanks in that class or category, and—

(i) steps are being taken to form a risk retention group for such class of tanks; or

(ii) such State is taking steps to establish a fund pursuant to section 9004(c)(1) of this Act to be submitted as evidence of financial responsibility.

A suspension by the Administrator pursuant to this paragraph shall extend for a period not to exceed 180 days. A determination to suspend may be made with respect to the same class or category or for the same State at the end of such period, but only if substantial progress has been made in establishing a risk retention group, or the owners or operators in the class or category demonstrate, and the Administrator finds, that the formation of such a group is not possible and that the State is unable or unwilling to establish such a fund pursuant to clause (ii).

(e) **NEW TANK PERFORMANCE STANDARDS.**—The Administrator shall, not later than three months prior to the effective date specified in subsection (f), issue performance standards for underground storage tanks brought into use on or after the effective date of such standards. The performance standards for new underground storage tanks shall include, but need not be limited to, design, construction, installation, release detection, and compatibility standards.

(f) **EFFECTIVE DATES.**—(1) Regulations issued pursuant to subsection (c) and (d) of this section, and standards issued pursuant to subsection (e) of this section, for underground storage tanks containing regulated substances defined in section 9001(2)(B) (petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure) shall be effective not later than thirty months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

(2) Standards issued pursuant to subsection (e) of this section (entitled "New Tank Performance Standards") for underground storage

¹⁴ Language enclosed in light-face brackets indicates amendment made by P.L. 99-499, Superfund.

¹⁵ P.L. 99-499, Superfund.

units containing regulated substances defined in section 9001(2)(A) shall be effective not later than thirty-six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

(3) Regulations issued pursuant to subsection (c) of this section (entitled "Requirements") and standards issued pursuant to subsection (d) of this section (entitled "Financial Responsibility") for underground storage tanks containing regulated substances defined in section 9001(2)(A) shall be effective not later than forty-eight months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

(g) **INTERIM PROHIBITION.**—(1) Until the effective date of the standards promulgated by the Administrator under subsection (c) and after one hundred and eighty days after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, no person may install an underground storage tank for the purpose of storing regulated substances unless such tank (whether of single or double wall construction)—

(A) will prevent releases due to corrosion or structural failure for the operational life of the tank;

(B) is cathodically protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(C) the material used in the construction or lining of the tank is compatible with the substance to be stored.

(2) Notwithstanding paragraph (1), if soil tests conducted in accordance with ASTM Standard G57-78, or another standard approved by the Administrator, show that soil resistivity in an installation location is 12,000 ohm/cm or more (unless a more stringent standard is prescribed by the Administrator by rule), a storage tank without corrosion protection may be installed in that location during the period referred to in paragraph (1).

¹⁰ (h) **EPA RESPONSE PROGRAM FOR PETROLEUM.**—

(1) **BEFORE REGULATIONS.**—Before the effective date of regulations under subsection (c), the Administrator (or a State pursuant to paragraph (7)) is authorized to—

(A) require the owner or operator of an underground storage tank to undertake corrective action with respect to any release of petroleum when the Administrator (or the State) determines that such corrective action will be done properly and promptly by the owner or operator of the underground storage tank from which the release occurs; or

(B) undertake corrective action with respect to any release of petroleum into the environment from an underground storage tank if such action is necessary, in the judgment of the Administrator (or the State), to protect human health and the environment.

The corrective action undertaken or required under this paragraph shall be such as may be necessary to protect human health and the environment. The Administrator shall use funds in the Leaking Underground Storage Tank Trust Fund for pay-

ment of costs incurred for corrective action under subparagraph (B), enforcement action under subparagraph (A), and cost recovery under paragraph (6) of this subsection. Subject to priority requirements of paragraph (3), the Administrator (or the State) shall give priority in undertaking such actions under subparagraph (B) to cases where the Administrator (or the State) cannot identify a solvent owner or operator of the tank who will undertake action properly.

(2) **AFTER REGULATIONS.**—Following the effective date of regulations under subsection (c), all actions or orders of the Administrator (or a State pursuant to paragraph (7)) described in paragraph (1) of this subsection shall be in conformity with such regulations. Following such effective date, the Administrator (or the State) may undertake corrective action with respect to any release of petroleum into the environment from an underground storage tank only if such action is necessary, in the judgment of the Administrator (or the State), to protect human health and the environment and one or more of the following situations exists:

(A) No person can be found, within 90 days or such shorter period as may be necessary to protect human health and the environment, who is—

(i) an owner or operator of the tank concerned,

(ii) subject to such corrective action regulations, and

(iii) capable of carrying out such corrective action properly.

(B) A situation exists which requires prompt action by the Administrator (or the State) under this paragraph to protect human health and the environment.

(C) Corrective action costs at a facility exceed the amount of coverage required by the Administrator pursuant to the provisions of subsections (c) and (d)(5) of this section and, considering the class or category of underground storage tank from which the release occurred, expenditures from the Leaking Underground Storage Tank Trust Fund are necessary to assure an effective corrective action.

(D) The owner or operator of the tank has failed or refused to comply with an order of the Administrator under this subsection or section 9006 or with the order of a State under this subsection to comply with the corrective action regulations.

(3) **PRIORITY OF CORRECTIVE ACTIONS.**—The Administrator (or a State pursuant to paragraph (7)) shall give priority in undertaking corrective actions under this subsection, and in issuing orders requiring owners or operators to undertake such actions, to releases of petroleum from underground storage tanks which pose the greatest threat to human health and the environment.

(4) **CORRECTIVE ACTION ORDERS.**—The Administrator is authorized to issue orders to the owner or operator of an underground storage tank to carry out subparagraph (A) of paragraph (1) or to carry out regulations issued under subsection (c)(1). A State acting pursuant to paragraph (7) of this subsection is authorized to carry out subparagraph (A) of paragraph (1) only

If the State's program is approved by the Administrator under section 9004 of this subtitle. Such orders shall be issued and enforced in the same manner and subject to the same requirements as orders under section 9006.

(5) **ALLOWABLE CORRECTIVE ACTIONS.**—The corrective actions undertaken by the Administrator (or the State pursuant to paragraph (7)) under paragraph (1) or (2) may include temporary or permanent relocation of residents and alternative household water supplies. In connection with the performance of any corrective action under paragraph (1) or (2), the Administrator may undertake an exposure assessment as defined in paragraph (10) of this subsection or provide for such an assessment in a cooperative agreement with a State pursuant to paragraph (7) of this subsection. The costs of any such assessment may be treated as corrective action for purposes of paragraph (6), relating to cost recovery.

(6) **RECOVERY OF COSTS.**—

(A) **IN GENERAL.**—Whenever costs have been incurred by the Administrator, or by a State pursuant to paragraph (7), for undertaking corrective action or enforcement action with respect to the release of petroleum from an underground storage tank, the owner or operator of such tank shall be liable to the Administrator or the State for such costs. The liability under this paragraph shall be construed to be the standard of liability which obtains under section 311 of the Federal Water Pollution Control Act.

(B) **RECOVERY.**—In determining the equities for seeking the recovery of costs under subparagraph (A), the Administrator (or a State pursuant to paragraph (7) of this subsection) may consider the amount of financial responsibility required to be maintained under subsections (c) and (d)(5) of this section and the factors considered in establishing such amount under subsection (d)(5).

(C) **EFFECT ON LIABILITY.**—

(i) **NO TRANSFERS OF LIABILITY.**—No indemnification, hold harmless, or similar agreement or conveyance shall be effective to transfer from the owner or operator of any underground storage tank or from any person who may be liable for a release or threat of release under this subsection, to any other person the liability imposed under this subsection. Nothing in this subsection shall bar any agreement to insure, hold harmless, or indemnify a party to such agreement for any liability under this subsection.

(ii) **NO BAR TO CAUSE OF ACTION.**—Nothing in this subsection, including the provisions of clause (i) of this subparagraph, shall bar a cause of action that an owner or operator or any other person subject to liability under this section, or a guarantor, has or would have, by reason of subrogation or otherwise against any person.

(D) **FACILITY.**—For purposes of this part, the term "facility" means, with respect to any owner or operator, all underground storage tanks used for the storage of petroleum

which are owned or operated by such owner or operator and located on a single parcel of property (or on any contiguous or adjacent property).

(7) **STATE AUTHORITIES.**—

(A) **GENERAL.**—A State may exercise the authorities in paragraphs (1) and (2) of this subsection, subject to the terms and conditions of paragraphs (3), (5), (9), (10), and (11), and including the authorities of paragraphs (4), (6), and (8) of this subsection if—

(i) the Administrator determines that the State has the capabilities to carry out effective corrective actions and enforcement activities; and

(ii) the Administrator enters into a cooperative agreement with the State setting out the actions to be undertaken by the State.

The Administrator may provide funds from the Leaking Underground Storage Tank Trust Fund for the reasonable costs of the State's actions under the cooperative agreement.

(B) **COST SHARE.**—Following the effective date of the regulations under subsection (c) of this section, the State shall pay 10 per centum of the cost of corrective actions undertaken either by the Administrator or by the State under a cooperative agreement, except that the Administrator may take corrective action at a facility where immediate action is necessary to respond to an imminent and substantial endangerment to human health or the environment if the State fails to pay the cost share.

(8) **EMERGENCY PROCUREMENT POWERS.**—Notwithstanding any other provision of law, the Administrator may authorize the use of such emergency procurement powers as he deems necessary.

(9) **DEFINITION OF OWNER.**—As used in this subsection, the term "owner" does not include any person who, without participating in the management of an underground storage tank and otherwise not engaged in petroleum production, refining, and marketing, holds indicia of ownership primarily to protect the owner's security interest in the tank.

(10) **DEFINITION OF EXPOSURE ASSESSMENT.**—As used in this subsection, the term "exposure assessment" means an assessment to determine the extent of exposure of, or potential for exposure of, individuals to petroleum from a release from an underground storage tank based on such factors as the nature and extent of contamination and the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size of the community within the likely pathways of exposure, and the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified contaminants and any available recommended exposure or tolerance limits for such contaminants. Such assessment shall not delay corrective action to abate immediate hazards or reduce exposure.

(11) **FACILITIES WITHOUT FINANCIAL RESPONSIBILITY.**—At any facility where the owner or operator has failed to maintain environmental

dence of financial responsibility in amounts at least equal to the amount established by subsection (d)(5)(A) of this section (or a lesser amount if such amount is applicable to such facility as a result of subsection (d)(5)(B) of this section) for whatever reason the Administrator shall expend no monies from the Leaking Underground Storage Tank Trust Fund to clean up releases at such facility pursuant to the provisions of paragraph (1) or (2) of this subsection. At such facilities the Administrator shall use the authorities provided in subparagraph (A) of paragraph (1) and paragraph (4) of this subsection and section 9006 of this subtitle to order corrective action to clean up such releases. States acting pursuant to paragraph (7) of this subsection shall use the authorities provided in subparagraph (A) of paragraph (1) and paragraph (4) of this subsection to order corrective action to clean up such releases. Notwithstanding the provisions of this paragraph, the Administrator may use monies from the fund to take the corrective actions authorized by paragraph (5) of this subsection to protect human health at such facilities and shall seek full recovery of the costs of all such actions pursuant to the provisions of paragraph (6)(A) of this subsection and without consideration of the factors in paragraph (6)(B) of this subsection. Nothing in this paragraph shall prevent the Administrator (or a State pursuant to paragraph (7) of this subsection) from taking corrective action at a facility where there is no solvent owner or operator or where immediate action is necessary to respond to an imminent and substantial endangerment of human health or the environment.

APPROVAL OF STATE PROGRAMS

SEC. 9004. (a) **ELEMENTS OF STATE PROGRAM.**—Beginning 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, any State may, submit an underground storage tank release detection, prevention, and correction program for review and approval by the Administrator. The program may cover tanks used to store regulated substances referred to in 9001(2) (A) or (B) or both. A State program may be approved by the Administrator under this section only if the State demonstrates that the State program includes the following requirements and standards and provides for adequate enforcement of compliance with such requirements and standards—

(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designed to identify releases in a manner consistent with the protection of human health and the environment;

(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing system;

(3) requirements for reporting of any releases and corrective action taken in response to a release from an underground storage tank;

(4) requirements for taking corrective action in response to a release from an underground storage tank;

(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment;

(6) requirements for maintaining evidence of financial responsibility for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank;

(7) standards of performance for new underground storage tanks; and

(8) requirements—

(A) for notifying the appropriate State agency or department (or local agency or department) designed according to section 9002(b)(1) of the existence of any operational or non-operational underground storage tank; and

(B) for providing the information required on the form issued; pursuant to section 9002(b)(2).

(b) **FEDERAL STANDARDS.**—(1) A State program submitted under this section may be approved only if the requirements under paragraphs (1) through (7) of subsection (a) are no less stringent than the corresponding requirements standards promulgated by the Administrator pursuant to section 9003(a).

(2)(A) A State program may be approved without regard to whether or not the requirements referred to in paragraphs (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the one-year period commencing on the date of promulgation of regulations under section 9003(a) if State regulatory action but no State legislative action is required in order to adopt a State program.

(B) If such State legislative action is required, the State program may be approved without regard to whether or not the requirements referred to in paragraphs (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the two-year period commencing on the date of promulgation of regulations under section 9003(a) (and during an additional one-year period after such legislative action if regulations are required to be promulgated by the State pursuant to such legislative action).

(c) **FINANCIAL RESPONSIBILITY.**—(1) Corrective action and compensation programs [financed by fees on tank owners and operators and] ¹¹ administered by State or local agencies or departments may be submitted for approval under subsection (a)(6) as evidence of financial responsibility.

(2) Financial responsibility required by this subsection may be established in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, [or] ¹² qualification as a self-insurer[.], ¹³ [or any other method satisfactory to the Administrator.] ¹⁴ In promulgating requirements under this subsection,

¹¹ P.L. 99-499, Superfund.

¹² Language enclosed in light-face brackets indicates an amendment made by P.L. 99-499, Superfund.

the Administrator is authorized to specify policy of other contractual terms, (including the amount of coverage required for various classes and categories of underground storage tanks pursuant to section 9003(d)(5).) ¹⁰ conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

(3) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in any State court of the Federal courts cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

(4) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

(5) For the purpose of this subsection, the term "guarantor" means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

(d) EPA DETERMINATION.—(1) Within one hundred and eighty days of the date of receipt of a proposed State program, the Administrator shall, after notice and opportunity for public comment, make a determination whether the State's program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section.

(2) If the Administrator determines that a State program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section, he shall approve the State program in lieu of the Federal program and the State shall have primary enforcement responsibility with respect to requirements of its program.

¹⁰ Language enclosed in light-face brackets indicates an amendment made by P.L. 99-499, Superfund.

(e) WITHDRAWAL OF AUTHORIZATION.—Whenever the Administrator determines after public hearing that a State is not administering and enforcing a program authorized under this subtitle in accordance with the provisions of this section, he shall so notify the State. If appropriate action is not taken within a reasonable time, not to exceed one hundred and twenty days after such notification, the Administrator shall withdraw approval of such program and reestablish the Federal program pursuant to this subtitle.

[INSPECTIONS, MONITORING, AND TESTING] INSPECTIONS, MONITORING, TESTING, AND CORRECTIVE ACTION ²⁰

SEC. 9005. (a) FURNISHING INFORMATION.—For the purposes of developing or assisting in the development of any regulation, conducting any study, [taking any corrective action,] ²¹ or enforcing the provisions of this subtitle, any owner or operator of an underground storage tank (or any tank subject to study under section 9009 that is used for storing regulated substances) shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee, or representative of a State [acting pursuant to subsection (h)(7) of section 9003 Or.] ²¹ with an approved program, furnish information relating to such tanks, their associated equipment, their contents, conduct monitoring or testing, [and] ²⁰ permit such officer at all reasonable times to have access to, and to copy all records relating to such tanks [and permit such officer to have access for corrective action]. ²¹ For the purposes of developing or assisting in the development of any regulation, conducting any study, [taking corrective action,]

or enforcing the provisions of this subtitle, such officers, employees, or representatives are authorized—

(1) to enter at reasonable times any establishment or other place where an underground storage tank is located;

(2) to inspect and obtain samples from any person of any regulated substances contained in such tank; [and] ²⁰

(3) to conduct monitoring or testing of the tanks, associated equipment, contents, or surrounding soils, air, surface water or ground water [..]; and ²⁰

(4) to take corrective action. ²⁰

Each such inspection shall be commenced and completed with reasonable promptness.

(b) CONFIDENTIALITY.—(1) Any records, reports, or information obtained from any persons under this section shall be available to the public, except that upon a showing satisfactory to the Administrator (or the State, as the case may be) by any person that records, reports, or information, or a particular part thereof, to which the Administrator (or the State, as the case may be) or any officer, employee, or representative thereof has access under this section if made public, would divulge information entitled to protection under section 1905

²⁰ P.L. 99-499, Superfund.

²¹ Language enclosed in light-face brackets indicates an amendment made by P.L. 99-499, Superfund.

of title 18 of the United States Code, such information or particular portion thereof shall be considered confidential in accordance with the purposes of that section, except that such record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act, or when relevant in any proceeding under this Act.

(2) Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

(3) In submitting data under this subtitle, a person required to provide such data may—

(A) designate the data which such person believes is entitled to protection under this subsection, and

(B) submit such designated data separately from other data submitted under this subtitle.

A designation under this paragraph shall be made in writing and in such manner as the Administrator may prescribe.

(4) Notwithstanding any limitation contained in this section or any other provision of law, all information reported to, or otherwise obtained, by the Administrator (or any representative of the Administrator) under this Act shall be made available, upon written request of any duly authorized committee of the Congress, to such committee (including records, reports, or information obtained by representatives of the Environmental Protection Agency).

FEDERAL ENFORCEMENT

SEC. 9006. (a) COMPLIANCE ORDERS.—(1) Except as provided in paragraph (2), whenever on the basis of any information, the Administrator determines that any person is in violation of any requirements of this subtitle, the Administrator may issue an order requiring compliance within a reasonable specified time period or the Administrator may commence a civil action in the United States district court in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

(2) In the case of a violation of any requirement of this subtitle where such violation occurs in a State with a program approved under section 9004, the Administrator shall give notice to the State in which such violation has occurred prior to issuing an order or commencing a civil action under this section.

(3) If a violator fails to comply with an order under this subsection within the time specified in the order, he shall be liable for a civil penalty of not more than \$25,000 for each day of continued noncompliance.

(b) PROCEDURE.—Any order issued under this section shall become final unless, no later than thirty days after the order is served, the person or persons named therein request a public hearing. Upon such request the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section the Administrator may issue subpoenas for the attendance and testimony

of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.

(c) CONTENTS OF ORDER.—Any order issued under this section shall state with reasonable specificity the nature of the violation, specify a reasonable time for compliance, and assess a penalty, if any, which the Administrator determines is reasonable taking into account the seriousness of the violation and any good faith efforts to comply with the applicable requirements.

(d) CIVIL PENALTIES.—(1) Any owner who knowingly fails to notify or submit information pursuant to section 9002(a) shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or false information is submitted.

(2) Any owner or operator of an underground storage tank who fails to comply with—

(A) any requirement or standard promulgated by the Administrator under section 9003;

(B) any requirement or standard of a State program approved pursuant to section 9004; or

(C) the provisions of section 9003(g) (entitled "Interim Prohibition")

shall be subject to a civil penalty not to exceed \$10,000 for each tank for each day of violation.

FEDERAL FACILITIES

SEC. 9007. (a) APPLICATION OF SUBTITLE.—Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any underground storage tank shall be subject to and comply with all Federal, State, interstate, and local requirements, applicable to such tank, both substantive and procedural, in the same manner, and to the same extent, as any other person is subject to such requirements, including payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief.

(b) PRESIDENTIAL EXEMPTION.—The President may exempt any underground storage tanks of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriations. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

[STATE AUTHORITY]

[SEC. 9008. Nothing in this subtitle shall preclude or deny any right of any State or political subdivision thereof to adopt or enforce any regulation, requirement or standard of performance respecting underground storage tanks that is more stringent than a regulation, requirement, or standard of performance in effect under this subtitle.]²²

STATE AUTHORITY

SEC. 9008. Nothing in this subtitle shall preclude or deny any right of any State or political subdivision thereof to adopt or enforce any regulation, requirement, or standard of performance respecting underground storage tanks that is more stringent than a regulation, requirement, or standard of performance in effect under this subtitle or to impose any additional liability with respect to the release of regulated substances within such State or political subdivision.

STUDY OF UNDERGROUND STORAGE TANKS

SEC. 9009. (a) **PETROLEUM TANKS.**—Not later than twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of underground storage tanks used for the storage of regulated substances defined in section 9001(2)(B).

(b) **OTHER TANKS.**—Not later than thirty-six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of all other underground storage tanks.

(c) **ELEMENTS OF STUDIES.**—The studies under subsections (a) and (b) shall include an assessment of the ages, types (including methods of manufacture, coatings, protection systems, the compatibility of the construction materials and the installation methods) and locations (including the climate of the locations) of such tanks; soil conditions, water tables, and the hydrogeology of tank locations; the relationship between the foregoing factors and the likelihood of releases from underground storage tanks; the effectiveness and costs of inventory systems, tank testing, and leak detection systems; and such other factors as the Administrator deems appropriate.

(d) **FARM AND HEATING OIL TANKS.**—Not later than thirty-six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall conduct a study regarding the tanks referred to in section 9001(1)(A) and (B). Such study shall include estimates of the number and location of such tanks and an analysis of the extent to which there may be releases or threatened releases from such tanks into the environment.

(e) **REPORTS.**—Upon completion of the studies authorized by this section, the Administrator shall submit reports to the President and to the Congress containing the results of the studies and recommendations respecting whether or not such tanks should be subject to the preceding provisions of this subtitle.

²² P.L. 99-499, Superfund.

(f) **REIMBURSEMENT.**—(1) If any owner or operator (excepting an agency, department, or instrumentality of the United States Government, a State or a political subdivision thereof) shall incur costs, including the loss of business opportunity, due to the closure or interruption of operation of an underground storage tank solely for the purpose of conducting studies authorized by this section, the Administrator shall provide such person fair and equitable reimbursement for such costs.

(2) All claims for reimbursement shall be filed with the Administrator not later than ninety days after the closure or interruption which gives rise to the claim.

(3) Reimbursements made under this section shall be from funds appropriated by the Congress pursuant to the authorization contained in section 2007(g).

(4) For purposes of judicial review, a determination by the Administrator under this subsection shall be considered final agency action.

AUTHORIZATION OF APPROPRIATIONS

SEC. 9010. For authorization of appropriations to carry out this subtitle, see section 2007(g).

THE FOLLOWING PROVISIONS OF PUBLIC LAW 99-416 DO NOT AMEND THE SOLID WASTE DISPOSAL ACT

SEC. 221. (a) . . .

(b) The Administrator of the Environmental Protection Agency shall undertake activities to inform and educate the waste generators of their responsibilities under the amendments made by this section during the period within thirty months after the enactment of the Hazardous and Solid Waste Amendments of 1984 to help assure compliance.

(c) The Administrator of the Environmental Protection Agency in cooperation with the States shall conduct a study of hazardous waste identified or listed under section 3001 of the Solid Waste Disposal Act which is generated by individual generators in total quantities for each generator during any calendar month of less than one thousand kilograms. The Administrator may require from such generators information as may be necessary to conduct the study. Such study shall include a characterization of the number and type of such generators, the quantity and characteristics of hazardous waste generated by such generators, State requirements applicable to such generators, the individual and industry waste management practices of such generators, the potential costs of modifying those practices and the impact of such modifications on national treatment and disposal facility capacity, and the threat to human health and the environment and the employees of transporters or others involved in solid waste management posed by such hazardous wastes or such management practices. Such study shall be submitted to the Congress not later than April 1, 1985.

(d) The Administrator of the Environmental Protection Agency shall cause to be studied the existing manifest system for hazardous wastes as it applies to small quantity generators and recommend whether the current system shall be retained or whether a new system should be introduced. The study shall include an analysis of the cost versus the benefits of the system studied as well as an analysis of the ease of retrieving and collating information and identifying a given substance. Finally, any new proposal shall include a list of those standards that are necessary to protect human health and the environment. Such study shall be submitted to the Congress not later than April 1, 1987.

(e) The Administrator of the Environmental Protection Agency, in conjunction with the Secretary of Transportation, shall prepare and submit to the Congress a report on the feasibility of easing the administrative burden on small quantity generators, increasing compliance with statutory and regulatory requirements, and simplifying enforcement efforts through a program of licensing hazardous waste transporters to assume the responsibilities of small quantity generators relating to the preparation of manifests and associated recordkeeping and reporting requirements. The report shall examine the appropriate licensing requirements under such a program including the need for financial assurances by licensed transporters and shall make recommendations on provisions and requirements for such a program including the appropriate division of responsibilities between the Department of Transportation and the Environmental Protection Administration. Such report shall be submitted to the Congress not later than April 1, 1987.

(f)(1) The Administrator of the Environmental Protection Agency shall, in consultation with the Secretary of Education, the States, and appropriate educational associations, conduct a comprehensive study of problems associated with the accumulation, storage and disposal of hazardous wastes from educational institutions. The study shall include an investigation of the feasibility and availability of environmentally sound methods for the treatment, storage or disposal of hazardous waste from such institutions, taking into account the types and quantities of such waste which are generated by these institutions, and the nonprofit nature of these institutions.

(2) The Administrator shall submit a report to the Congress containing the findings of the study carried out under paragraph (1) not later than April 1, 1987.

(3) For purposes of this subsection—

(A) the term "hazardous waste" means hazardous waste which is listed or identified under Section 3001 of the Solid Waste Disposal Act;

(B) the term "educational institution" includes, but shall not be limited to,

(i) secondary schools as defined in section 198(a)(7) of the Elementary and Secondary Education Act of 1965; and

(ii) institutions of higher education as defined in section 1201(a) of the Higher Education Act of 1965.

REPORT TO CONGRESS ON INJECTION OF HAZARDOUS WASTE

SEC. 701. (a) The Administrator, in cooperation with the States, shall compile and, not later than six months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, submit to the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives, an inventory of all wells in the United States which inject hazardous wastes. The inventory shall include the following information:

(1) the location and depth of each well;

(2) engineering and construction details of each, including the thickness and composition of its casing, the width and content of the annulus, and pump pressure and capacity;

(3) the hydrogeological characteristics of the overlying and underlying strata, as well as that into which the waste is injected;

(4) the location and size of all drinking water aquifers penetrated by the well, or within a one-mile radius of the well or within two hundred feet below the well injection point;

(5) the location, capacity, and population served by each well providing drinking or irrigation water which is within a five-mile radius of the injection well;

(6) the nature and volume of the waste injected during the one-year period immediately preceding the date of the report;

(7) the dates and nature of the inspections of the injection well conducted by independent third parties or agents of State, Federal, or local government;

(8) the name and address of all owners and operators of the well and any disposal facility associated with it;

(9) the identification of all wells at which enforcement actions have been initiated under this Act (by reason of well failure, operator error, ground water contamination or for other reasons) and an identification of the wastes involved in such enforcement actions; and

(10) such other information as the Administrator may, in his discretion, deem necessary to define the scope and nature of hazardous waste disposal in the United States through underground injection.

(b) In fulfilling the requirements of paragraphs (3) through (5) of subsection (a), the Administrator need only submit such information as can be obtained from currently existing State records and from site visits to at least twenty facilities containing wells which inject hazardous waste.

(c) The States shall make available to the Administrator such information as he deems necessary to accomplish the objectives of this section.

EXTENDING THE USEFUL LIFE OF SANITARY LANDFILLS

SEC. 702. Section 8002 of the Solid Waste Disposal Act is amended by adding the following new subsection after subsection (r) thereof:

(18) **ENDING LANDFILL LIFE AND REFUSING LANDFILLED AREAS.**—The Administrator shall conduct detailed, comprehensive studies of methods to extend the useful life of sanitary landfills and to better use sites in which filled or closed landfills are located. Such studies shall address—

"(1) methods to reduce the volume of materials before placement in landfills;

"(2) more efficient systems for depositing waste in landfills;

"(3) methods to enhance the rate of decomposition of solid waste in landfills, in a safe and environmentally acceptable manner;

"(4) methane production from closed landfill units;

"(5) innovative uses of closed landfill sites, including use for energy production such as solar or wind energy and use for metals recovery;

"(6) potential for use of sewage treatment sludge in reclaiming landfilled areas; and

"(7) methods to coordinate use of a landfill owned by one municipality by nearby municipalities, and to establish equitable rates for such use, taking into account the need to provide future landfill capacity to replace that so used.

The Administrator is authorized to conduct demonstrations in the areas of study provided in this subsection. The Administrator shall periodically report on the results of such studies, with the first such report not later than October 1, 1986. In carrying out this subsection, the Administrator need not duplicate other studies which have been completed and may rely upon information which has previously been compiled."

URANIUM MILL TAILINGS

SEC. 703. Nothing in the Hazardous and Solid Waste Amendments of 1984 shall be construed to affect, modify, or amend the Uranium Mill Tailings Radiation Control Act of 1978.

NATIONAL GROUND WATER COMMISSION

SEC. 704. (a) There is established a commission to be known as the National Ground Water Commission (hereinafter in this section referred to as the "Commission").

(b) The duties of the Commission are to:

(1) Assess generally the amount, location, and quality of the Nation's ground water resources.

(2) Identify generally the sources, extent, and types of ground water contamination.

(3) Assess the scope and nature of the relationship between ground water contamination and ground water withdrawal and develop projections of available, usable ground water in future years on a nationwide basis.

(4) Assess The relationship between surface water pollution and ground water pollution.

(5) Assess the need for a policy to protect ground water from degradation caused by contamination.

(6) Assess generally the extent of overdrafting of ground water resources, and the adequacy of existing mechanisms for preventing such overdrafting.

(7) Assess generally the engineering and technological capability to recharge aquifers.

(8) Assess the adequacy of the present understanding of ground water recharge zones and sole source aquifers and assess the adequacy of knowledge regarding the interrelationship of designated aquifers and recharge zones.

(9) Assess the role of land-use patterns as these relate to protecting ground water from contamination.

(10) Assess methods for remedial abatement of ground water contamination as well as the costs and benefits of cleaning up polluted ground water and compare cleanup costs to the costs of substitute water supply methods.

(11) Investigate policies and actions taken by foreign governments to protect ground water from contamination.

(12) Assess the use and effectiveness of existing interstate compacts to address ground water protection from contamination.

(13) Analyze existing legal rights and remedies regarding contamination of ground water.

(14) Assess the adequacy of existing standards for ground water quality under State and Federal law.

(15) Assess monitoring methodologies of the States and the Federal Government to achieve the level of protection of the resource as required by State and Federal law.

(16) Assess the relationship between ground water flow systems (and associated recharge areas) and the control of sources of contamination.

(17) Assess the role of underground injection practices as a means of disposing of waste fluids while protecting ground water from contamination.

(18) Assess methods for abatement and containment of ground water contamination and for aquifer restoration including the costs and benefits of alternatives to abatement and containment.

(19) Assess State and Federal ground water law and mechanisms with which to manage the quality of the ground water resource.

(20) Assess the adequacy of existing ground water research and determine future ground water research needs.

(21) Assess the roles of State, local, and Federal Governments in managing ground water quality.

(c)(1) The Commission shall be composed of nineteen members as follows:

(A) six appointed by the Speaker of the United States House of Representatives from among the Members of the House of Representatives, two of whom shall be members of the Committee on Energy and Commerce, two of whom shall be members of the Committee on Public Works and Transportation, and two of whom shall be members of the Committee on Interior and Insular Affairs;

(B) be appointed by the majority leaders of the United States Senate from among the Members of the United States Senate;

(C) eight appointed by the President as follows:

(i) four from among a list of nominations submitted to the President by the National Governors Association, two of whom shall be representatives of ground water appropriation States and two of whom shall be representatives of ground water riparian States;

(ii) one from among a list of nominations submitted to the President by the National League of Cities and the United States Conference of Mayors;

(iii) one from among a list of nominations submitted to the President by the National Academy of Science;

(iv) one from among a list of nominations submitted to the President by groups, organizations, or associations of industries the activities of which may affect ground water; and

(v) one from among a list of nominations submitted to the President from groups, organizations, or associations of citizens which are representative of persons concerned with pollution and environmental issues and which have participated, at the State or Federal level, in studies, administrative proceedings, or litigation (or any combination thereof) relating to ground water; and

(D) the Director of the Office of Technology Assessment.

A vacancy in the Commission shall be filled in the manner in which the original appointment was made. Appointments may be made under this subsection without regard to section 5311(b) of title 5, United States Code. Not more than three of the six members appointed under subparagraph (A) and not more than two of the four members appointed under subparagraph (B) may be of the same political party. No member appointed under paragraph (C) may be an officer or employee of the Federal Government.

(2) If any member of the Commission who was appointed to the Commission as a Member of the Congress leaves that office, or if any member of the Commission who was appointed from persons who are not officers or employees of any government becomes an officer or employee of a government, he may continue as a member of the Commission for not longer than the ninety-day period beginning on the date he leaves that office or becomes such an officer or employee, as the case may be.

(3) Members shall be appointed for the life of the Commission.

(4)(A) Except as provided in subparagraph (B), members of the Commission shall each be entitled (subject to appropriations provided in advance) to receive the daily equivalent of the maximum annual rate of basic pay in effect for grade GS-18 of the General Schedule for each day (including travel time) during which they are engaged in the actual performance of duties vested in the Commission. While away from their homes or regular places of business in the performance of services for the Commission, members of the Commission shall be allowed travel expenses, including per diem in lieu of a meal allowance, in the same manner as persons employed inter-

mittently in Government service are allowed expenses under section 5703 of title 5 of the United States Code.

(B) Members of the Commission who are Members of the Congress shall receive no additional pay, allowances, or benefits by reason of their service on the Commission.

(5) Five members of the Commission shall constitute a quorum but two may hold hearings.

(6) The Chairman of the Commission shall be appointed by the Speaker of the House of Representatives from among members appointed under paragraph (1)(A) of this subsection and the Vice Chairman of the Commission shall be appointed by the majority leader of the Senate from among members appointed under paragraph (1)(B) of this subsection. The Chairman and the Vice Chairman of the Commission shall serve for the life of the Commission unless they cease to be members of the Commission before the termination of the Commission.

(7) The Commission shall meet at the call of the Chairman or a majority of its members.

(d)(1) The Commission shall have a Director who shall be appointed by the Chairman, without regard to section 5311(b) of title 5, United States Code.

(2) The Chairman may appoint and fix the pay of such additional personnel as the Chairman considers appropriate.

(3) With the approval of the Commission, the Chairman may procure temporary and intermittent services under section 3109(b) of title 5 of the United States Code.

(4) The Commission shall request, and the Chief of Engineers and the Director of the Geological Survey are each authorized to detail on a reimbursable basis, any of the personnel of their respective agencies to the Commission to assist it in carrying out its duties under this section. Upon request of the Commission, the head of any other Federal agency is authorized to detail, on a reimbursable basis, any of the personnel of such agency to the Commission to assist it in carrying out its duties under this section.

(e)(1) The Commission may, for the purpose of carrying out this section, hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence, as the Commission considers appropriate.

(2) Any member or agent of the Commission may, if so authorized by the Commission, take any action which the Commission is authorized to take by this section.

(3) The Commission may use the United States mails in the same manner and under the same conditions as other departments and agencies of the United States.

(4) The Administrator of General Services shall provide to the Commission on a reimbursable basis such administrative support services as the Commission may request.

(5) The Commission may secure directly from any department or agency of the United States information necessary to enable it to carry out this section. Upon request of the Chairman of the Commission, the head of such department or agency shall furnish such information to the Commission.

(f)(1) The Commission shall transmit to the President and each House of the Congress a report not later than October 30, 1986.

The report shall contain a detailed statement of the findings and conclusions of the Commission with respect to each item listed in subsection (b), together with its recommendations for such legislation; and administrative actions, as it considers appropriate.

(2) Not later than one year after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Commission shall complete a preliminary study concerning ground water contamination from hazardous and other solid waste and submit to the President and to the Congress a report containing the findings and conclusions of such preliminary study. The study shall be continued thereafter, and final findings and conclusions shall be incorporated in a separate chapter in the report required under paragraph (1). The preliminary study shall include an analysis of the extent of ground water contamination caused by hazardous and other solid waste, the regions and major water supplies most significantly affected by such contamination, and any recommendations of the Commission for preventive or remedial measures to protect human health and the environment from the effects of such contamination.

(g) The Commission shall cease to exist on January 1, 1987.

(h) Nothing in this section and no recommendation of the Commission shall affect any rights to quantities of water established under State law, interstate compact, or Supreme Court decree.

(i) There is authorized to be appropriated for the fiscal year 1985 through 1987 not to exceed \$7,000,000 to carry out this section.

II.A.1.g

"Sec. 9006.	Federal enforcement.
"Sec. 9007..	Federal facilities.
"Sec. 9008.	State authority.
"Sec. 9009.	Study of underground storage tanks.
Sec. 9010.	Authorization of appropriations.

"CONGRESSIONAL FINDINGS

"Sec. 1002. (a) **SOLID WASTE.**—The Congress finds with respect to solid waste—

"(1) that the continuing technological progress and improvement in methods of manufacture, packaging, and marketing of consumer products has resulted in an ever-mounting increase, and in a change in the characteristics, of the mass material discarded by the purchaser of such products;

"(2) that the economic and population growth of our Nation, and the improvements in the standard of living enjoyed by our population, have required increased industrial production to meet our needs, and have made necessary the demolition of old buildings, the construction of new buildings, and the provision of highways and other avenues of transportation, which, together with related industrial, commercial, and agricultural operations, have resulted in a rising tide of scrap, discarded, and waste materials;

"(3) that the continuing concentration of our population in expanding metropolitan and other urban areas has presented these communities with serious financial, management, intergovernmental, and technical problems in the disposal of solid wastes resulting from the industrial, commercial, domestic, and other activities carried on in such areas;

"(4) that while the collection and disposal of solid wastes should continue to be primarily the function of State, regional, and local agencies, the problems of waste disposal as set forth above have become a matter national in scope and in concern and necessitate Federal action through financial and technical assistance and leadership in the development, demonstration, and application of new and improved methods and processes to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid waste disposal practices.

"(b) **ENVIRONMENT AND HEALTH.**—The Congress finds with respect to the environment and health, that—

"(1) although land is too valuable a national resource to be needlessly polluted by discarded materials, most solid waste is disposed of on land in open dumps and sanitary landfills;

"(2) disposal of solid waste and hazardous waste in or on the land without careful planning and management can present a danger to human health and the environment;

"(3) as a result of the Clean Air Act, the Water Pollution Control Act, and other Federal and State laws respecting public health and the environment, greater amounts of solid waste (in the form of sludge and other pollution treatment residues) have been created. Similarly, inadequate and environmentally unsound practices for the disposal or use of solid waste have created greater amounts of air and water pollution and other problems for the environment and for health;

"(4) open dumping is particularly harmful to health, contaminates drinking water from underground and surface supplies, and pollutes the air and the land;

"(5) the placement of inadequate controls on hazardous waste management will result in substantial risks to human health and the environment;

"(6) if hazardous waste management is improperly performed in the first instance, corrective action is likely to be expensive, complex, and time consuming;

"(7) certain classes of land disposal facilities are not capable of assuring long-term containment of certain hazardous wastes, and to avoid substantial risk to human health and the environment, reliance on land disposal should be minimized or eliminated, and land disposal, particularly landfill and surface impoundment, should be the least favored method for managing hazardous wastes; and

"(8) alternative to existing methods of land disposal must be developed since many of the cities in the United States will be running out of suitable solid waste disposal sites within five years unless immediate action is taken.

"(c) MATERIALS.—The Congress finds with respect to materials, that—

"(1) millions of tons of recoverable material which could be used are needlessly buried each year;

"(2) methods are available to separate usable materials from solid waste; and

"(3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments.

"(d) ENERGY.—The Congress finds with respect to energy, that—

"(1) solid waste represents a potential source of solid fuel, oil, or gas that can be converted into energy;

"(2) the need exists to develop alternative energy sources for public and private consumption in order to reduce our dependence on such sources as petroleum products, natural gas, nuclear and hydroelectric generation; and

"(3) technology exists to produce usable energy from solid waste.

"OBJECTIVES AND NATIONAL POLICY

"Sec. 1003. (a) OBJECTIVES. The objectives of this Act are to promote the protection of health and the environment and to conserve valuable material and energy resources by—

"(1) providing technical and financial assistance to State and local governments and interstate agencies for the development of solid waste management plans (including resource recovery and resource conservation systems) which will promote improved solid waste management techniques (including more effective organizational arrangements), new and improved methods of collection, separation, and recovery of solid waste, and the environmentally safe disposal of nonrecoverable residues;

"(2) providing training grants in occupations involving the design, operation, and maintenance of solid waste disposal systems;

"(3) prohibiting future open dumping on the land and requiring the conversion of existing open dumps to facilities which do not pose a danger to the environment or to health;

"(4) assuring that hazardous waste management practices are conducted in a manner which protects human health and the environment;

"(5) requiring that hazardous waste be properly managed in the first instance thereby reducing the need for corrective action at a future date;

"(6) minimizing the generation of hazardous waste and the land disposal of hazardous waste by encouraging process substitution, materials recovery, properly conducted recycling and reuse, and treatment;

"(7) establishing a viable Federal-State partnership to carry out the purposes of this Act and insuring that the Administrator will, in carrying out the provisions of subtitle C of this Act, give a high priority to assisting and cooperating with States in obtaining full authorization of State programs under subtitle C;

"(8) providing for the promulgation of guidelines for solid waste collection, transport, separation, recovery, and disposal practices and systems;

"(9) promoting a national research and development program for improved solid waste management and resource conservation techniques, more effective organizational arrangements, and new and improved methods of collection, separation, and recovery, and recycling of solid wastes and environmentally safe disposal of nonrecoverable residues;

"(10) promoting the demonstration, construction, and application of solid waste management, resource recovery, and resource conservation systems which preserve and enhance the quality of air, water, and land resources; and

"(11) establishing a cooperative effort among the Federal, State, and local governments and private enterprise in order to recover valuable materials and energy from solid waste.

"(b) NATIONAL POLICY.—The Congress hereby declares it to be the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.

"DEFINITIONS

"Sec. 1004. As used in this Act:

"(1) The term 'Administrator' means the Administrator of the Environmental Protection Agency.

"(2) The term 'construction,' with respect to any project of construction under this Act, means (A) the erection or building of new structures and acquisition of lands or interests therein, or the acquisition, replacement, expansion, remodeling, alteration, modernization, or extension of existing structures, and (B) the acquisition and installation of initial equipment of, or required in connection with, new or newly acquired structures or the expanded, remodeled, altered, modernized or extended part of existing structures (including trucks and other motor vehicles, and tractors, cranes, and other machinery) necessary for the proper utilization and operation of the facility after completion of the project; and includes preliminary planning to determine the economic and engineering feasibility and the public health and safety aspects of the project, the engineering, architectural, legal, fiscal, and economic investigations and studies, and any surveys, designs, plans, working drawings, specifications, and other action necessary for the carrying out of the project, and (C) the inspection and supervision of the process of carrying out the project to completion.

"(2A) The term 'demonstration' means the initial exhibition of a new technology process or practice or a significantly new combination or use of technologies, processes or practices, subsequent to the development stage, for the purpose of proving technological feasibility and cost effectiveness.

"(3) The term 'disposal' means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

"(4) The term 'Federal agency' means any department, agency, or other instrumentality of the Federal Government, and any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

"(5) The term 'hazardous waste' means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may—

"(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
"(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

"(6) The term 'hazardous waste generation' means the act or process of producing hazardous waste.

"(7) The term 'hazardous waste management' means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

"(8) For purposes of Federal financial assistance (other than rural communities assistance), the term 'implementation' does not include the acquisition, leasing, construction, or modification of facilities or equipment or the acquisition, leasing, or improvement of land.

"(9) The term 'intermunicipal agency' means an agency established by two or more municipalities with responsibility for planning or administration of solid waste.

"(10) The term 'interstate agency' means an agency of two or more municipalities in different States, or an agency established by two or more States, with authority to provide for the management of solid wastes and serving two or more municipalities located in different States.

"(11) The term 'long term contract' means, when used in relation to solid waste supply, a contract of sufficient duration to assure the viability of a resource recovery facility (to the extent that such viability depends upon solid waste supply).

"(12) The term 'manifest' means the form used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment, or storage.

"(13) The term 'municipality' (A) means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law, with responsibility for the planning or administration of solid waste management, or an Indian tribe or authorized tribal organization or Alaska Native village or organization, and (B) includes any rural community or unincorporated town or village or any other public entity for which an application for assistance is made by a State or political subdivision thereof.

"(14) The term 'open dump' means any facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 and which is not a facility for disposal of hazardous waste.

"(15) The term 'person' means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

"(16) The term 'procurement item' means any device, good, substance, material, product, or other item whether real or personal property which is the subject of any purchase, barter, or other exchange made to procure such an item.

"(17) The term 'procuring agency' means any Federal agency, or any State agency or agency of a political subdivision of a State which is using appropriated Federal funds for such procurement, or any person contracting with any such agency with respect to work performed under such contract.

"(18) The term 'recoverable' refers to the capability and likelihood of being recovered from solid waste for a commercial or industrial use.

"(19) The term 'recovered material' means waste material and byproducts which have been recovered or diverted from solid waste, but such term does not

include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

"(20) The term 'recovered resources' means material or energy recovered from solid waste.

"(21) The term 'resource conservation' means reduction of the amounts of solid waste that are generated, reduction of overall resource consumption, and utilization of recovered resources.

"(22) The term 'resource recovery' means the recovery of material or energy from solid waste.

"(23) The term 'resource recovery system' means a solid waste management system which provides for collection, separation, recycling, and recovery of solid wastes, including disposal of nonrecoverable waste residues.

"(24) The term 'resource recovery facility' means any facility at which solid waste is processed for the purpose of extracting, converting to energy, or otherwise separating and preparing solid waste for reuse.

"(25) The term 'regional authority' means the authority established or designated under section 4006.

"(26) The term 'sanitary landfill' means a facility for the disposal of solid waste which meets the criteria published under section 4004.

"(26A) The term 'sludge' means any solid, semisolid or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

"(27) The term 'solid waste' means any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

"(28) The term 'solid waste management' means the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

"(29) The term 'solid waste management facility' includes—

"(A) any resource recovery system or component thereof,

"(B) any system, program, or facility for resource conservation, and

"(C) any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid wastes, including hazardous wastes, whether such facility is associated with facilities generating such wastes or otherwise.

"(30) The term 'solid waste planning', 'solid waste management', and 'comprehensive planning' include planning or management respecting resource recovery and resource conservation.

"(31) The term 'State' means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"(32) The term 'State authority' means the agency established or designated under section 4007.

"(33) The term 'storage', when used in connection with hazardous waste, means the containment of hazardous waste, either on a temporary basis or for a

period of years, in such a manner as not to constitute disposal of such hazardous waste.

"(34) The term 'treatment', when used in connection with hazardous waste, means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

"(35) The term 'virgin material' means a raw material, including previously unused copper, aluminum, lead, zinc, iron, or other metal or metal ore, any undeveloped resource that is, or with new technology will become a source of raw materials.

"(36) The term 'used oil' means any oil which has been—

"(A) refined from crude oil,

"(B) used, and

"(C) as a result of such use, contaminated by physical or chemical impurities.

"(37) The term 'recycled oil' means any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes oil which is re-refined, reclaimed, burned, or reprocessed.

"(38) The term 'lubricating oil' means the fraction of crude oil which is sold for purposes of reducing friction in any industrial or mechanical device. Such term includes re-refined oil.

"(39) The term 're-refined oil' means used oil from which the physical and chemical contaminants acquired through previous use have been removed through a refining process.

"GOVERNMENTAL COOPERATION

"Sec. 1005. (a) INTERSTATE COOPERATION.—The provisions of this Act to be carried out by States may be carried out by interstate agencies and provisions applicable to States may apply to interstate regions where such agencies and regions have been established by the respective States and approved by the Administrator. In such case, action required to be taken by the Governor of a State, respecting regional designation shall be required to be taken by the Governor of each of the respective States with respect to so much of the interstate region as is within the jurisdiction of that State.

"(b) CONSENT OF CONGRESS TO COMPACTS.—The consent of the Congress is hereby given to two or more states to negotiate and enter into agreements or compacts, not in conflict with any law or treaty of the United States, for—

"(1) cooperative effort and mutual assistance for the management of solid waste or hazardous waste (or both) and the enforcement of their respective laws relating thereto, and

"(2) the establishment of such agencies, joint or otherwise, as they deem desirable for making effective such agreements or compacts.

No such agreement or compact shall be binding or obligatory upon any State a party thereto unless it is agreed upon by all parties to the agreement and until it has been approved by the Administrator and the Congress.

"APPLICATION OF ACT AND INTEGRATION WITH OTHER ACTS

"Sec. 1006. (a) APPLICATION OF ACT.—Nothing in this Act shall be construed to apply to (or to authorize any State, interstate, or local authority to regulate) any activity or substance which is subject to the Federal Water Pollution Control Act (33 U.S.C. 1151 and following), the Safe Drinking Water Act (42 U.S.C. 300f and following), the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 and following), or the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following) except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.

"(b) INTEGRATION WITH OTHER ACTS.—

(1) The Administrator shall integrate all provisions of this Act for purposes of administration and enforcement and shall avoid duplication, to the maximum extent practicable, with the appropriate provisions of the Clean Air Act (42 U.S.C. 1857 and following), the Federal Water Pollution Control Act (33 U.S.C. 1151 and following), the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 and following), the Safe Drinking Water Act (42 U.S.C. 300f and following), the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 and following) and such other Acts of Congress as grant regulatory authority to the Administrator. Such integration shall be effected only to the extent that it can be done in a manner consistent with the goals and policies expressed in this Act and in other acts referred to in this subsection.

"(2)(A) As promptly as practicable after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a report describing—

"(i) if the current data and information available on emissions of polychlorinated dibenzo-p-dioxins from resource recovery facilities burning municipal solid waste;

"(ii) any significant risks to human health posed by these emissions; and

"(iii) operating practices appropriate for controlling these emissions.

"(B) Based on the report under subparagraph (A) and on any future information on such emissions, the Administrator may publish advisories or guidelines regarding the control of dioxin emissions from such facilities. Nothing in this paragraph shall be construed to preempt or otherwise affect the authority of the Administrator to promulgate any regulations under the Clean Air Act regarding emissions of polychlorinated dibenzo-p-dioxins.

"(3) Notwithstanding any other provisions of law, in developing solid waste plans, it is the intention of this Act that in determining the size of a waste-to-energy facility, adequate provisions shall be given to the present and reasonably anticipated future needs, including those needs created by thorough implementation of section 6002(h), of the recycling and resource recovery interests within the area encompassed by the solid waste plan.

"(c) INTEGRATION WITH THE SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977.—

"(1) No later than 90 days after the date of enactment of the Solid Waste Disposal Act Amendments of 1980, the Administrator shall review any regulations applicable to the treatment, storage, or disposal of any coal mining wastes or overburden promulgated by the Secretary of the Interior under the Surface Mining and Reclamation Act of 1977. If the Administrator determines that any requirement of final regulations promulgated under any section of subtitle C

relating to mining wastes or overburden is not adequately addressed in such regulations promulgated by the Secretary, the Administrator shall promptly transmit such determination, together with suggested revisions and supporting documentation, to the Secretary.

"(2) The Secretary of the Interior shall have exclusive responsibility for carrying out any requirement of subtitle C of this Act with respect to coal mining wastes or overburden for which a surface coal mining and reclamation permit is issued or approved under the Surface Mining Control and Reclamation Act of 1977. The Secretary shall, with the concurrence of the Administrator, promulgate such regulations as may be necessary to carry out the purposes of this subsection and shall integrate such regulations with regulations promulgated under the Surface Mining Control and Reclamation Act of 1977.

"FINANCIAL DISCLOSURE

"Sec. 1007. (a) STATEMENT.—Each officer or employee of the Administrator who

"(1) performs any function or duty under this Act; and

"(2) has any known financial interest in any person who applies for or receives financial assistance under this Act

shall, beginning on February 1, 1977, annually file with the Administrator a written statement concerning all such interests held by such officer or employee during the preceding calendar year. Such statement shall be available to the public.

"(b) ACTION BY ADMINISTRATOR.—The Administrator shall—

"(1) act within ninety days after the date of enactment of this Act—

"(A) to define the term 'known financial interest' for purposes of subsection (a) of this section; and

"(B) to establish the methods by which the requirement to file written statements specified in subsection (a) of this section will be monitored and enforced, including appropriate provision for the filing by such officers and employees of such statements and the review by the Administrator of such statements; and

"(2) report to the Congress on June 1, 1978, and of each succeeding calendar year with respect to such disclosures and the actions taken in regard thereto during the preceding calendar year.

"(c) EXEMPTION.—In the rules prescribed under subsection (b) of this section, the Administrator may identify specific positions within the Environmental Protection Agency which are of a nonpolicy-making nature and provide that officers or employees occupying such positions shall be exempt from the requirements of this section.

"(d) PENALTY.—Any officer or employee who is subject to, and knowingly violates this section shall be fined not more than \$2,500 or imprisoned not more than one year, or both.

"SOLID WASTE MANAGEMENT INFORMATION AND GUIDELINES

"Sec. 1008. (a) GUIDELINES.—Within one year of enactment of this section, and from time to time thereafter, the Administrator shall, in cooperation with appropriate Federal, State, municipal, and inter-municipal agencies, and in consultation with other interested persons, and after public hearings, develop and publish suggested guidelines for solid waste management. Such suggested guidelines shall—

"(1) provide a technical and economic description of the level of performance that can be attained by various available solid waste management practices (including operating practices) which provide for the protection of public health and the environment;

"(2) not later than two years after the enactment of this section, describe levels of performance, including appropriate methods and degrees of control, that provide at a minimum for (A) protection of public health and welfare; (B) protection of the quality of ground waters and surface waters from leachates; (C) protection of the quality of surface waters from runoff through compliance with effluent limitations under the Federal Water Pollution Control Act, as amended; (D) protection of ambient air quality through compliance with new source performance standards or requirements of air quality implementation plans under the Clear Air Act, as amended; (E) disease and vector control; (F) safety; and (G) esthetics; and

"(3) provide minimum criteria to be used by the States to define those solid waste management practices which constitute the open dumping of solid waste or hazardous waste and are to be prohibited under subtitle D of this Act.

Where appropriate, such suggested guidelines also shall include minimum information for use in deciding the adequate location, design, and construction of facilities associated with solid waste management practices, including the consideration of regional, geographic, demographic, and climatic factors.

"(b) NOTICE.—The Administrator shall notify the Committee on Public Works of the Senate and the Committee on Interstate and Foreign Commerce of the House of Representatives a reasonable time before publishing any suggested guidelines or proposed regulations under this Act, of the content of such proposed suggested guidelines or proposed regulations under this Act.

**"SUBTITLE B—OFFICE OF SOLID WASTE; AUTHORITIES
OF THE ADMINISTRATOR**

"OFFICE OF SOLID WASTE AND INTERAGENCY COORDINATING COMMITTEE

"Sec. 2001. (a) OFFICE OF SOLID WASTE.—The Administrator shall establish within the Environmental Protection Agency an Office of Solid Waste (hereinafter referred to as the 'Office') to be headed by an Assistant Administrator of the Environmental Protection Agency. The duties and responsibilities (other than duties and responsibilities relating to research and development) of the Administrator under this Act (as modified by applicable reorganization plans) shall be carried out through the Office.

"(b) INTERAGENCY COORDINATING COMMITTEE.—

"(1) There is hereby established an Interagency Coordinating Committee on Federal Resource Conservation and Recovery Activities which shall have the responsibility for coordinating all activities dealing with resource conservation and recovery from solid waste carried out by the Environmental Protection Agency, the Department of Energy, the Department of Commerce, and all other Federal agencies which conduct such activities pursuant to this or any other Act. For purposes of this subsection, the term 'resource conservation and recovery activities' shall include, but not be limited to, all research, development and demonstration projects on resource conservation or energy, or material, recovery from solid waste, and all technical or financial assistance for State or local planning for, or implementation of, projects related to resource conservation or energy or material, recovery from solid waste. The committee shall be chaired by the Administrator of the Environmental Protection Agency or such person as the Administrator may designate. Members of the Committee shall include representatives of the Department of Energy, the Department of Commerce, the Department of the Treasury, and each other Federal agency which the Administrator determines to have programs or responsibilities affecting resource conservation or recovery.

"(2) The Interagency Coordinating Committee shall include oversight of the implementation of

"(A) the May 1979 Memorandum of Understanding on Energy Recovery from Municipal Solid Waste between the Environmental Protection Agency and the Department of Energy;

"(B) the May 30, 1978, Interagency Agency Agreement between the Department of Commerce and the Environmental Protection Agency on the Implementation of the Resource Conservation and Recovery Act; and

"(C) any subsequent agreements between these agencies or other Federal agencies which address Federal resource recovery or conservation activities.

"(3) The Interagency Coordinating Committee shall submit to the Congress by March 1, 1981, and on March 1 each year thereafter, a five-year action plan for Federal resource conservation or recovery activities which shall identify means and propose programs to encourage resource conservation or material and energy recovery and increase private municipal investment in resource conservation or recovery systems, especially those which provide for material conservation or recovery as well as energy conservation or recovery. Such plan shall describe, at a minimum, a coordinated and non duplicatory plan for resource recovery and conservation activities for the Environmental Protection Agency, the Department of Energy, the Department of Commerce, and all other Federal agencies which conduct such activities.

"AUTHORITIES OF ADMINISTRATOR

"Sec. 2002. (a) **AUTHORITIES.**—In carrying out this Act, the Administrator is authorized to—

"(1) prescribe, in consultation with Federal, State, and regional authorities, such regulations as are necessary to carry out his functions under this Act;

"(2) consult with or exchange information with other Federal agencies undertaking research, development, demonstration projects, studies, or investigations relating to solid waste;

"(3) provide technical and financial assistance to states or regional agencies in the development and implementation of solid waste plans and hazardous waste management programs;

"(4) consult with representatives of science, industry, agriculture, labor, environmental protection and consumer organizations, and other groups, as he deems advisable;

"(5) utilize the information, facilities, personnel and other resources of Federal agencies, including the National Bureau of Standards and the National Bureau of the Census, on a reimbursable basis, to perform research and analyses and conduct studies and investigations related to resource recovery and conservation and to otherwise carry out the Administrator's functions under this Act, and;

"(6) to delegate to the Secretary of Transportation the performance of any inspection or enforcement function under this Act relating to the transportation of hazardous waste where such delegation would avoid unnecessary duplication of activity and would carry out the objectives of this Act and of the Hazardous Materials Transportation Act.

"(b) **REVISION OF REGULATIONS.**—Each regulation promulgated under this Act shall be reviewed and, where necessary, revised not less frequently than every three years.

"(c) **CRIMINAL INVESTIGATIONS.**—In carrying out the provisions of this Act, the Administrator, and duly-designated agents and employees of the Environmental Protection Agency, are authorized to initiate and conduct investigations under the criminal provisions of this Act, and to refer the results of these investigations to the Attorney General for prosecution in appropriate cases.

"RESOURCE RECOVERY AND CONSERVATION PANELS

"Sec. 2003. The Administrator shall provide teams of personnel, including Federal, State, and local employees or contractors (hereinafter referred to as 'Resource Conservation and Recovery Panels') to provide Federal agencies, States and local governments upon request with technical assistance on solid waste management, resource recovery, and resource conservation. Such teams shall include technical, marketing, financial, and institutional specialists, and the services of such teams shall be provided without charge to States or local governments.

[Editor's note: Public Law 97-272, an appropriations bill for the Department of Housing and Urban Development and independent agencies, provides the following concerning funds for EPA compliance activities:

ABATEMENT, CONTROL AND COMPLIANCE

- abatement, control and compliance activities, \$369,075,000, to remain until September 30, 1984: Provided, That none of these funds may be expended for the Resource Conservation and Recovery Panels established under section 4008(a)(2) or 4009 of the Resource Conservation and Recovery Act, as amended (42 U.S.C. 6913) or for grants to State, regional, local and interstate agencies in accordance with subtitle D of the Solid Waste Disposal Act, as amended, other than section 4008(a)(2) or 4009....]

GRANTS FOR DISCARDED TIRE DISPOSAL

The Secretary shall make available grants equal to 50 percent of the cost of shredding discarded tires in accordance with the regulations promulgated by the Administrator of the Environmental Protection Agency.

"GRANTS FOR DISCARDED TIRE DISPOSAL

"(b) AUTHORIZATION.—There is authorized to be appropriated \$750,000 for each of the fiscal years 1978 and 1979 to carry out this section.

"LABELING OF CERTAIN OIL

"(b) AUTHORIZATION.—There shall be authorized for the fiscal years 1978 and 1979 to carry out this section—

"LABELING OF CERTAIN OIL

"Sec. 2005. For purposes of any provision of law which requires the labeling of commodities, lubricating oil shall be treated as lawfully labeled only if it bears the following statement, prominently displayed:

"DON'T POLLUTE—CONSERVE RESOURCES; RETURN USED OIL TO COLLECTION CENTERS."

05. For purposes of this regulation, the term "oil" shall be treated as including any substance which is used as a lubricating oil and which is not otherwise exempted from the requirements of this regulation, prominently displayed:

"DON'T POLLUTE—CONSERVE RESOURCES; RETURN USED OIL TO COLLECTION CENTERS."

ANNUAL REPORT

"ANNUAL REPORT

"DON'T POLLUTE—
OIL TO COLLECTION
"ANNUAL REPORT
"Sec. 2006. The Administrator shall transmit to the Congress and the President, not later than ninety days after the end of each fiscal year, a comprehensive and detailed report on all activities of the Office during the preceding fiscal year. Each such report shall include—
(1) a statement of specific and detailed objectives for the activities and conducted and assisted under this Act;
(2) the Administrator's conclusions as to the effectiveness of the stated objectives and the purposes of the program; and
(3) a statement of the progress made in attaining the stated objectives and the purposes of the program, including the Administrator's conclusions as to the effectiveness of the program in attaining the stated objectives and the purposes of the program.

(1) a statement of specific and detailed programs conducted and assisted under this Act;

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- "(1) a statement of specific and detailed objectives for the
programs conducted and assisted under this Act;
- "(2) statements of the Administrator's conclusions as to the effectiveness of
such activities and programs in meeting the stated objectives and the purposes of
this Act, measured through the end of such fiscal year;
- "(3) a summary of outstanding solid waste problems confronting the
in order of priority;
with respect to such legislation which the Admin
assist in solving problems respecting sol

(1) a statement of special programs conducted and assisted under this Act, measured through the end of such fiscal year;
 (2) statements of the Administrator's conclusions such activities and programs in meeting the stated objectives and the problems confronting the Administrator, in order of priority;
 (3) a summary of outstanding solid waste problems confronting the Administrator, in order of priority;
 (4) recommendations with respect to such legislation which the Administrator deems necessary or desirable to assist in solving problems respecting solid waste;

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- "(5) all other information required to be submitted to the Congress pursuant to any other provision of this Act; and
- "(6) the Administrator's plans for activities and programs respecting solid waste during the next fiscal year.

"GENERAL AUTHORIZATION

"Sec. 2007. (a) GENERAL ADMINISTRATION.—There are authorized to be appropriated to the Administrator for the purpose of carrying out the provision of this Act, \$35,000,000 for the fiscal year ending September 30, 1977, \$ 38,000,000 for the fiscal year ending September 30, 1978, \$42,000,000 for the fiscal year ending September 30, 1979, \$70,000,000 for the fiscal year ending September 30, 1980, \$80,000,000 for the fiscal year ending September 30, 1981, \$80,000,000 for the fiscal year ending September 30, 1982, \$70,000,000 for the fiscal year ending September 30, 1985, \$80,000,000 for the fiscal year ending September 30, 1986, \$80,000,000 for the fiscal year ending September 30, 1987, and \$80,000,000 for the fiscal year 1988.

"(b) RESOURCE RECOVERY AND CONSERVATION PANELS.—Not less than 20 percent of the amount appropriated under subsection (a), or \$5,000,000 per fiscal year, whichever is less, shall be used only for purposes of Resource Recovery and Conservation Panels established under section 2003 (including travel expenses incurred by such panels in carrying out their functions under this Act).

"(c) HAZARDOUS WASTE.—Not less than 30 percent of the amount appropriated under subsection (a) shall be used only for purposes of carrying out subtitle C of this Act (relating to hazardous waste) other than section 3011.

"(d) STATE AND LOCAL SUPPORT.—Not less than 25 per centum of the total amount appropriated under this title, up to the amount authorized in section 4008(a)(1), shall be used only for purposes of support to State, regional, local, and interstate agencies in accordance with subtitle D of this Act other than section 4008(a)(2) or 4009.

"(e) CRIMINAL INVESTIGATORS.—There is authorized to be appropriated to the Administrator \$3,246,000 for the fiscal year 1985, \$2,408,300 for the fiscal year 1986, \$2,529,000 for the fiscal year 1987, and \$2,529,000 for the fiscal year 1988 to be used—

"(1) for additional officers or employees of the Environmental Protection Agency authorized by the Administrator to conduct criminal investigations (to investigate, or supervise the investigation of, any activity for which a criminal penalty is provided) under this Act; and

"(2) for support costs for such additional officers or employees.

"(f) UNDERGROUND STORAGE TANKS.—

(1) There are authorized to be appropriated to the Administrator for the purpose of carrying out the provisions of subtitle I (relating to regulation of underground storage tanks), \$10,000,000 for each of the fiscal years 1985 through 1988.

"(2) There is authorized to be appropriated \$25,000,000 for each of the fiscal years 1985 through 1988 to be used to make grants to the States for purposes of assisting the States in the development and implementation of approved State underground storage tank release detection, prevention, and correction programs under subtitle I."

"OFFICE OF OMBUDSMAN

"Sec. 2008. (a) ESTABLISHMENT; FUNCTIONS.—The Administrator shall establish an Office of Ombudsman, to be directed by an Ombudsman. It shall be the function of the Office of Ombudsman to receive individual complaints, grievances, requests for information submitted by any person with respect to any program or requirement under this Act.

"(b) AUTHORITY TO RENDER ASSISTANCE.—The Ombudsman shall render assistance with respect to the complaints, grievances, and requests submitted to the Office of Ombudsman, and shall make appropriate recommendations to the Administrator.

"(c) EFFECT ON PROCEDURES FOR GRIEVANCES, APPEALS, OR ADMINISTRATIVE MATTERS.—The establishment of the Office of Ombudsman shall not affect any procedures for grievances, appeals, or administrative matters in any other provision of this Act, any other provision of law, or any Federal regulation.

"(d) TERMINATION.—The Office of the Ombudsman shall cease to exist 4 years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"SUBTITLE C—HAZARDOUS WASTE MANAGEMENT

"IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

6 "Sec. 3001. (a) CRITERIA FOR IDENTIFICATION OR LISTING.—Not later than eighteen months after the date of the enactment of this Act, the Administrator shall, after notice and opportunity for public hearing, and after consultation with appropriate Federal and State agencies, develop and promulgate criteria for identifying the characteristics of hazardous waste, and for listing hazardous waste, which should be subject to the provisions of this subtitle, taking into account toxicity, persistence, and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics. Such criteria shall be revised from time to time as may be appropriate.

"(b) IDENTIFICATION AND LISTING.—

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"(1) Not later than eighteen months after the date of enactment of this section, and after notice and opportunity for public hearing, the Administrator shall promulgate regulations identifying the characteristics of hazardous waste, and listing particular hazardous wastes (within the meaning of section 1004(5), which shall be subject to the provisions of this subtitle. Such regulations shall be based on the criteria promulgated under subsection (a) and shall be revised from time to time thereafter as may be appropriate. The Administrator, in cooperation with the Agency for Toxic Substances and Disease Registry and the National Toxicology Program, shall also identify or list those hazardous wastes which shall be subject to the provisions of this subtitle solely because of the presence in such wastes of certain constituents (such as identified carcinogens, mutagens, or teratogens) at levels in excess of levels which endanger health.

"(2)(A) Notwithstanding the provisions of paragraph (1) of this subsection, drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy shall be subject only to existing State or Federal regulatory programs in lieu of subtitle C until at least 24 months after the date of enactment of the Solid Waste Disposal Act Amendments of 1980 and after promulgation of the regulations in accordance with subparagraphs (B) and (C) of this paragraph. It is the sense of the Congress that such State or Federal programs should include, for waste disposal sites which are to be closed, provisions requiring at least the following:

"(i) The identification through surveying, platting, or other measures, together with recordation of such information on the public record, so as to assure that the location where such wastes are disposed of can be located in the future; except however, that no such surveying, platting, or other measure identifying the location of a disposal site for drilling fluids and associated wastes shall be required if the distance from the disposal site to the surveyed or platted location to the associated well is less than two hundred linear feet; and

(ii) A chemical and physical analysis of a produced water and a composition of a drilling fluid suspected to contain a hazardous material, with such information to be acquired prior to closure and to be placed on the public record.

"(B) Not later than six months after completion and submission of the study required by section 8002(m) of this Act, the Administrator shall, after public hearings and opportunity for comment, determine either to promul-

gate regulations under this subtitle for drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy or that such regulations are unwarranted. The Administrator shall publish his decision in the Federal Register accompanied by an explanation and justification of the reasons for it. In making the decision under this paragraph, the Administrator shall utilize the information developed or accumulated pursuant to the study required under section 8002(m).

"(C) The Administrator shall transmit his decision, along with any regulations, if necessary, to both Houses of Congress. Such regulations shall take effect only when authorized by Act of Congress.

"(3)(A) Notwithstanding the provisions of paragraph (1) of this subsection, each waste listed below shall, except as provided in subparagraph (B) of this paragraph, be subject only to regulation under other applicable provisions of Federal or State law in lieu of this subtitle until at least six months after the date of submission of the applicable study required to be conducted under subsection (f), (n), (o), or (p) of section 8002 of this Act and after promulgation of regulations in accordance with subparagraph (C) of this paragraph:

"(i) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

"(ii) Solid waste from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore.

"(iii) Cement kiln dust waste.

"(B)(i) Owners and operators of disposal sites for wastes listed in subparagraph (A) may be required by the Administrator, through regulations prescribed under authority of section 2002 of this Act—

"(I) as to disposal sites for such wastes which are to be closed, to identify the locations of such sites through surveying, platting, or other measures, together with recordation of such information on the public record, to assure that the locations where such wastes are disposed of are known and can be located in the future, and

"(II) to provide chemical and physical analysis and composition of such wastes, based on available information, to be placed on the public record.

"(ii)(X) In conducting any study under subsection (f), (n), (o), or (p), of section 8002 of this Act, any officer, employee, or authorized representative of the Environmental Protection Agency, duly designated by the Administrator, is authorized, at reasonable times and as reasonably necessary for the purposes of such study, to enter any establishment where any waste subject to such study is generated, stored, treated, disposed of, or transported from; to inspect, take samples, and conduct monitoring and testing; and to have access to and copy records relating to such waste. Each such inspection shall be commenced and completed with reasonable promptness. If the officer, employee, or authorized representative obtains any samples prior to leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the sample obtained and requested a portion of each such sample equal in volume or weight to the portion retained. If any analysis is made of such samples, or monitoring and testing performed, a copy of the results shall be furnished promptly to the owner, operator, or agent in charge.

"(II) Any records, reports, or information obtained from any person under subclause (I) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof, to which the Administrator has access under this subparagraph if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, the Administrator shall consider such information or particular portion thereof confidential in accordance with the purposes of that section, except that such record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act. Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subparagraph shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

"(iii) The Administrator may prescribe regulations, under the authority of this Act, to prevent radiation exposure which presents an unreasonable risk to human health from the use in construction or land reclamation (with or without revegetation) of (I) solid waste from the extraction, beneficiation, and processing of phosphate rock or (II) overburden from the mining of uranium ore.

"(iv) Whenever on the basis of any information the Administrator determines that any person is in violation of any requirement of this subparagraph, the Administrator shall give notice to the violator of his failure to comply with such requirement. If such violation extends beyond the thirtieth day after the Administrator's notification, the Administrator may issue an order requiring compliance within a specified time period or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

"(C) not later than six months after the date of submission of the applicable study required to be conducted under subsection (f), (n), (o), or (p), of section 8002 of this Act, the Administrator shall, after public hearings and opportunity for comment, either determine to promulgate regulations under this subtitle for each waste listed in subparagraph (A) of this paragraph or determine that such regulations are unwarranted. The Administrator shall publish his determination, which shall be based on information developed or accumulated pursuant to such study, public hearings, and comment, in the Federal Register accompanied by an explanation and justification of the reasons for it.

"(c) PETITION BY STATE GOVERNOR.—At any time after the date eighteen months after the enactment of this title, the Governor of any State may petition the Administrator to identify or list a material as a hazardous waste. The Administrator shall act upon such petition within ninety days following his receipt thereof and shall notify the Governor of such action. If the Administrator denies such petition because of financial considerations, in providing such notice to the Governor, he shall include a statement concerning such considerations.

"(d) SMALL QUANTITY GENERATOR WASTE.—

"(1) By March 31, 1986, the Administrator shall promulgate standards under sections 3002, 3003, and 3004 for hazardous waste generated by a generator in a

al quantity of hazardous waste generated by a generator in a total quantity of hazardous waste greater than 100 kilograms but less than 1,000 kilograms during a calendar month.

"(2) The standards referred to in paragraph (1), including standards applicable to the legitimate use, reuse, recycling, and reclamation of such wastes, may vary from the standards applicable to hazardous waste generated by larger quantity generators, but such standards shall be sufficient to protect human health and the environment.

"(3) Not later than 270 days after the enactment of the Hazardous and Solid Waste Amendments of 1984 any hazardous waste which is part of a total quantity generated by a generator generating greater than 100 kilograms but less than 1,000 kilograms during one calendar month and which is shipped off the premises on which such waste is generated shall be accompanied by a copy of the Environmental Protection Agency Uniform Hazardous Waste Manifest form signed by the generator. This form shall contain the following information:

- "(A) the name and address of the generator of the waste
- "(B) the United States Department of Transportation description of the waste, including the proper shipping name, hazard class, and identification number (UN/NA), if applicable;
- "(C) the number and type of containers;
- "(D) the quantity of waste being transported; and
- "(E) the name and address of the facility designated to receive the waste.

If subparagraph (B) is not applicable, in lieu of the description referred to in such subparagraph (B), the form shall contain the Environmental Protection Agency identification number, or a generic description of the waste, or a description of the waste by hazardous waste characteristic. Additional requirements related to the manifest form shall apply only if determined necessary by the Administrator to protect human health and the environment.

"(4) The Administrator's responsibility under this subtitle to protect human health and the environment may require the promulgation of standards under this subtitle for hazardous wastes which are generated by any generator who does not generate more than 100 kilograms of hazardous waste in a calendar month.

"(5) Until the effective date of standards required to be promulgated under paragraph (1), any hazardous waste identified or listed under section 3001 generated by any generator during any calendar month in a total quantity greater than 100 kilograms but less than 1,000 kilograms, which is not treated, stored, or disposed of at a hazardous waste treatment, storage, or disposal facility with a permit under section 3005, shall be disposed of only in a facility which is permitted, licensed, or registered by a State to manage municipal or industrial solid waste.

"(6) Standards promulgated as provided in paragraph (1) shall, at a minimum, require that all treatment, storage, or disposal of hazardous wastes generated by generators referred to in paragraph (1) shall occur at a facility with interim status or a permit under this subtitle, except that onsite storage of hazardous waste generated by a generator generating a total quantity of hazardous waste greater than 100 kilograms, but less than 1,000 kilograms during a calendar month, may occur without the requirement of a permit for up to 180 days. Such onsite storage may occur without the requirement of a permit for not more than 6,000 kilograms for up to 270 days if such generator must ship or haul such waste over 200 miles.

"(7)(A) Nothing in this subsection shall be construed to affect or impair the validity of regulations promulgated by the Secretary of

Transportation pursuant to the Hazardous Materials Transportation Act.

(B) Nothing in this subsection shall be construed to affect, modify, or render invalid any requirements in regulations promulgated prior to January 1, 1983 applicable to any acutely hazardous waste identified or listed under section 3001 which is generated by any generator during any calendar month in a total quantity less than 1,000 kilograms.

"(8) Effective March 31, 1986, unless the Administrator promulgates standards as provided in paragraph (1) of this subsection prior to such date, hazardous waste generated by any generator in a total quantity greater than 100 kilograms but less than 1,000 kilograms during a calendar month shall be subject to the following requirements until the standards referred to in paragraph (1) of this subsection have become effective:

"(A) the notice requirements of paragraph (3) of this subsection shall apply and in addition, the information provided in the form shall include the name of the waste transporters and the name and address of the facility designated to receive the waste;

"(B) except in the case of the onsite storage referred to in paragraph (6) of this subsection, the treatment, storage, or disposal of such waste shall occur at a facility with interim status or a permit under this subtitle;

"(C) generators of such waste shall file manifest exception reports as required of generators producing greater amounts of hazardous waste per month except that such reports shall be filed by January 31, for any waste shipment occurring in the last half of the preceding calendar year, and by July 31, for any waste shipment occurring in the first half of the calendar year; and

"(D) generators of such waste shall retain for 3 years a copy of the manifest signed by the designated facility that has received the waste. Nothing in this paragraph shall be construed as a determination of the standards appropriate under paragraph (1).

"(9) The last sentence of section 3010(b) shall not apply to regulations promulgated under this subsection.

[Ed. Note: Section 2(j) of the Hazardous and Solid Waste Amendments of 1984 authorizes the following appropriation:

"There is authorized to be appropriated for purposes of section 221(b) of this Act (entitled "Small Quantity Generator Waste") \$500,000 for each of the fiscal years 1985 through 1987."

"(e) SPECIFIED WASTES.—

"(1) Not later than 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, where appropriate, list under subsection (b)(1), additional wastes containing chlorinated dioxins or chlorinated-dibenzofurans. Not later than one year after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, where appropriate, list under subsection (b)(1) wastes containing remaining halogenated dioxins and halogenated-dibenzofurans.

"(2) Not later than 15 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall make a determination of whether or not to list under subsection (b)(1) the following wastes: Chlorinated Aliphatics, Dioxin, Dimethyl Hydrazine, TDO (toluene diisocyanate), Carbamates, Bromacil, Linuron, Organo-bromines, solvents, refining wastes,

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inated aromatics, dyes and pigments, inorganic chemical industry wastes, um batteries, coke byproducts, paint production wastes, and coal slurry pipeline uent.

DELISTING PROCEDURES.—

"(1) When evaluating a petition to exclude a waste generated at a particular facility from listing under this section, the Administrator shall consider factors including additional constituents) other than those for which the waste was listed if the Administrator has a reasonable basis to believe that such additional factors could cause the waste to be a hazardous waste. The Administrator shall provide notice and opportunity for comment on these additional factors before granting or denying such petition.

"(2)(A) To the maximum extent practicable the Administrator shall publish in the Federal Register a proposal to grant or deny a petition referred to in paragraph (1) within 12 months after receiving a complete application to exclude a waste generated at a particular facility from being regulated as a hazardous waste and shall grant or deny such a petition within 24 months after receiving a complete application.

"(B) The temporary granting of such a petition prior to the enactment of the Hazardous and Solid Waste Amendments of 1984 without the opportunity for public comment and the full consideration of such comments shall not continue for more than 24 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984. If a final decision to grant or deny such a petition has not been promulgated after notice and opportunity for public comment within the time limit prescribed by the preceding sentence, any such temporary granting of such petition shall cease to be in effect.

"(g) EP TOXICITY.—Not later than 28 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 the Administrator shall examine the deficiencies of the extraction procedure toxicity characteristic of the leaching potential of wastes and make changes in the extraction procedure toxicity characteristic, including changes in the leaching media, as are necessary to insure that it accurately predicts the leaching potential of wastes which pose a threat to human health and the environment when mismanaged.

[Ed. Note: Sections 222(a) and 223(a) of the Hazardous and Solid Waste Amendment of 1984 add a duplicate subsection (g).]

"(g) CLARIFICATION OF HOUSEHOLD WASTE EXCLUSION.—A resource recovery facility recovering energy from the mass burning of municipal solid waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation under this subtitle if—

"(1) such facility—

"(A) receives and burns only—

"(i) household waste from single and multiple dwellings, hotels, motels, and other residential sources, and

"(ii) solid waste from commercial or industrial sources that does not contain hazardous waste identified or listed under this section, and

"(B) does not accept hazardous wastes identified or listed under this section, and

"(2) the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure

that hazardous wastes are not received at or burned in such facility.

"(h) **ADDITIONAL CHARACTERISTICS.**—Not later than 2 years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate regulations under this section identifying additional characteristics of hazardous waste, including measures or indicators of toxicity.

"STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

"Sec. 3002. (a) **IN GENERAL.**—Not later than eighteen months after the date of the enactment of this section, and after notice and opportunity for public hearings and after consultation with appropriate Federal and State agencies, the Administrator shall promulgate regulations establishing such standards, applicable to generators of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. Such standards shall establish requirements respecting—

"(1) recordkeeping practices that accurately identify the quantities of such hazardous waste generated, the constituents thereof which are significant in quantity or in potential harm to human health or the environment, and the disposition of such wastes;

"(2) labeling practices for any containers used for the storage, transport, or disposal of such hazardous waste such as will identify accurately such waste;

"(3) use of appropriate containers for such hazardous waste;

"(4) furnishing of information on the general chemical composition of such hazardous waste to persons transporting, treating, storing, or disposing of such wastes;

"(5) use of a manifest system and any other reasonable means necessary to assure that all such hazardous waste generated is designated for treatment, storage, or disposal in, and arrives at treatment, storage, or disposal facilities (other than facilities on the premises where the waste is generated) for which a permit has been issued as provided in this subtitle, or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052); and

"(6) submission of reports to the Administrator (or the State agency in any case in which such agency carries out a permit program pursuant to this subtitle) at least once every 2 years, setting out—

"(A) the quantities and nature of hazardous waste identified or listed under this subtitle that he has generated during the year;

"(B) the disposition of all hazardous waste reported under subparagraph (A);

"(C) the efforts undertaken during the year to reduce the volume and toxicity of waste generated; and

"(D) the changes in volume and toxicity of waste actually achieved during the year in question in comparison with previous years, to the extent such information is available for years prior to enactment of the Hazardous and Solid Waste Amendments of 1984.

"(b) **WASTE MINIMIZATION.**—Effective September 1, 1985, the manifest required by subsection (a)(5) shall contain a certification by the generator that—

"(1) the generator of the hazardous waste has a program in place to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

"(2) the proposed method of treatment, storage, or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment.

"STANDARDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTE

"Sec. 3003. (a) STANDARDS.—Not later than eighteen months after the date of enactment of this section, and after opportunity for public hearings, the Administrator, after consultation with the Secretary of Transportation and the States, shall promulgate regulations establishing such standards, applicable to transporters of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. Such standards shall include but need not be limited to requirements respecting—

- "(1) recordkeeping concerning such hazardous waste transported, and their source and delivery points;
- "(2) transportation of such waste only if properly labeled;
- "(3) compliance with the manifest system referred to in section 3002(5); and
- "(4) transportation of all such hazardous waste only to the hazardous waste treatment, storage, or disposal facilities which the shipper designates on the manifest form to be a facility holding a permit issued under this subtitle, or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052).

"(b) COORDINATION WITH REGULATIONS OF SECRETARY OF TRANSPORTATION.—In case of any hazardous waste identified or listed under this subtitle which is subject to the Hazardous Materials Transportation Act (88 Stat. 2156; 49 U.S.C. 1801 and following), the regulations promulgated by the Administrator under this section shall be consistent with the requirements of such Act and the regulations thereunder. The Administrator is authorized to make recommendations to the Secretary of Transportation respecting the regulations of such hazardous waste under the Hazardous Materials Transportation Act and for addition of materials to be covered by such Act.

"(c) FUEL FROM HAZARDOUS WASTE.—Not later than 2 years after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, and after opportunity for public hearing, the Administrator shall promulgate regulations establishing standards, applicable to transporters of fuel produced (1) from any hazardous waste identified or listed under section 3001, or (2) from any hazardous waste identified or listed under section 3001 and any other material, as may be necessary to protect human health and the environment. Such standards may include any of the requirements set forth in paragraphs (1) through (4) of subsection (a) as may be appropriate.

"STANDARDS APPLICABLE TO OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

"Sec. 3004. (a) IN GENERAL.—Not later than eighteen months after the date of enactment of this section, and after opportunity for public hearings and after consultation with appropriate Federal and State agencies, the Administrator shall promulgate regulations establishing such performance standards, applicable to owners and operators of facilities for the treatment, storage, or disposal of hazardous waste identified or listed under this subtitle, as may be necessary to protect human health and the environment. In establishing such standards the Administrator shall, where appropriate, distinguish in such standards between requirements appropriate for new facilities and for facilities in existence on the date of promulgation of such regulations. Such standards shall include, but need not be limited to, requirements respecting—

- "(1) maintaining records of all hazardous wastes identified or listed under this title which is treated, stored, or disposed of, as the case may be, and the manner in which such wastes were treated, stored, or disposed of;
- "(2) satisfactory reporting, monitoring, and inspection and compliance with

the manifest system referred to in section 3002(5);

"(3) treatment, storage, or disposal of all such waste received by the facility pursuant to such operating methods, techniques, and practices as may be satisfactory to the Administrator;

"(4) the location, design, and construction of such hazardous waste treatment, disposal, or storage facilities;

"(5) contingency plans for effective action to minimize unanticipated damage from any treatment, storage, or disposal of any such hazardous waste;

"(6) the maintenance of operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, training for personnel, and financial responsibility as may be necessary or desirable; and

"(7) compliance with the requirements of section 3005 respecting permits for treatment, storage, or disposal.

No private entity shall be precluded by reason of criteria established under paragraph (6) from the ownership or operation of facilities providing hazardous waste treatment, storage, or disposal services where such entity can provide assurances of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste.

"(b) SALT DOME FORMATIONS, SALT BED FORMATIONS, UNDERGROUND MINES AND CAVES.—

"(1) Effective on the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as—

"(A) the Administrator has determined the record in the affected areas, that such placement is protective of human health and the environment;

"(B) the Administrator has promulgated performance and permitting standards for such facilities under this subtitle, and

"(C) a permit has been issued under section 3005 (c) for the facility concerned.

"(2) Effective on the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any hazardous waste other than a hazardous waste referred to in paragraph (1) in a salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as a permit has been issued under section 3005(c) for the facility concerned.

"(3) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) applies shall affect the prohibition contained in paragraph (1) or (2) of this subsection.

"(4) Nothing in this subsection shall apply to the Department of Energy Waste Isolation Pilot Project in New Mexico.

"(c) LIQUID IN LANDFILLS.—

"(1) Effective 6 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not absorbents have been added) in any landfill is prohibited. Prior to such date the requirements (as in effect on April 30, 1983) promulgated under this section by the Administrator regarding liquid hazardous waste shall remain in force and effect to the extent such requirements are applicable to the placement of bulk or noncontainerized liquid hazardous waste, or free liquids contained in hazardous waste, in landfills.

(2) Not later than 15 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate final regulations which—

(A) minimize the disposal of containerized liquid hazardous waste in landfills, and

(B) minimize the presence of free liquids in containerized hazardous waste to be disposed of in landfills.

Such regulations shall also prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations. Prior to the date on which such final regulations take effect, the requirements (as in effect on April 30, 1983) promulgated under this section by the Administrator shall remain in force and effect to the extent such requirements are applicable to the disposal of containerized liquid hazardous waste, or free liquids contained in hazardous waste, in landfills.

(3) Effective 12 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the placement of any liquid which is not a hazardous waste in a landfill for which a permit is required under section 3005(c) or which is operating pursuant to interim status granted under section 3005(e) is prohibited unless the owner or operator of such landfill demonstrates to the Administrator, or the Administrator determines, that—

(A) the only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted under section 3005(c) or operating pursuant to interim status under section 3005(e), which contains, or may reasonably be anticipated to contain, hazardous; and

(B) placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water.

As used in subparagraph (B), the term 'underground source of drinking water' has the same meaning as provided in regulations under the Safe Drinking Water Act (title XIV of the Public Health Service Act).

(4) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) applies shall affect the prohibition contained in paragraph (1) of this subsection.

(d) PROHIBITIONS ON LAND DISPOSAL OF SPECIFIED WASTES.—

(1) Effective 32 months after the enactment of the Hazardous and Solid Waste Amendments of 1984 (except as provided in subsection (f) with respect to underground injection into deep injection wells), the land disposal of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition on one or more methods of land disposal of such waste is not required in order to protect human health and the environment for as long as the waste remains hazardous, taking into account—

(A) the long-term uncertainties associated with land disposal,

(B) the goal of managing hazardous waste in an appropriate manner in the first instance, and

(C) the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous wastes and their hazardous constituents. For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other than a hazardous waste which has complied with the pretreatment regulations promulgated under section (m)), unless,

upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

"(2) Paragraph (1) applies to the following hazardous wastes listed or identified under section 3001:

"(A) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/L.

"(B) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to these specified below:

"(i) arsenic and/or compounds (as As) 500 mg/l;

"(ii) cadmium and/or compounds (as Cd) 100 mg/l;

"(iii) chromium (VI and/or compounds (as Cr VI) 500 mg/l;

"(iv) lead and/or compounds (as Pb) 500 mg/l;

"(v) mercury and/or compounds (as Hg) 20 mg/l;

"(vi) nickel and/or compounds (as Ni) 134 mg/l;

"(vii) selenium and/or compounds (as Se) 100 mg/l; and

"(viii) thallium and/or compounds (as Th) 130 mg/l.

"(C) Liquid hazardous waste having a pH less than or equal to two (2.0).

"(D) Liquid hazardous wastes containing polychlorinated diphenyls at concentrations greater than or equal to 50 ppm.

"(E) Hazardous wastes containing halogenated organic compounds in total concentration greater than or equal to 1,000 mg/kg.

When necessary to protect human health and the environment, the Administrator shall substitute more stringent concentration levels than the levels specified in subparagraphs (A) through (E).

"(3) During the period ending 48 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action required under this subtitle.

"(e) SOLVENTS AND DIOXINS.—

"(1) Effective 24 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 (except as provided in subsection (f) with respect to underground injection into deep injection wells), the land disposal of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition of one or more methods of land disposal of such waste is not required in order to protect human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraph (A) through (C) of subsection (d)(1). For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other than a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m)), unless upon application by an interested person it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

"(2) The hazardous wastes to which the prohibition under paragraph (1) applies are as follows—

"(A) dioxin-containing hazardous wastes numbered F020, F021, F022, and F023 (as referred to in the proposed rule published by the Administrator in the Federal Register for April 4, 1983), and

"(B) these hazardous wastes numbered F001, F002, F003, F004, and F005 in regulations promulgated by the Administrator under section 3001 (40 C.F.R. 261.31 (July 1, 1983)), as those regulations are in effect on July 1, 1983.

"(3) During the period ending 48 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or a corrective action required under this subtitle.

WASTES; SOLVENTS AND DIOXINS.—

"(1) Not later than 45 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a review of the disposal of all hazardous wastes referred to in paragraph (2) of subsection (d) and in paragraph (2) of subsection (e) by underground injection into deep injection wells.

"(2) Within 45 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall make a determination regarding the disposal by underground injection into deep injection wells of the hazardous wastes referred to in paragraph (2) of subsection (d) and the hazardous wastes referred to in paragraph (2) of subsection (e). The Administrator shall promulgate final regulations prohibiting the disposal of such wastes into such wells if it may reasonably be determined that such disposal may not be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraphs (A) through (C) of subsection (d)(1). In promulgating such regulations, the Administrator shall consider each hazardous waste referred to in paragraph (2) of subsection (d) or in paragraph (2) of subsection (e) which is prohibited from disposal into such wells by any State.

"(3) If the Administrator fails to make a determination under paragraph (2) for any hazardous waste referred to in paragraph (2) of subsection (d) within 45 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, such hazardous waste shall be prohibited from disposal into any deep injection well.

"(4) As used in this subsection, the term 'deep injection well' means a well used for the underground injection of hazardous waste other than a well to which section 7010(a) applies.

"(g) ADDITIONAL LAND DISPOSAL PROHIBITION DETERMINATIONS.—

"(1) Not later than 24 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a schedule to Congress for—

"(A) reviewing all hazardous wastes listed (as of the date of the enactment of the Hazardous and Solid Waste Amendments of 1984) under section 3001 other than those wastes which are referred to in subsection (d) or (e); and

"(B) taking action under paragraph (5) of this subsection with respect to each such hazardous waste.

"(2) The Administrator shall base the schedule on a ranking of such listed wastes considering their intrinsic hazard and their volume such that decisions regarding the land disposal of high volume hazardous wastes with high intrinsic hazard shall, to the maximum extent possible, be made by the date 45 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984. Decisions regarding low volume hazardous wastes with lower intrinsic hazard shall be made by the date 66 months after such date of enactment.

"(3) The preparation and submission of the schedule under this subsection shall not be subject to the Paperwork Reduction Act of 1980. No hearing on the record shall be required for purposes of preparation or submission of the schedule. The schedule shall not be subject to judicial review.

"(4) The schedule under this subsection shall require that the Administrator shall promulgate regulations in accordance with paragraph (5) or make a determination under paragraph (5)—

"(A) for at least one-third of all hazardous wastes referred to in paragraph (1) by the date 45 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(B) for at least two-thirds of all such listed wastes by the date 55 months after the date of enactment of such Amendments; and

"(C) for all such listed wastes and for all hazardous wastes identified under 3001 by the date 66 months after the date of enactment of such Amendments.

In the case of any hazardous waste identified or listed under section 3001 after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall determine whether such waste shall be prohibited from one or more methods of land disposal in accordance with paragraph (5) within 6 months after the date of such identification or listing.

"(5) Not later than the date specified in the schedule published under this subsection, the Administrator shall promulgate final regulations prohibiting one or more methods of land disposal of the hazardous wastes listed on such schedule except for methods of land disposal which the Administrator determines will be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraph (A) through (C) of subsection (d)(1). For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment (except with respect to a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m)) unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

"(6)(A) If the Administrator fails (by the date 45 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first one-third of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

"(i) such facility is in compliance with the requirements of subsection (o) which are applicable to new facilities (relating to minimum technological requirements); and

"(ii) prior to such disposal, the generator has certified to the Administrator that such generator has investigated the availability of

treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

"(B) If the Administrator fails (by the date 55 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first two-thirds of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

"(i) such facility is in compliance with the requirements of subsection (c) which are applicable to new facilities (relating to minimum technological requirements); and

"(ii) prior to such disposal the generator has certified to the Administrator that such generator has investigated the availability of treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

"(C) If the Administrator fails to promulgate regulations, or make a determination under paragraph (5) for any hazardous waste referred to paragraph (1) within 66 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, such hazardous waste shall be prohibited from land disposal.

"(h) VARIANCES FROM LAND DISPOSAL PROHIBITIONS.—

"(1) A prohibition in regulations under subsection (d), (e), (f), or (g) shall be effective immediately upon promulgation.

"(2) The Administrator may establish an effective date different from the effective date which would otherwise apply under subsection (d), (e), (f), or (g) with respect to a specific hazardous waste which is subject to a prohibition under subsection (d), (e), (f), or (g) or under regulations under subsection (d), (e), (f), or (g). Any such other effective date shall be established on the basis of the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. Any such other effective date shall in no event be later than 2 years after the effective date of the prohibition which would otherwise apply under subsection (d), (e), (f), or (g).

"(3) The Administrator, after notice and opportunity for comment and after consultation with appropriate State agencies in all affected States, may on a case-by-case basis grant an extension of the effective date which would otherwise apply under subsection (d), (e), (f), or (g) or under paragraph (2) for up to one year, where the applicant demonstrates that there is a binding contractual commitment to construct or otherwise provide such alternative capacity but due to circumstances beyond the control of such applicant such alternative capacity cannot reasonably be made available by such effective date. Such extension shall be renewable once for no more than one additional year.

"(4) Whenever another effective date (hereinafter referred to as a "variance") is established under paragraph (2), or an extension is granted under paragraph (3), with respect to any hazardous waste, during the period for which

such variance or extension is in effect, such hazardous waste may be disposed of in a landfill or surface impoundment only if such facility is in compliance with the requirements of subsection (o).

"(i) **PUBLICATION OF DETERMINATION.**—If the Administrator determines that a method of land disposal will be protective of human health and the environment, he shall promptly publish in the Federal Register notice of such determination, together with an explanation of the basis for such determination.

"(j) **STORAGE OF HAZARDOUS WASTE PROHIBITED FROM LAND DISPOSAL.**—In the case of any hazardous waste which is prohibited from one or more methods of land disposal under this section (or under regulations promulgated by the Administrator under any provision of this section) the storage of such hazardous waste is prohibited unless such storage is solely for the purpose of the accumulation of such quantities of hazardous wastes as are necessary to facilitate proper recovery, treatment or disposal.

"(k) **DEFINITION OF LAND DISPOSAL.**—For the purposes of this section, the term 'land disposal', when used with respect to a specified hazardous waste, shall be deemed to include, but not be limited to, any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

"(l) **BAN ON DUST SUPPRESSION.**—The use of waste or used oil or other material, which is contaminated or mixed with dioxin any other hazardous waste identified or listed under section 3001 (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

"(m) **TREATMENT STANDARDS FOR WASTES SUBJECT TO LAND DISPOSAL PROHIBITION.**—

"(1) Simultaneously with the promulgation of regulations under subsection (d), (e), (f), or (g) prohibiting one or more methods of land disposal of a particular hazardous waste, and as appropriate thereafter, the Administrator shall, after notice and an opportunity for hearings and after consultation with appropriate Federal and State agencies, promulgate regulations specifying those levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.

"(2) If such hazardous waste has been treated to the level or by a method specified in regulations promulgated under this subsection, such waste or residue thereof shall not be subject to any prohibition promulgated under subsection (d), (e), (f), or (g) and may be disposed of in a land disposal facility which meets the requirements of this subtitle. Any regulation promulgated under this subsection for a particular hazardous waste shall become effective on the same date as any applicable prohibition promulgated under subsection (d), (e), (f), or (g).

"(n) **AIR EMISSIONS.**—Not later than 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate such regulations for the monitoring and control of air emissions at hazardous waste treatment, storage, and disposal facilities, including but not limited to open tanks, surface impoundments, and landfills, as may be necessary to protect human health and the environment.

"(o) **MINIMUM TECHNOLOGICAL REQUIREMENTS.**—

"(1) The regulations under subsection (a) of this subsection shall be revised from time to time to take into account improvements in the technology of control and measurement. At a minimum, such regulations shall require, and a permit issued pursuant to a section 3005(c) after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require—

"(A) for each new landfill or surface impoundment, each new landfill or surface impoundment unit at an existing facility, each replacement of an existing land or surface impoundment unit, and each lateral expansion of an existing landfill or surface impoundment unit, for which an application for a final determination regarding issuance of a permit under section 3005(c) is received after the date of enactment of the Hazardous and Solid Waste Amendments of 1984—

"(i) the installation of two or more liners and a leachate collection system above (in the case of a landfill) and between such liners; and

"(ii) ground water monitoring; and

"(B) for each incinerator which receives a permit under section 3005(c) after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the attainment of the minimum destruction and removal efficiency required by regulations in effect on June 24, 1982.

The requirements of this paragraph shall apply with respect to all waste received after the issuance of the permit.

"(2) Paragraph (1)(A)(i) shall not apply if the owner or operator demonstrates to the Administrator, and the Administrator finds for such landfill or surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as such liners and leachate collection systems.

"(3) The double-liner requirement set forth in paragraph (1)(A)(i) may be waived by the Administrator for any monofill, if—

"(A) such monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand,

"(B) such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Extraction Procedure ("EP") toxicity characteristics set forth in regulations under this subtitle, and

"(iii) such monofill meets the same requirements as are applicable in the case of a waiver under section 3005(j) (2) or (4).

"(4)(A) Not later than 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate standards requiring that new landfill units, surface impoundment units, waste piles, underground tanks and land treatment units for the storage, treatment, or disposal of hazardous waste identified or listed under section 3001 shall be required to utilize approved leak detection systems.

"(B) For the purposes of subparagraph (A)—

"(i) the term 'approved leak detection system' means a system or technology which the Administrator determines to be capable of detecting leaks of hazardous constituents at the earliest practicable time; and

"(ii) the term 'new units' means units on which construction commences after the date of promulgation or regulations under this paragraph.

"(5)(A) The Administrator shall promulgate regulations or issue guidance documents implementing the requirements of paragraph (1)(A) within 2 years after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

"(B) Until the effective date of such regulations or guidance documents, the requirement for the installation of two or more liners may be

satisfied by the installation of a top liner designed, operated, and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer or recompacted clay or other natural material with a permeability of no more than 1×10^{-7} centimeter per second.

"(6) Any permit under section 3005 which is issued for a landfill located within the State of Alabama shall require the installation of two or more liners and a leachate collection system above and between such liners, notwithstanding any other provision of this Act.

"(8) In addition to the requirements set forth in this subsection, the regulations referred to in paragraph (1) shall specify criteria for the acceptable location of new and existing treatment, storage, or disposal facilities as necessary to protect human health and the environment. Within 18 months after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall publish guidance criteria identifying areas of vulnerable hydrogeology".

"(p) GROUND WATER MONITORING.—The standards under this section concerning ground water monitoring which are applicable to surface impoundments, waste piles, land treatment units, and landfills shall apply to such a facility whether or not—

"(1) the facility is located above the seasonal high water table;

"(2) two liners and a leachate collection system have been installed at the facility; or

"(3) the owner or operator inspects the liner (or liners) which has been installed at the facility.

This subsection shall not be construed to affect other exemptions or waivers from such standards provided in regulations in effect on the date of enactment of the Hazardous and Solid Waste Amendments of 1984 or as may be provided in revisions to those regulations, to the extent consistent with this subsection. The Administrator is authorized on a case-by-case basis to exempt from ground water monitoring requirements under this section (including subsection (o)) any engineered structure which the Administrator finds does not receive or contain liquid waste (nor waste containing free liquids), is designed and operated to exclude liquid from precipitation or other runoff, utilizes multiple leak detection systems within the outer layer of containment, and provides for continuing operating and maintenance of these leak detection systems during the operating period, closure, and the period required for post-closure, and for which the Administrator concludes on the basis of such findings that there is a reasonable certainty hazardous constituents will not migrate beyond the outer layer or containment prior to the end of the period required for post-closure monitoring".

"(q) HAZARDOUS WASTE USED AS FUEL.—

"(1) Not later than two years after the date of the enactment of the the Hazardous and Solid Waste Amendments of 1984, and after notice and opportunity for public hearing, the Administrator shall promulgate regulations establishing such—

"(A) standards applicable to the owners and operators of facilities which produce a fuel—

"(i) from any hazardous waste identified or listed under section 3001, or

"(ii) from any hazardous waste identified or listed under

section 3001 and any other material;

(B) standards applicable to the owners and operators of facilities which burn, for purposes of energy recovery, any fuel produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 3001; and

(C) standards applicable to any person who distributes or markets any fuel which is produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 3001

as may be necessary to protect human health and the environment. Such standards may include any of the requirements set forth in paragraph (1) through (7) of subsection (a) as may be appropriate. Nothing in this subsection shall be construed to affect or impair the provisions of section 3001(b)(3). For purposes of this subsection, the term hazardous waste listed under section 3001 includes any commercial chemical product which is listed under section 3001 and which, in lieu of its original intended use, is (i) produced for use as (or as a component of) a fuel, (ii) distributed for use as fuel, or (iii) burned as a fuel.

(2)(A) This subsection, subsection (r), and subsection (s) shall not apply to petroleum refinery wastes containing oil which are converted into petroleum coke at the same facility at which such wastes were generated, unless the resulting coke product would exceed one or more characteristics by which a substance would be identified as a hazardous waste under section 3001.

(B) The Administrator may exempt from the requirements of this subsection, subsection (r), or subsection (s) facilities which burn de minimis quantities of hazardous waste as fuel, as defined by the Administrator, if the wastes are burned at the same facility at which such wastes are generated; the waste is burned to recover useful energy, as determined by the Administrator on the basis of the design and operating characteristics of the facility and the heating value and other characteristics of the waste; and the waste is burned in a type of device determined by the Administrator to be designed and operated at a destruction and removal efficiency sufficient such that protection of human health and environment is assured.

(C)(1) After the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 and until standards are promulgated and in effect under paragraph (2) of this subsection, no fuel which contains any hazardous waste may be burned in any cement kiln which is located within the boundaries of any incorporated municipality with a population greater than 500,000 (based on the most recent census statistics) unless such kiln fully complies with regulations (as in effect on the date of the enactment of the Hazardous and Solid Waste Amendments of 1984) under this subtitle which are applicable to incinerators.

(2) Any person who knowingly violates the prohibition contained in clause (1) shall be deemed to have violated section 3008(d)(2).

(r) LABELING.—

(1) Notwithstanding any other provision of law, until such time as the Administrator promulgates standards under subsection (q) specifically superseding this requirement, it shall be unlawful for any person who is required to file a notification in accordance with paragraph (1) or (3) of section 3010 to distribute or

market any fuel which is produced from any hazardous waste identified or listed under section 3001, or any fuel which otherwise contains any hazardous waste identified or listed under section 3001 if the invoice or the bill of sale fails—

"(A) to bear the following statement: 'WARNING: THIS FUEL CONTAINS HAZARDOUS WASTES', and

"(B) to list the hazardous wastes contained therein.

Beginning ninety days after the enactment of the Hazardous and Solid Waste Amendments of 1984, such statement shall be located in a conspicuous place on every such invoice or bill of sale and shall appear in conspicuous and legible type in contrast by typography, layouts, or color with other printed matter on the invoice or bill of sale.

"(2) Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from petroleum refining waste containing oil if—

"(A) such materials are generated and reinserted on site into the refining process;

"(B) contaminants are removed; and

"(C) such refining waste containing oil is converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of Management and Budget Standard Industrial Classification Manual.

"(3) Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from oily materials, resulting from normal petroleum refining, production and transportation practices, if (A) contaminants are removed; and (B) such oily materials are converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of Management and Budget Standard Classification Manual.

"(s) RECORDKEEPING.—Not later than 15 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate regulations requiring that any person who is required to file a notification in accordance with subparagraph (1), (2), or (3), or section 3010(a) shall maintain such records regarding fuel blending, distribution, or use as may be necessary to protect human health and the environment.

"(t) FINANCIAL RESPONSIBILITY PROVISIONS.—

"(1) Financial responsibility required by subsection (a) of this section may be established in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this section, the Administrator is authorized to specify policy or other contractual terms, conditions or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this Act.

"(2) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where (with reasonable diligence) jurisdiction in any State court or any Federal Court cannot be obtained over an owner or operator likely to be solvent at the time or judgement, any claim arising from conduct for which evidence of financial responsibility must be provided under this section may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any

action pursuant to this subsection, such guarantor shall be entitled to involve all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

"(3) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this Act. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including but not limited to, this liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 of 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

"(4) For the purposes of this subsection, the term 'guarantor' means any person other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this section".

"(u) CONTINUING RELEASES AT PERMITTED FACILITIES.— Standards promulgated under this section shall require, and a permit issued after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at treatment, storage, or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in such unit. Permits issued under section 3005 shall contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action".

"(v) CORRECTIVE ACTIONS BEYOND FACILITY BOUNDARY.—As promptly as practicable after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall amend the standards under this section regarding corrective action required at facilities for the treatment, storage, or disposal, of hazardous waste listed or identified under section 3001 to require that corrective action be taken beyond the facility boundary where necessary to protect human health and the environment unless the owner or operator of the facility concerned demonstrates to the satisfaction of the Administrator that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Such regulations shall take effect immediately upon promulgation, notwithstanding section 3010(b), and shall apply to—

"(1) all facilities operating under permits issued under subsection (c); and
"(2) all landfills, surface impoundments, and waste pile units (including any new units, replacements of existing units, or lateral expansions of existing units) which receive hazardous waste after July 26, 1982.

Pending promulgation of such regulations, the Administrator shall issue corrective action orders for facilities referred to in paragraph (1) and (2), on a case-by case basis, consistent with the purposes of this subsection.

"(w) UNDERGROUND TANKS.—Not later than March 1, 1985, the Administrator shall promulgate final permitting standards under this section for underground tanks that cannot be entered for inspection. Within 48 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, such standards shall be modified, if necessary, to cover at a minimum all requirements and standards described in section 9003.

"(x) If (1) solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium, (2) fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels, or (3) cement kiln dust waste, is subject to regulation under this subtitle, the Administrator is authorized to modify the requirements of subsections (c), (d), (e), (f), (g), (o), and (u) and section 3005(j), in the case of landfills or surface impoundments receiving such solid waste, to take into account the special characteristics of such wastes, the practical difficulties associated with implementation of such requirements, and site-specific characteristics, including but not limited to the climate, geology, hydrology and soil chemistry at the site, so long as such modified requirements assure protection of human health and the environment.

"PERMITS FOR TREATMENT, STORAGE, OR DISPOSAL OF HAZARDOUS WASTE

"Sec. 3005. (a) PERMIT REQUIREMENTS.—Not later than eighteen months after the date of the enactment of this section, the Administrator shall promulgate regulations requiring each person owning or operating an existing facility or planning to construct a new facility for the treatment, storage, or disposal of hazardous waste identified or listed under this subtitle to have a permit issued pursuant to this section. Such regulations shall take effect on the date provided in section 3010 and upon and after such date the treatment, storage, or disposal of any such hazardous waste and the construction of any new facility for the treatment, storage, or disposal of any such hazardous waste is prohibited except in accordance with such a permit. No permit shall be required under this section in order to construct a facility if such facility is constructed pursuant to an approval issued by the Administrator under section 6(e) of the Toxic Substances Control Act for the incineration of polychlorinated biphenyls and any person owning or operating such a facility may, at any time after operation or construction of such facility has begun, file an application for a permit pursuant to this section authorizing such facility to incinerate hazardous waste identified or listed under this subtitle.

"(b) REQUIREMENTS OF PERMIT APPLICATION.—Each application for a permit under this section shall contain such information as may be required under regulations promulgated by the Administrator, including information respecting—

"(1) estimates with respect to the composition, quantities, and concentrations of any hazardous waste identified or listed under this subtitle, or combinations of any such hazardous waste and any other solid waste, proposed to be disposed of, treated, transported, or stored, and the time, frequency, or rate of which such waste is proposed to be disposed of, treated, transported, or stored; and

"(2) the site at which such hazardous waste or the products of treatment of such hazardous waste will be disposed of, treated, transported to, or stored.

"(c) PERMIT ISSUANCE.—

(1) Upon a determination by the Administrator (or a State, if applicable), of compliance by a facility for which a permit is applied for under this section with the requirements of this section and section 3004, the Administrator (or the State) shall issue a permit for such facilities. In the event permit applicants propose modification of their facilities, or in the event the Administrator (or the State) determines that modifications are necessary to conform to the requirements under this section and section 3004, the permit shall specify the time allowed to complete the modifications.

"(2) (Axi) Not later than the date 4 years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of

each application under this subsection for a permit for a land disposal facility which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

"(ii) Not later than the date 5 years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of each application for a permit under this subsection for an incinerator facility which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

"(B) Not later than the date 8 years after the enactment of the Hazardous and Solid Waste Amendments of 1984, in the case of each application for a permit under this subsection for any facility (other than a facility referred to in subparagraph (A)) which was submitted before such date, the Administrator shall issue a final permit pursuant to such application or issue a final denial of such application.

"(C) The time periods specified in this paragraph shall also apply in the case of any State which is administering an authorized hazardous waste program under section 3006. Interim status under subsection (e) shall terminate for each facility referred to in subparagraph (A)(ii) or (B) on the expiration of the 5 or 8 year period referred to in subparagraph (A) or (B), whichever is applicable, unless the owner or operator of the facility applies for a final determination regarding the issuance of a permit under this subsection within—

"(i) 2 years after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 (in the case of a facility referred to in subparagraph (A)(ii), or

"(ii) 4 years after such date of enactment (in the case of a facility referred to in subparagraph (B)).

"(3) Any permit under this section shall be for a fixed term, not to exceed 10 years in the case of any land disposal facility, storage facility, or incinerator or other treatment facility. Each permit for a land disposal facility shall be reviewed 5 years after the date of issuance or reissuance and shall be modified as necessary to assure that the facility continues to comply with the currently applicable requirements of this section and section 3004. Nothing in this subsection shall preclude the Administrator from reviewing and modifying a permit at any time during its term. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology as well as changes in applicable regulations. Each permit issued under this section shall contain such terms and conditions as the Administrator (or the State) determines necessary to protect human health and the environment.

"(d) PERMIT REVOCATION.—Upon a determination by the Administrator (or by a State, in the case of a State having an authorized hazardous waste program under section 3006) of noncompliance by a facility having a permit under this title with the requirements of this section or section 3004, the Administrator (or State, in the case of a State having an authorized hazardous waste program under section 3006) shall revoke such permit.

"(e) INTERIM STATUS.—

(1) Any person who—

"(A) owns or operates a facility required to have a permit under this section which facility—

"(i) was in existence on November 19, 1980,

"(ii) is in existence on the effective date of statutory or regulatory changes under this Act that render the facility subject to the requirement to have a permit under this section,

"(B) has complied with the requirements of section 3010(a), and

"(C) has made an application for a permit under this section shall be treated as having been issued such permit until such time as final administrative disposition of such application is made, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application.

This paragraph shall not apply to any facility which has been previously denied a permit under this section or if authority to operate the facility under this section has been previously terminated.

"(2) In the case of each land disposal facility which has been granted interim status under this subsection before the date of enactment of the Hazardous and Solid Waste Amendments of 1984, interim status shall terminate on the date 12 months after the date of the enactment of such Amendments unless the owner or operator of such facility—

"(A) applies for a final determination regarding the issuance of a permit under subsection (c) for such facility before the date 12 months after the date of the enactment of such Amendments; and

"(B) certifies that such facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements.

"(3) In the case of each land disposal facility which is in existence on the effective date of statutory or regulatory changes under this Act that render the facility subject to the requirement to have a permit under this section and which is granted interim status under this subsection, interim status shall terminate on the date 12 months after the date on which the facility first becomes subject to such permit requirement unless the owner or operator of such facility—

"(A) applies for a final determination regarding the issuance of a permit under subsection (c) for such facility before the date 12 months after the date on which the facility first becomes subject to such permit requirement; and—

"(B) certifies that such facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements.

"(f) **COAL MINING WASTES AND RECLAMATION PERMITS.**—Notwithstanding subsection (a) through (e) of this section, any surface coal mining and reclamation permit covering any coal mining wastes or overburden which has been issued or approved under the Surface Mining Control and Reclamation Act of 1977 shall be deemed to be a permit issued pursuant to this section with respect to the treatment, storage, or disposal of such wastes or overburden. Regulations promulgated by the Administrator under this subtitle shall not be applicable to treatment, storage, or disposal of coal mining wastes and overburden which are covered by such a permit.

"(g) **RESEARCH, DEVELOPMENT, AND DEMONSTRATION PERMITS.**—

"(1) The Administrator may issue a research, development and demonstration permit for any hazardous waste treatment facility which proposes to utilize an innovative and experimental hazardous waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under this subtitle. Any such permit shall include such terms and conditions as will assure protection of human health and the environment. Such permits—

"(A) shall provide for the construction of such facilities, as necessary,

and for operation of the facility for not longer than one year (unless renewed as provided in paragraph (4)), and

"(B) shall provide for the receipt and treatment by the facility of only those types and quantities of hazardous waste which the Administrator deems necessary for purposes of determining the efficacy and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment, and

"(C) shall include such requirements as the Administrator deems necessary to protect human health and the environment (including, but not limited to, requirements regarding monitoring, operation, insurance or bonding, financial responsibility, closure, and remedial action), and such requirements as the Administrator deems necessary regarding testing and providing of information to the Administrator with respect to the operation of the facility.

The Administrator may apply the criteria set forth in this paragraph in establishing the conditions of each permit without separate establishment of regulations implementing such criteria.

"(2) For the purpose of expediting review and issuance of permits under this subsection, the Administrator may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements established in the Administrator's general permit regulations except that there may be no modification or waiver of regulations regarding financial responsibility (including insurance) or of procedures established under section 7004(b)(2) regarding public participation.

"(3) The Administrator may order an immediate termination of all operations at the facility at any time he determines that termination is necessary to protect human health and the environment.

"(4) Any permit issued under this subsection may be renewed not more than 3 times. Each such renewal shall be for a period of not more than 1 year.

"(h) WASTE MINIMIZATION.—Effective September 1, 1985, it shall be a condition of any permit issued under this section for the treatment, storage, or disposal of hazardous waste on the premises where such waste was generated that the permittee certify, no less often than annually, that—

"(1) the generator of the hazardous waste has a program in place to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

"(2) the proposed method of treatment, storage, or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment.

"(i) INTERIM STATUS FACILITIES RECEIVING WASTES AFTER JULY 26, 1982.—

The standards concerning ground water monitoring, unsaturated zone monitoring, and corrective action, which are applicable under section 3004 to new landfills, surface impoundments, land treatment units, and waste-pile units required to be permitted under subsection (c) shall also apply to any landfill, surface impoundment, land treatment unit, or waste-pile unit qualifying for the authorization to operate under subsection (e) which receives hazardous waste after July 26, 1982.

"(j) INTERIM STATUS SURFACE IMPOUNDMENTS.—

"(1) Except as provided in paragraph (2), (3), or (4), each surface impoundment in existence on the date of enactment of the Hazardous and Solid Waste Amendments of 1984 and qualifying for the authorization to operate under subsection (e) of this section shall not receive, store, or treat hazardous waste after the date 4 years after such date of enactment unless such surface impoundment is

in compliance with the requirements of section 3004(o)(1)(A) which would apply to such impoundment if it were new.

"(2) Paragraph (1) of this subsection shall not apply to any surface impoundment which (A) has at least one liner, for which there is no evidence that such liner is leaking; (B) is located more than 1/4 mile from an underground source of drinking water; and (C) is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under subsection (c) of this section.

"(3) Paragraph (1) of this subsection shall not apply to any surface impoundment which (A) contains treated waste water during the secondary or subsequent phases of an aggressive biological treatment facility subject to a permit issued under section 402 of the Clean Water Act (or which holds such treated waste water after treatment and prior to discharge); (B) is in compliance with generally applicable ground water monitoring requirements for facilities with permits under subsection (c) of this section; and (C)(i) is part of a facility in compliance with section 301(b)(2) of the Clean Water Act, or (ii) in the case of a facility for which no effluent guidelines required under section 304(b)(2) of the Clean Water Act are in effect and no permit under section 402(a)(1) of such Act implementing section 301(b)(2) of such Act has been issued, is part of a facility in compliance with a permit under section 402 of such Act, which is achieving significant degradation of toxic pollutants and hazardous constituents contained in the untreated waste stream and which has identified those toxic pollutants and hazardous constituents in the untreated waste stream to the appropriate permitting authority.

"(4) The Administrator (or the State, in the case of a State with an authorized program), after notice and opportunity for comment, may modify the requirements of paragraph (1) for any surface impoundment if the owner or operator demonstrates that such surface impoundment is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water any any future time. The Administrator or the State shall take into account locational criteria established under section 3004(o)(7).

"(5) The owner or operator of any surface impoundment potentially subject to paragraph (1) who has reason to believe that on the basis of paragraph (2), (3), or (4) such surface impoundment is not required to comply with the requirements of paragraph (1), shall apply to the Administrator (or the State, in the case of a State with an authorized program) not later than twenty-four months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 for a determination of the applicability of paragraph (1) (in the case of paragraph (2) or (3)) or for a modification of the requirements of paragraph (1) (in the case of paragraph (4)), with respect to such surface impoundment. Such owner or operator shall provide, with such application, evidence pertinent to such decision, including

"(A) an application for a final determination regarding the issuance of a permit under subsection (c) of this section for such facility, if not previously submitted;

"(B) evidence as to compliance with all applicable ground water monitoring requirements and the information and analysis from such monitoring;

"(C) all reasonably ascertainable evidence as to whether such surface impoundment is leaking; and

"(D) in the case of applications under paragraph (2) or (3), a certification by a registered professional engineer with academic training and experience in ground water hydrology that—

"(i) under paragraph (2), the liner of such surface impoundment is designed, constructed, and operated in accordance with applicable requirements, such surface impoundment is more than 1/4 mile from an underground source of drinking water and there is no evidence of such liner is leaking; or

"(ii) under paragraph (3), based on analysis of those toxic pollutants and hazardous constituents that are likely to be present in the untreated waste stream, such impoundment satisfies the conditions of paragraph (3).

In the case of any surface impoundment for which the owner or operator fails to apply under this paragraph within the time provided by this paragraph or paragraph (6), such surface impoundment shall comply with paragraph (1) notwithstanding paragraph (2), (3), or (4). Within twelve months after receipt of such application and evidence and not later than thirty-six months after such date of enactment, and after notice and opportunity to comment, the Administrator (or, if appropriate, the State) shall advise such owner or operator on the applicability of paragraph (1) to such surface impoundment or as to whether and how the requirements of paragraph (1) shall be modified and applied to such surface impoundment.

✓(6)(A) In any case in which a surface impoundment becomes subject to paragraph (1) after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 due to the promulgation of additional listings or characteristics for the identification of hazardous waste under section 3001, the period for compliance in paragraph (1) shall be four years after the date of such promulgation, the period for demonstrations under paragraph (4) and for submission of evidence under paragraph (5) shall be not later than twenty-four months after the date of such promulgation, and the period for the Administrator (or if appropriate, the State) to advise such owners or operators under paragraph (5) shall be not later than thirty-six months after the date of promulgation.

✓(B) In any case in which a surface impoundment is initially determined to be excluded from the requirements of paragraph (1) but due to a change in condition (including the existence of a leak) no longer satisfies the provisions of paragraph (2), (3), or (4) and therefore becomes subject to paragraph (1), the period for compliance in the paragraph (1) shall be two years after the date of discovery of such change of condition, or in the case of a surface impoundment excluded under paragraph (3) three years after such date of discovery.

"(7)(A) The Administrator shall study and report to the Congress on the number, range of size, construction, likelihood of hazardous constituents migrating into ground water, and potential threat to human health and the environment of existing surface impoundments excluded by paragraph (3) from the requirements of paragraph (1). Such report shall address the need, feasibility, and estimated costs of subjecting such existing surface impoundments to the requirements of paragraph (1).

"(B) In the case of any existing surface impoundment or class of surface impoundments from which the Administrator (or the State, in the case of a State with an authorized program) determines hazardous constituents are likely to migrate into ground water, the Administrator (or if appropriate, the State) is authorized to impose such requirements as may be necessary to protect human health and the environment, including the requirements of section 3004(o) which would apply to such impoundments if

they were new.

"(C) In the case of any surface impoundment excluded by paragraph (3) from the requirements of paragraph (1) which is subsequently determined to be leaking, the Administrator (or, if appropriate, the State) shall require compliance with paragraph (1), unless the Administrator (or, if appropriate, the State) determines that such compliance is not necessary to protect human health and the environment.

"(8) In the case of any surface impoundment in which the liners and leak detection system have been installed pursuant to the requirements of paragraph (1) and in good faith compliance with section 3004(o) and the Administrator's regulations and guidance documents governing liners and leak detection systems, no liner or leak detection system which is different from that which was so installed pursuant to paragraph (1) shall be required for such unit by the Administrator when issuing the first permit under this section to such facility. Nothing in this paragraph shall preclude the Administrator from requiring installation of a new liner when the Administrator has reason to believe that any liner installed pursuant to the requirements of this subsection is leaking.

"(9) In the case of any surface impoundment which has been excluded by paragraph (2) on the basis of a liner meeting the definition under paragraph (12)(A)(ii), at the closure of such impoundment the Administrator shall require the owner or operator of such impoundment to remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment shall be required to comply with appropriate post-closure requirements, including but not limited to ground water monitoring and corrective action.

"(10) Any incremental cost attributable to the requirements of this subsection or section 3004(o) shall not be considered by the Administrator (or the State, in the case of a State with an authorized program under section 402 of the Clean Water Act)—

"(A) in establishing effluent limitations and standards under section 301, 304, 306, 307, or 402 of the Clean Water Act based on effluent limitations guidelines and standards promulgated any time before twelve months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984; or

"(B) in establishing any other effluent limitations to carry out the provisions of section 301, 307, or 402 of the Clean Water Act on or before October 1, 1986.

"(11)(A) If the Administrator allows a hazardous waste which is prohibited from one or more methods of land disposal under subsection (d), (e), or (g) of section 3004 (or under regulations promulgated by the Administrator under such subsections) to be placed in a surface impoundment (which is operating pursuant to interim status) for storage and treatment, such impoundment shall meet the requirements that are applicable to new surface impoundments under section 3004(o)(1), unless such impoundment meets the requirements of paragraph (2) or (4).

"(B) In the case of any hazardous waste which is prohibited from one or more methods of land disposal under subsection (d), (e), or (g) of section 3004 (or under regulations promulgated by the Administrator under such subsection) the placement or maintenance of such hazardous waste in a surface impoundment for treatment is prohibited as of the effective date of such prohibition unless the treatment residues which are hazardous are, at a

minimum, removed for subsequent management within one year of the entry of the waste into the surface impoundment.

"(12)(A) For the purposes of paragraph (2)(A) of this subsection, the term 'liner' means—

"(i) a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility; or

"(ii) a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility.

"(B) For the purpose of this subsection, the term 'aggressive biological treatment facility' means a system of surface impoundments in which the initial impoundment of the secondary treatment segment of the facility utilizes intense mechanical aeration to enhance biological activity to degrade waste water pollutants and

"(i) the hydraulic retention time in such initial impoundment is no longer than 5 days under normal operating conditions, on an annual average basis;

"(ii) the hydraulic retention time in such initial impoundment is no longer than 30 days under normal operating conditions, on an annual average basis: PROVIDED, That the sludge in such impoundment does not constitute a hazardous waste as identified by the extracting procedure toxicity characteristic in effect on the date of enactment of the Hazardous and Solid Waste Amendments of 1984; or

"(iii) such system utilizes activated sludge treatment in the first portion of secondary treatment.

"(C) For the purposes of this subsection, the term 'underground source or drinking water' has the same meaning as provided in regulations under the Safe Drinking Water Act (title XIV of the Public Health Service Act).

"(13) The Administrator may modify the requirements of paragraph (1) in the case of a surface impoundment for which the owner or operator, prior to October 1, 1984, has entered into, and is in compliance with, a consent order, decree, or agreement with the Administrator or a State with an authorized program mandating corrective action with respect to such surface impoundment that provides a degree of protection of human health and the environment which is at a minimum equivalent to that provided by paragraph (1).

"AUTHORIZED STATE HAZARDOUS WASTE PROGRAMS

"Sec. 3006. (a) FEDERAL GUIDELINES.—Not later than eighteen months after the date of enactment of this Act, the Administrator, after consultation with State authorities, shall promulgate guidelines to assist States in the development of State hazardous waste programs.

"(b) AUTHORIZATION OF STATE PROGRAM.—Any State which seeks to administer and enforce a hazardous waste program pursuant to this subtitle may develop and, after notice and opportunity for public hearing, submit to the Administrator an application, in such form as he shall require, for authorization of such program. Within ninety days following submission of an application under this subsection, the Administrator shall issued a notice as to whether or not he expects such program to be authorized, and within ninety days following such notice (and after opportunity for public hearing) he shall publish his findings as to whether or not the conditions listed in item (1),

(2), and (3) below have been met. Such State is authorized to carry out such program in lieu of the Federal program under this subtitle in such State and to issue and enforce permits for the storage, treatment, or disposal of hazardous waste (and to enforce permits deemed to have been issued under section 3012(d)(1)) unless, within ninety days following submission of the application the Administrator notifies such State that such program may not be authorized and, within ninety days following such notice and after opportunity for public hearing, he finds that (1) such State program is not equivalent to the Federal program under this subtitle, (2) such program is not consistent with the Federal or State programs applicable in other States, or (3) such program does not provide adequate enforcement of compliance with the requirements of this subtitle. In authorizing a State program, the Administrator may base his findings on the Federal program in effect one year prior to submission of a State's application or in effect on January 26, 1983, whichever is later.

"(c) INTERIM AUTHORIZATION.—

"(1) Any State which has in existence a hazardous waste program pursuant to State law before the date ninety days after the date of promulgation of regulations under sections 3002, 3003, 3004, and 3005, may submit to the Administrator evidence of such existing program and may request a temporary authorization to carry out such program under this subtitle. The Administrator shall, if the evidence submitted shows the existing State program to be substantially equivalent to the Federal program under this subtitle, grant an interim authorization to the State to carry out such program in lieu of the Federal program pursuant to this subtitle for a period ending no later than January 31, 1986.

"(2) The Administrator shall, by rule, establish a date for the expiration of interim authorization under this subsection.

"(3) Pending interim or final authorization of a State program for any State which reflects the amendments made by the Hazardous and Solid Waste Amendments of 1984, the State may enter into an agreement with the Administrator under which the State may assist in the administration of the requirements and prohibitions which take effect pursuant to such Amendments.

"(4)(A) In the case of a State permit program for any State which is authorized under subsection (b) or under this subsection, until such program is amended to reflect the amendments made by the Hazardous and Solid Waste Amendments of 1984 and such program amendments receive interim or final authorization, the Administrator shall have the authority in such State to issue or deny permits or those portions of permits affected by the requirements and prohibitions established by the Hazardous and Solid Waste Amendments of 1984. The Administrator shall coordinate with States the procedures for issuing such permits.

"(d) EFFECT OF STATE PERMIT.—Any action taken by a State under a hazardous waste program authorized under this section shall have the same force and effect as action taken by the Administrator under this subtitle.

"(e) WITHDRAWAL OF AUTHORIZATION.—Whenever the Administrator determines after public hearing that a State is not administering and enforcing a program authorized under this section in accordance with requirements of this section, he shall so notify the State and, if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days, the Administrator shall withdraw authorization of such program and establish a Federal program pursuant to this subtitle. The Administrator shall not withdraw authorization of any such program unless he shall first have notified the State, and made public, in writing, the reasons for such withdrawal.

"(f) AVAILABILITY OF INFORMATION.—No State program may be authorized by the Administrator under this section unless—

"(1) such program provides for the public availability of information obtained by the State regarding facilities and sites for the treatment, storage, and disposal of hazardous waste; and

"(2) such information is available to the public in substantially the same manner, and to the same degree, as would be the case if the Administrator was carrying out the provisions of this subtitle in such State.

[Ed. Note: Section 226(b) of the Hazardous and Solid Waste Amendments of 1984 includes the following amendment that does not amend:

"The amendment made by subsection (a) [226(a)—referring to Section 3006(f) **AVAILABILITY OF INFORMATION**] shall apply with respect to State programs authorized under section 3006 before, on, or after the date of enactment of the Hazardous and Solid Waste Amendments of 1984."

"(g) AMENDMENTS MADE BY 1984 ACT.—

"(1) Any requirement or prohibition which is applicable to the generation, transportation, treatment, storage, or disposal of hazardous waste and which is imposed under this subtitle pursuant to the amendments made by the hazardous and Solid Waste Amendments of 1984 shall take effect in each State having an interim or finally authorized State program on the same date as such requirement takes effect in other States. The Administrator shall carry out such requirement directly in each such State unless the State program is finally authorized (or is granted interim authorization as provided in paragraph (2) with respect to such requirement.

"(2) Any State which, before the date of the enactment of the Hazardous and Solid Waste Amendments of 1984 has an existing hazardous waste program which has been granted interim for final authorization under this section may submit to the Administrator evidence that such existing program contains (or has been amended to include) any requirement which is substantially equivalent to a requirement referred to in paragraph (1) and may request interim authorization to carry out that requirement under this subtitle. The Administrator shall, if the evidence submitted shows the State requirement to be substantially equivalent to the requirement referred to in paragraph (1), grant an interim authorization to the State to carry out such requirement in lieu of direct administration in the State by the Administrator of such requirement.

"INSPECTIONS

"Sec. 3007. (a) **ACCESS ENTRY.**—For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes and permit such person at all reasonable times to have access to, and to copy all records relating to such wastes. For the purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, such officers, employees or representatives are authorized—

"(1) to enter at reasonable times any establishment or other place where hazardous wastes are or have been generated, stored, treated, disposed of, or transported from;

"(2) to inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes.

Each such inspection shall be commenced and completed with reasonable promptness. If the officer, employee or representative obtains any samples, prior to leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the sample obtained and if requested a portion of each such sample equal in volume or weight to the portion retained. If any analysis is made of such samples, a copy of the results of such analysis shall be furnished promptly to the owner, operator, or agent in charge.

"(b) AVAILABILITY TO PUBLIC.—

(1) Any records, reports, or information (including records, reports, or information obtained by representatives of the Environmental Protection Agency) obtained from any person under this section shall be available to the public, except that upon a showing satisfactory to the Administrator (or the State, as the case may be) by any person that records, reports, or information, or particular part thereof, to which the Administrator (or the State, as the case may be) or any officer, employee or representative thereof has access under this section if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, such information or particular portion thereof shall be considered confidential in accordance with the purposes of that section, except that such record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act, or when relevant in any proceeding under this Act.

"(2) Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

"(3) In submitting data under this Act, a person required to provide such data may—

"(A) designate the data which such person believes is entitled to protection under this subsection, and

"(B) submit such designated data separately from other data submitted under this Act.

A designation under this paragraph shall be made in writing and in such manner as the Administrator may prescribe.

"(4) Notwithstanding any limitation contained in this section or any other provision of law, all information reported to, or otherwise obtained by, the Administrator (or any representative of the Administrator) under this Act shall be made available, upon written request of any duly authorized committee of the Congress, to such committee (including records, reports, or information obtained by representatives of the Environmental Protection Agency).

"(c) FEDERAL FACILITY INSPECTIONS.—Beginning 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall, or in the case of a State with an authorized hazardous waste program, the State may, undertake on an annual basis a thorough inspection of each facility for the treatment, storage, or disposal of hazardous waste which is owned or operated by a Federal agency to enforce its compliance with this subtitle and the regulations promulgated thereunder. The records of such inspections shall be available to the public as provided in subsection (b).

"(d) STATE-OPERATED FACILITIES.—The Administrator shall annually undertake a thorough inspection of every facility for the treatment, storage, or disposal of hazardous waste which is operated by a State or local government for which a permit is required under section 3005 of this title. The records of such inspection shall be available to the public as provided in subsection (b).

"(e) MANDATORY INSPECTIONS.—

"(1) The administrator (or the State in the case of a State having an

authorized hazardous waste program under this subtitle) shall commence a program to thoroughly inspect every facility for the treatment, storage, or disposal of hazardous waste for which a permit is required under section 3005 no less often than every 2 years as to its compliance with this subtitle (and the regulations promulgated under this subtitle). Such inspections shall commence not later than 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984. The Administrator shall, after notice and opportunity for public comment, promulgate regulations governing the minimum frequency and manner of such inspections, including the manner in which records of such inspections shall be maintained and the manner in which reports of such inspections shall be filed. The Administrator may distinguish between classes and categories of facilities commensurate with the risks posed by each class or category.

"(2) Not later than 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit to the Congress a report on the potential for inspections of hazardous waste treatment, storage, or disposal facilities by nongovernmental inspectors as a supplement to inspections conducted by officers, employees, or representatives of the Environmental Protection Agency or States having authorized hazardous waste programs or operating under a cooperative agreement with the Administrator. Such report shall be prepared in cooperation with the States, insurance companies offering environmental impairment insurance, independent companies providing inspection services, and other such groups as appropriate. Such report shall contain recommendations on provisions and requirements for a program of private inspections to supplement governmental inspections.

"FEDERAL ENFORCEMENT

"Sec. 3008. (a) COMPLIANCE ORDERS.—

"(1) Except as provided in paragraph (2), whenever on the basis of any information the Administrator determines that any person has violated or is in violation of any requirement of this subtitle, the Administrator may issue an order assessing a civil penalty for any past or current violation, requiring compliance immediately or within a specified time period or both, or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

"(2) In the case of a violation of any requirement of this subtitle where such violation occurs in a State which is authorized to carry out a hazardous waste program under section 3006, the Administrator shall give notice to the State in which such violation has occurred prior to issuing an order or commencing a civil action under this section.

"(3) Any order issued pursuant to this subsection may include a suspension or revocation of any permit issued by the Administrator or a State under this subtitle and shall state with reasonable specificity the nature of the violation. Any penalty assessed in the order shall not exceed \$25,000 per day of noncompliance for each violation of a requirement of this subtitle. In assessing such a penalty, the Administrator shall take into account the seriousness of the violation and any good faith efforts to comply with applicable requirements.

"(b) PUBLIC HEARING.—Any order issued under this section shall become final unless, no later than thirty days after the order is served, the person or persons named therein request a public hearing. Upon such request the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section the

Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.

"(c) **VIOLATION OF COMPLIANCE ORDERS.**—If a violator fails to take corrective action within the time specified in a compliance order, the Administrator may assess a civil penalty of not more than \$25,000 for each day of continued noncompliance with the order and the Administrator may suspend or revoke any permit issued to the violator (whether issued by the Administrator or the State).

"(d) **CRIMINAL PENALTIES.**—Any person who—

"(1) knowingly transports or causes to be transported any hazardous waste identified or listed under this subtitle to a facility which does not have a permit under section this subtitle, or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052),

"(2) knowingly treats, stores, or disposes of any hazardous waste identified or listed under this subtitle either—

"(A) without a permit under section 3005 (or 3006 in the case of a State program) or pursuant to title I of the Marine Protection, Research, and Sanctuaries Act (86 Stat. 1052); or

"(B) in knowing violation of any material condition or requirement of such permit; or

"(C) in knowing violation of any material condition or requirement of any applicable interim status regulations or standards;

"(3) knowingly generates, stores, treats, transports, disposes of, exports, or otherwise handles any hazardous waste (whether such activity took place before or takes place after the date of the enactment of this paragraph) and who knowingly destroys, alters, conceals, or fails to file any record, application, manifest, report, or other document required to be maintained or filed for purposes of compliance with regulations promulgated by the Administrator (or by a State in the case of an authorized State program) under this subtitle;

"(4) knowingly transports without a manifest, or causes to be transported without a manifest, any hazardous waste required by regulations promulgated under this subtitle (or by a State in the case of a State program authorized under this subtitle) to be accompanied by a manifest; or

"(5) knowingly exports a hazardous waste identified or listed under this subtitle

"(A) without the consent of the receiving country or,

"(B) where there exists an international agreement between the United States and the government of the receiving country establishing notice, export, and enforcement procedures for the transportation, treatment, storage, and disposal of hazardous wastes, in a manner which is not in conformance with such agreement.

shall, upon conviction, be subject to a fine of not more than \$50,000 for each day of violation, or imprisonment not to exceed 2 years (5 years in the case of a violation of paragraph (1) or (2)), or both. If the conviction is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment under the respective paragraph shall be doubled with respect to both fine and imprisonment.

"(e) **KNOWING ENDANGERMENT.**—Any person who knowingly transports, treats, stores, or disposes of, or exports any hazardous waste identified or listed under this subtitle in violation of paragraph (1), (2), (3), (4), (5), or (6) of subsection (d) of this section who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more

than \$250,000 or imprisonment for not more than 15 years, or both. A defendant that is an organization shall, upon conviction of violating this subsection, be subject to a fine of not more than \$1,000,000.

"(1)(A) in violation of paragraphs (1) or (2) of subsection (d) of this section, or

"(B) having applied for a permit under section 3005 or 3006, and knowingly either—

"(i) has failed to include in his application material information required under regulations promulgated by the Administrator, or

"(ii) fails to comply with the applicable interim status regulations and standards promulgated pursuant to this subtitle, who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, and

"(2)(A) if his conduct in the circumstances manifests an unjustified and inexcusable disregard for human life, or

"(B) if his conduct in the circumstances manifests an extreme indifference for human life.

shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than 2 years, or both, except that any person who violates subsection (e)(2)(B) shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than 5 years, or both. A defendant that is an organization shall, upon conviction of violating this subsection, be subject to a fine of not more than \$1,000,000.

"(f) SPECIAL RULES.—For the purposes of subsection (e)—

"(1) A person's state of mind is knowing with respect to—

"(A) his conduct, if he is aware of the nature of his conduct;

"(B) an existing circumstance, if he is aware or believes that the circumstance exists; or

"(C) a result of his conduct, if he is aware or believes that his conduct is substantially certain to cause danger of death or serious bodily injury.

"(2) In determining whether a defendant who is a natural person knew that his conduct placed another person in imminent danger of death or serious bodily injury—

"(A) the person is responsible only for actual awareness or actual belief that he possessed; and

"(B) knowledge possessed by a person other than the defendant but not by the defendant himself may not be attributed to the defendant;

PROVIDED, That in proving the defendant's possession of actual knowledge, circumstantial evidence may be used, including evidence that the defendant took affirmative steps to shield himself from relevant information.

"(3) It is an affirmative defense to prosecution that the conduct charged was consented to by the person endangered and that the danger and conduct charged were reasonably foreseeable hazards of —

"(A) an occupation, a business, or a profession; or

"(B) medical treatment or medical or scientific experimentation conducted by professionally approved methods and such other person had been made aware of the risks involved prior to giving consent.

The defendant may establish an affirmative defense under this subsection by a preponderance of the evidence.

"(4) All general defenses, affirmative defenses, and bars to prosecution that may apply with respect to other Federal criminal offenses may apply under subsection (e) and shall be determined by the courts of the United States according

to the principles of common law as they may be interpreted in the light of reason and experience. Concepts of justification and excuse applicable under this section may be developed in the light of reason and experience.

"(5) The term 'organization' means a legal entity, other than a government, established or organized for any purpose, and such term includes a corporation, company, association, firm, partnership, joint stock company, foundation, institution, trust, society, union, or any other association of persons.

"(6) The term 'serious bodily injury' means—

"(A) bodily injury which involves a substantial risk of death;

"(B) unconsciousness;

"(C) extreme physical pain;

"(D) protracted and obvious disfigurement; or

"(E) protracted loss or impairment of the function of a bodily

member, organ, or mental faculty.

"(g) CIVIL PENALTY.—Any person who violates any requirement of this subtitle shall be liable to the United States for a civil penalty in an amount not to exceed \$25,000 for each such violation. Each day of such violation shall, for purposes of this subsection, constitute a separate violation.

"(h) INTERIM STATUS CORRECTION ACTION ORDERS.—

"(1) Whenever on the basis of any information the Administrator determines that there is or has been a release of hazardous waste into the environment from a facility authorized to operate under section 3005(e) of this subtitle, the Administrator may issue an order requiring corrective action or such other response measure as he deems necessary to protect human health or the environment or the Administrator may commence a civil action in the United States district court in the district in which the facility is located for appropriate relief, including a temporary or permanent injunction.

"(2) Any order issued under this subsection may include a suspension or revocation of authorization to operate under section 3005(e) of this subtitle, and shall state with reasonable specificity the nature of the required corrective action or other response measure, and shall specify a time for compliance. If any person named in an order fails to comply with the order, the Administrator may assess, and such person shall be liable to the United States for, a civil penalty in an amount not to exceed \$25,000 for each day of noncompliance with the order.

"RETENTION OF STATE AUTHORITY

"Sec. 3009. Upon the effective date of regulations under this subtitle no State or political subdivision may impose any requirements less stringent than those authorized under this subtitle respecting the same matter as governed by such regulations, except that if application of a regulation with respect to any matter under this subtitle is postponed or enjoined by the action of any court, no State or political subdivision shall be prohibited from acting with respect to the same aspect of such matter until such time as such regulation takes effect. Nothing in this title shall be construed to prohibit any State or political subdivision thereof from imposing any requirements, including those for site selection, which are more stringent than those imposed by such regulations. Nothing in this title (or in any regulation adopted under this title) shall be construed to prohibit any State from requiring that the State be provided with a copy of each manifest used in connection with hazardous waste which is generated within that State or transported to a treatment, storage, or disposal facility within that State.

"EFFECTIVE DATE

"Sec. 3010. (a) PRELIMINARY NOTIFICATION.—Not later than ninety days after promulgation of regulations under section 3001 identifying by its characteristics or listing any substance as hazardous waste subject to this subtitle, any person generating or transporting such substance or owning or operating a facility for treatment, storage, or disposal of such substance shall file with the Administrator (or with States having authorized hazardous waste permit programs under section 3006) a notification stating the location and general description of such activity and the identified or listed hazardous wastes handled by such person. Not later than 15 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984—

"(1) the owner or operator of any facility which produces a fuel (A) from any hazardous waste identified or listed under section 3001, (B) from such hazardous waste identified or listed under section 3001 and any other material, (C) from used oil, or (D) from used oil and any other material;

"(2) the owner or operator of any facility (other than a single or two-family residence) which burns for purposes of energy recovery any fuel produced as provided in paragraph (1) or any fuel which otherwise contains used oil of any hazardous waste identified or listed under section 3001; and

"(3) any person who distributes or markets any fuel which is produced as provided in paragraph (1) or any fuel which otherwise contains used oil or any hazardous waste identified or listed under section 3001 shall file with the Administrator (and with the state in the case of a State with an authorized hazardous waste program) a notification stating the location and general description of the facility, together with a description of the identified or listed hazardous waste involved and, in the case of a facility referred to in paragraph (1) or (2), a description of the production or energy recovery activity carried out at the facility and such other information as the Administrator deems necessary. For purposes of the preceding sentence, the term 'hazardous waste listed under section 3001' also includes any commercial chemical product which is listed under section 3001 and which, in lieu of its original intended use, is (i) produced for use as (or as a component of) a fuel, (ii) distributed for use as a fuel, or (iii) burned as a fuel. Notification shall not be required under the second sentence of this subsection in the case of facilities (such as residential boilers) where the Administrator determines that such notification is not necessary in order for the Administrator to obtain sufficient information respecting current practices of facilities using hazardous waste for energy recovery. Nothing in this subsection shall be construed to affect or impair the provisions of section 3001(b)(3). Nothing in this subsection shall affect regulatory determinations under section 3014". In revising any regulation under section 3001 identifying additional characteristics of hazardous waste or listing any additional substance as hazardous waste subject to this subtitle, the Administrator may require any person referred to in the preceding provisions to file with the Administrator (or with States having authorized hazardous waste permit programs under section 3006) the notification described in the preceding provisions. Not more than one such notification shall be required to be filed with respect to the same substance. No identified or listed hazardous waste subject to this subtitle may be transported, treated, stored, or disposed of unless notification has been given as required under this subsection.

"(b) EFFECTIVE DATE OF REGULATION.—The regulations under this subtitle respecting requirements applicable to the generation, transportation, treatment, storage, or disposal of hazardous waste (including requirements respecting permits for such treatment, storage, or disposal) shall take effect on the date six months after the date of

promulgation thereof (or six months after the date of revision in the case of any regulation which is revised after the date required for promulgation thereof). At the time a regulation is promulgated, the Administrator may provide for a shorter period prior to the effective date, or an immediate effective date for:

- "(1) a regulation with which the Administrator finds the regulated community does not need 6 months to come into compliance;
- "(2) a regulation which responds to an emergency situation; or
- "(3) other good cause found and published with the regulation.

"AUTHORIZATION OF ASSISTANCE TO STATES

"Sec. 3011. (a) AUTHORIZATION.—There is authorized to be appropriated \$25,000,000 for each of the fiscal years 1978 and 1979, \$20,000,000 for fiscal year 1980, \$35,000,000 for fiscal year 1981, \$40,000,000 for fiscal year 1982, \$55,000,000 for the fiscal year 1985, \$60,000,000 for the fiscal year 1986, \$60,000,000 for the fiscal year 1987, and \$60,000,000 for the fiscal year 1988 to be used to make grants to the States for purposes of assisting the States in the development and implementation of authorized State hazardous waste programs.

"(b) ALLOCATION.—Amounts authorized to be appropriated under subsection (a) shall be allocated among the States on the basis of regulations promulgated by the Administrator, after consultation with the States, which take into account, the extent to which hazardous waste is generated, transported, treated, stored, and disposed of within such State, the extent of exposure of human beings and the environment within such State to such waste, and such other factors as the Administrator deems appropriate.

"(c) ACTIVITIES INCLUDED.—State hazardous waste programs for which grants may be made under subsection (a) may include (but shall not be limited to) planning for hazardous waste treatment, storage and disposal facilities, and the development and execution of programs to protect health and the environment from inactive facilities which may contain hazardous waste.

"HAZARDOUS WASTE SITE INVENTORY

"Sec. 3012. (a) STATE INVENTORY PROGRAMS.—Each State shall, as expeditiously as practicable, undertake a continuing program to compile, publish, and submit to the Administrator an inventory describing the location of each site within such State at which hazardous waste has at any time been stored or disposed of. Such inventory shall contain—

"(1) a description of the location of the sites at which any such storage or disposal has taken place before the date on which permits are required under section 3005 for such storage or disposal;

"(2) such information relating to the amount, nature, and toxicity of the hazardous waste at each such site as may be practicable to obtain and as may be necessary to determine the extent of any health hazard which may be associated with such site;

"(3) the name and address, or corporate headquarters of, the owner of each site, determined as of the date of preparation of the inventory;

"(4) an identification of the types or techniques of waste treatment or disposal which have been used at each such site; and

"(5) information concerning the current status of the site, including information respecting whether or not hazardous waste is currently being treated or disposed of at such site (and if not, the date on which such activity ceased) and information respecting the nature of any other activity currently carried out at such site.

For purposes of assisting the States in compiling information under this section, the Administrator shall make available to each State undertaking a program under this section such information as is available to him concerning the items specified in paragraphs (1) through (5) with respect to the sites within such State, including such information as the Administrator is able to obtain from other agencies or departments of the United States and from surveys and studies carried out by any committee or subcommittee of the Congress. Any State may exercise the authority of section 3007 for purposes of this section in the same manner and to the same extent as provided in such section in the case of States having an authorized hazardous waste program, and any State may by order require any person to submit such information as may be necessary to compile the data referred to in paragraphs (1) through (5).

"(b) ENVIRONMENTAL PROTECTION AGENCY PROGRAM.—If the Administrator determines that any State program under subsection (a) is not adequately providing information respecting the sites in such State referred to in subsection (a) the Administrator shall notify the State. If within ninety days following such notification, the State program has not been revised or amended in such manner as will adequately provide such information, the Administrator shall carry out the inventory program in such State. In any such case—

"(1) the Administrator shall have the authorities provided with respect to State programs under subsection (a);

"(2) the funds allocated under subsection (c) for grants to states under this section may be used by the Administrator for carrying out such program in such State; and

"(3) no further expenditure may be made for grants to such State under this section until such time as the Administrator determines that such State is carrying out, or will carry out, an inventory program which meets the requirements of this section.

"(c) GRANTS.—

"(1) Upon receipt of an application submitted by any State to carry out a program under this section, the Administrator may make grants to the States for purposes of carrying out such a program. Grants under this section shall be allocated among the several States by the Administrator based upon such regulations as he prescribes to carry out the purposes of this section. The Administrator may make grants to any State which has conducted an inventory program which effectively carried out the purposes of this section before the date of the enactment of the Solid Waste Disposal Act Amendments of 1980 to reimburse such State for all, or any portion of, the costs incurred by such State in conducting such program.

"(2) There are authorized to be appropriated to carry out this section \$25,000,000 for each of the fiscal years 1985 through 1988.

"(d) NO IMPEDIMENT TO IMMEDIATE REMEDIAL ACTION.—Nothing in this section shall be construed to provide that the Administrator or any State should, pending completion of the inventory required under this section, postpone undertaking any enforcement or remedial action with respect to any site at which hazardous waste has been treated, stored, or disposed of.

"MONITORING, ANALYSIS, AND TESTING

"Sec. 3013. (a) AUTHORITY OF ADMINISTRATOR.—If the Administrator determines, upon receipt of any information, that—

"(1) the presence of any hazardous waste at a facility or site at which hazardous waste is, or has been, stored, treated, or disposed of, or

"(2) the release of any such waste from such facility or site may present a substantial hazard to human health or the environment, he may issue an order requiring the owner or operator of such facility or site to conduct such monitoring, testing, analysis, and reporting with respect to such facility or site as the Administrator deems reasonable to ascertain the nature and extent of such hazard.

"(b) PREVIOUS OWNERS AND OPERATORS.—In the case of any facility or site not in operation at the time a determination is made under subsection (a) with respect to the facility or site if the Administrator finds that the owner of such facility or site, could not reasonably be expected to have actual knowledge of the presence of hazardous waste at such facility or site and of its potential for release, he may issue an order requiring the most recent previous owner or operator of such facility or site who could reasonably be expected to have such actual knowledge to carry out the actions referred to in subsection (a).

"(c) PROPOSAL.—Any order under subsection (a) or (b) shall require the person to whom such order is issued to submit to the Administrator within 30 days from the issuance of such order a proposal for carrying out the required monitoring, testing, analysis, and reporting. The Administrator may, after providing such person with an opportunity to confer with the Administrator respecting such proposal, require such person to carry out such monitoring, testing, analysis, and reporting in accordance with such proposal, and such modifications in such proposal as the Administrator deems reasonable to ascertain the nature and extent of the hazard.

"(d) MONITORING, ETC., CARRIED OUT BY ADMINISTRATOR.—

"(1) If the Administrator determines that no owner or operator referred to in subsection (a) or (b) is able to conduct monitoring, testing, analysis, or reporting satisfactory to the Administrator, if the Administrator deems any such action carried out by an owner or operator to be unsatisfactory, or if the Administrator cannot initially determine that there is an owner or operator referred to in subsection (a) or (b) who is able to conduct such monitoring, testing, analysis, or reporting, he may—

"(A) conduct monitoring, testing, or analysis (or any combination thereof) which he deems reasonable to ascertain the nature and extent of the hazard associated with the site concerned, or

"(B) authorize a State or local authority or other person to carry out any such action, and require, by order, the owner or operator referred to in subsection (a) or (b) to reimburse the Administrator or other authority or person for the costs of such activity.

"(2) No order may be issued under this subsection requiring reimbursement of the costs of any action carried out by the Administrator which confirms the results of an order issued under subsection (a) or (b).

"(3) For purposes of carrying out this subsection, the Administrator or any authority or other person authorized under paragraph (1) may exercise the authorities set forth in section 3007.

"(e) ENFORCEMENT.—The Administrator may commence a civil action against any person who fails or refuses to comply with any order issued under this section. Such action shall be brought in the United States district court in which the defendant is located, resides, or is doing business. Such court shall have jurisdiction to require compliance with such order and to assess a civil penalty of not to exceed \$5,000 for each day during which such failure or refusal occurs.

"RESTRICTIONS ON RECYCLED OIL

"Sec. 3014. (a) IN GENERAL.—Not later than one year after the date of the enactment of this section, the Administrator shall promulgate regulations establishing such performance standards and other requirements as may be necessary to protect the public health and the environment from hazards associated with recycled oil. In developing such regulations, the Administrator shall conduct an analysis of the economic impact of the regulations on the oil recycling industry. The Administrator shall ensure that such regulations do not discourage the recovery or recycling of used oil, consistent with the protection of human health and the environment.

"(b) IDENTIFICATION OR LISTING OF USED OIL AS HAZARDOUS WASTE.—Not later than 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 the Administrator shall propose whether to list or identify used automobile and truck crankcase oil as hazardous waste under section 3001. Not later than 24 months after such date of enactment, the Administrator shall make a final determination whether to list or identify used automobile and truck crankcase oil and other used oil as hazardous wastes under section 3001.

"(c) USED OIL WHICH IS RECYCLED.—

"(1) With respect to the generators and transporters of used oil identified or listed as a hazardous waste under section 3001, the standards promulgated under section 3001(d), 3002, and 3003 of this subtitle shall not apply to such used oil if such used oil is recycled.

"(2)(A) In the case of used oil which is exempt under paragraph (1), not later than 24 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate such standards under this subsection regarding the generation and transportation of used oil which is recycled as may be necessary to protect human health and the environment. In promulgating such regulations with respect to generators, the Administrator shall take into account the effect of such regulations on environmentally acceptable types of used oil recycling and the effect of such regulations on small quantity generators and generators which are small businesses (as defined by the Administrator).

"(B) The regulations promulgated under this subsection shall provide that no generator of used oil which is exempt under paragraph (1) from the standards promulgated under section 3001(d), 3002, and 3003 shall be subject to any manifest requirement or any associated recordkeeping and reporting requirement with respect to such used oil if such generator—

"(i) either—

"(I) enters into an agreement or other arrangement (including an agreement or arrangement with an independent transporter or with an agent of the recycler) for delivery of such used oil to a recycling facility which has a permit under section 3005(c) (or for which a valid permit is deemed to be in effect under subsection (d)), or

"(II) recycles such used oil at one or more facilities of the generator which has such a permit under section 3005 of this subtitle (or for which a valid permit is deemed to have been issued under subsection (d) of this section;

"(ii) such used oil is not mixed by the generator with other types of hazardous wastes; and

"(iii) the generator maintains such records relating to such used oil, including records of agreements or other arrangements for

delivery of such used oil to any recycling facility referred to in clause (i)(1), as the Administrator deems necessary to protect human health and the environment.

"(3) The regulations under this subsection regarding the transportation of used oil which is exempt from the standards promulgated under sections 3001(d), 3002, and 3003 under paragraph (1) shall require the transporters of such used oil to deliver such used oil to a facility which has a valid permit under section 3005 of this subtitle or which is deemed to have a valid permit under subsection (d) of this section. The Administrator shall also establish other standards for such transporters as may be necessary to protect human health and the environment.

"(d) PERMITS.—

"(1) The owner or operator of a facility which recycles used oil which is exempt under subsection (c)(1), shall be deemed to have a permit under this subsection for all such treatment or recycling (and any associated tank or container storage) if such owner and operator comply with standards promulgated by the Administrator under section 3004; except that the Administrator may require such owners and operators to obtain an individual permit under section 3005(c) if he determines that an individual permit is necessary to protect human health and the environment.

"(2) Notwithstanding any other provision of law, any generator who recycles used oil which is exempt under subsection (c)(1) shall not be required to obtain a permit under section 3005(c) with respect to such used oil until the Administrator has promulgated standards under section 3004 regarding the recycling of such used oil.

"EXPANSION DURING INTERIM STATUS

"Sec. 3015. (a) WASTE PILES.—The owner or operator of a waste pile qualifying for the authorization to operate under section 3005(e) shall be subject to the same requirements for liners and leachate collection systems or equivalent protection provided in regulations promulgated by the Administrator under section 3004 before October 1, 1982, or revised under section 3004(o) (relating to minimum technological requirements), for new facilities receiving individual permits under subsection (c) of section 3005, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the waste management area identified in the permit application submitted under section 3005, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the waste management area identified in the permit application submitted under section 3005, and with respect to waste received beginning 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(b) LANDFILLS AND SURFACE IMPOUNDMENTS.—

"(1) The owner or operator of a landfill or surface impoundment qualifying for the authorization to operate under section 3005(e) shall be subject to the requirements of section 3004(o) relating to minimum technological requirements, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the waste management area identified in the permit application submitted under this section, and with respect to waste received beginning 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(2) The owner or operator of each unit referred to in paragraph (1) shall notify the Administrator (or the State, if appropriate) at least 60 days prior to receiving waste. The Administrator (or the State) shall require the filing, within 6

months of receipt of such notice, of an application for a final determination regarding the issuance of a permit for each facility submitting such notice.

"(3) In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of this section and in good faith compliance with the Administrator's regulations and guidance documents governing liners and leachate collection systems, no liner or leachate collection system which is different from that which was so installed pursuant to this section shall be required for such unit by the Administrator when issuing the first permit under section 3005 to such facility, except that the Administrator shall not be precluded from requiring installation of a new liner when the Administrator has reason to believe that any liner installed pursuant to the requirements of this section is leaking. The Administrator may, under section 3004, amend the requirements for liners and leachate collection systems required under this section as may be necessary to provide additional protection for human health and the environment.

"INVENTORY OF FEDERAL AGENCY HAZARDOUS WASTE FACILITIES

"Sec. 3015 (a) Each Federal agency shall undertake a continuing program to compile, publish and submit to the Administrator (and to the State in the case of sites in States having an authorized hazardous waste program) an inventory of each site which the Federal agency owns or operates or has owned or operated at which hazardous waste is stored, treated, or disposed of or has been disposed of at any time. The inventory shall be submitted every 2 years beginning January 31, 1986. Such inventory shall be available to the public as provided in section 3007(b). Information previously submitted by a Federal agency under section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or under section 3005 or 3010 of this Act, or under this section need not be resubmitted except that the agency shall update any previous submission to reflect the latest available data and information. The inventory shall include each of the following:

"(1) A description of the location of each site at which any such treatment, storage, or disposal has taken place before the date on which permits are required under section 3005 for such storage, treatment, or disposal, and where hazardous waste has been disposed, a description of hydrogeology of the site and the location of withdrawal wells and surface water within one mile of the site.

"(2) Such information relating to the amount, nature, and toxicity of the hazardous waste in each site as may be necessary to determine the extent of any health hazard which may be associated with any site.

"(3) Information on the known nature and extent of environmental contamination at each site, including a description of the monitoring data obtained.

"(4) Information concerning the current status of the site, including information respecting whether or not hazardous waste is currently being treated, stored, or disposed of at such site (and if not, the date on which such activity ceased) and information respecting the nature of any activity currently carried out at such site.

"(5) A list of sites at which hazardous waste has been disposed and environmental monitoring data has not been obtained, and the reasons for the lack of monitoring data at each site.

"(6) A description of response actions undertaken or contemplated at contaminated sites.

"(6) [sic] An identification of the types of techniques of waste treatment, storage, or disposal which have been used at each site.

"(7) The name and address and responsible Federal agency for each site, determined as of the date of preparation of the inventory.

"(b) ENVIRONMENTAL PROTECTION AGENCY PROGRAM.—If the Administrator determines that any Federal agency under subsection (a) is not adequately providing information respecting the sites referred to in subsection (a), the Administrator shall notify the chief official of each agency. If within 90 days following such notification, the Federal agency has not undertaken a program to adequately provide such information, the Administrator shall carry out the inventory program for such agency.

"EXPORT OF HAZARDOUS WASTE

Sec. 3017. (a) IN GENERAL.—Beginning 24 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, no person shall export any hazardous waste identified or listed under this subtitle unless

(1)(A) such person has provided the notification required in subsection (c) of this section,

(B) the government of the receiving country has consented to accept such hazardous waste,

"(C) a copy of the receiving country's written consent is attached to the manifest accompanying each waste shipment, and

"(D) the shipment conforms with the terms of the consent of the government of the receiving country required pursuant to subsection (e), or

"(2) the United States and the Government of the receiving country have entered into an agreement as provided for in subsection (f) and the shipment conforms with the terms of such agreement.

"(b) REGULATIONS.—Not later than 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall promulgate the regulations necessary to implement this section. Such regulations shall become effective 180 days after promulgation.

"(c) NOTIFICATION.—Any person who intends to export a hazardous waste identified or listed under this subtitle beginning 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, shall, before such hazardous waste is scheduled to leave the United States, provide notification to the Administrator. Such notification shall contain the following information:

"(1) the name and address of the exporter;

"(2) the types and estimated quantities of hazardous waste to be exported;

"(3) the estimated frequency or rate at which such waste is to be exported; and the period of time over which such waste is to be exported;

"(4) the ports of entry;

"(5) a description of the manner in which such hazardous waste will be transported to and treated, stored, or disposed in the receiving country; and

"(6) the name and address of the ultimate treatment, storage or disposal facility.

"(d) PROCEDURES FOR REQUESTING CONSENT OF THE RECEIVING COUNTRY.—Within 30 days of the Administrator's receipt of a complete notification under this section, the Secretary of State, acting on behalf of the Administrator, shall—

"(1) forward a copy of the notification to the government of the receiving country;

"(2) advise the government that United States law prohibits the export of hazardous waste unless the receiving country consents to accept the hazardous waste;

"(3) request the government to provide the Secretary with a written consent or objection to the terms of the notification; and

"(4) forward to the government of the receiving country a description of the Federal regulations which would apply to the treatment, storage, and disposal of the hazardous waste in the United States.

"(e) CONVEYANCE OF WRITTEN CONSENT TO EXPORTER.—Within 30 days of receipt by the Secretary of State of the receiving country's written consent or objection (or any subsequent communication withdrawing a prior consent or objection), the Administrator shall forward such a consent, objection, or other communication to the exporter.

"(f) INTERNATIONAL AGREEMENTS.—Where there exists an international agreement between the United States and the government of the receiving country establishing notice, export, and enforcement, procedures for the transportation, treatment, storage, and disposal of hazardous wastes, only the requirements of subsection (a)(2) and (g) shall apply.

"(g) REPORTS.—After the date of enactment of the Hazardous and Solid Waste Amendments of 1984, any person who exports any hazardous waste identified or listed under section 3001 of this subtitle shall file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all such hazardous waste exported during the previous calendar year.

"(h) OTHER STANDARDS.—Nothing in this section shall preclude the Administrator from establishing other standards for the export of hazardous wastes under section 3002 or section 3003 of this subtitle.

"DOMESTIC SEWAGE

"Sec. 3018. (a) REPORT.—The Administrator shall, not later than 15 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, submit a report to the Congress concerning those substances identified or listed under section 3001 which are not regulated under this subtitle by reason of the exclusion for mixtures of domestic sewage and other wastes that pass through a sewer system to a publicly owned treatment works. Such report shall include the types, size and number of generators which dispose of such substances in this manner, the types and quantities disposed of in this manner, and the identification of significant generators, wastes, and waste constituents not regulated under existing Federal law or regulated under existing Federal law or regulated in a manner sufficient to protect human health and the environment.

"(b) REVISIONS OF REGULATIONS.—Within 18 months after submitting the report specified in subsection (a), the Administrator shall revise existing regulations and promulgate such additional regulations pursuant to this subtitle (or any other authority of the Administrator, including section 307 of the Federal Water Pollution Control Act) as are necessary to assure that substances identified or listed under section 3001 which pass through a sewer system to a publicly owned treatment works are adequately controlled to protect human health and the environment.

"(c) REPORT ON WASTEWATER LAGOONS.—The Administrator shall, within 36 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, submit a report to Congress concerning wastewater lagoons at publicly owned treatment works and their effect on groundwater quality. Such report shall include—

"(1) the number and size of such lagoons;

"(2) the types and quantities of waste contained in such lagoon;

"(3) the extent to which such waste has been or may be released from such lagoons and contaminate ground water; and

"(4) available alternatives for preventing or controlling such releases.

The Administrator may utilize the authority of section 3007 and 3013 for the purpose of completing such report.

"(d) APPLICATION OF SECTION 3010 AND SECTION 3007.—The provisions of sections 3007 and 3010 shall apply to solid or dissolved materials in domestic sewage to the same extent and in the same manner as such provisions apply to hazardous waste.

"EXPOSURE INFORMATION AND HEALTH ASSESSMENTS

"Sec. 3019: (a) EXPOSURE INFORMATION.—Beginning on the date nine months after the enactment of the Hazardous and Solid Waste Amendments of 1984, each application for a final determination regarding a permit under section 3005(c) for a landfill or surface impoundment shall be accompanied by information reasonably ascertainable by the owner or operator on the potential for the public to be exposed to hazardous wastes or hazardous constituents through releases related to the unit. At a minimum, such information must address:

"(1) reasonably foreseeable potential releases from both normal operations and accidents at the unit, including releases associated with transportation to or from the unit;

"(2) the potential pathways of human exposure to hazardous wastes or constituents resulting from the releases described under paragraph (1); and,

"(3) the potential magnitude and nature of the human exposure resulting from such releases.

The owner or operator of a landfill or surface impoundment for which an application for such a final determination under section 3005(c) has been submitted prior to the date of enactment of the Hazardous and Solid Waste Amendments of 1984 shall submit the information required by this subsection to the Administrator (or the State, in the case of a State with an authorized program) no later than the date 9 months after such date of enactment.

"(b) HEALTH ASSESSMENTS.—

"(1) The Administrator for the State, in the case of a State with an authorized program) shall make the information required by subsection (a), together with other relevant information, available to the Agency for Toxic Substances and Disease Registry established by section 104(i) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980.

"(2) Whenever in the judgment of the Administrator, or the State (in the case of a State with an authorized program), a landfill or a surface impoundment poses a substantial potential risk to human health, due to the existence of releases of hazardous constituents, the magnitude of contamination with hazardous constituents which may be the result of a release, or the magnitude of the population exposed to such release or contamination, the Administrator or the State (with the concurrence of the Administrator) may request the Administrator of the Agency for Toxic Substances and Disease Registry to conduct a health assessment in connection with such facility and take other appropriate action with respect to such risks as authorized by section 104(b) and (i) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980. If funds are provided in connection with such request the Administrator of such Agency shall conduct such health assessment.

"(c) MEMBERS OF THE PUBLIC.—Any member of the public may submit evidence of releases of or exposure to hazardous constituents from such a facility, or as to the risks or health effects associated with such releases or exposure, to the Administrator of the Agency for Toxic Substances and Disease Registry, the Administrator, or the State (in the case of a State with an authorized program).

"(d) PRIORITY.—In determining the order in which to conduct health assessments under this subsection, the Administrator of the Agency for Toxic Substances and Disease

Registry shall give priority to those facilities or sites at where there is documented evidence of release of hazardous constituents, at which the potential risk to human health appears highest, and for which in the judgment of the Administrator of such Agency existing health assessment data is inadequate to assess the potential risk to human health as provided in subsection (f).

"(e) PERIODIC REPORTS.—The Administrator of such Agency shall issue periodic reports which include the results of all the assessments carried out under this section. Such assessments or other activities shall be reported after appropriate peer review.

"(f) DEFINITION.—For the purposes of this section, the term 'health assessments' shall include preliminary assessments of the potential risk to human health posed by individual sites and facilities subject to this section, based on such factors as the nature and extent of contamination, the existence of potential for pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified contaminants and any available recommended exposure or tolerance limits for such contaminants, and the comparison of existing morbidity and mortality data on diseases that may be associated with observed levels of exposure. The assessment shall include an evaluation of the risks to the potentially affected population from all sources of such contaminants, including known point or nonpoint sources other than the site or facility in question. A purpose of such preliminary assessments shall be to help determine whether full-scale health or epidemiological studies and medical evaluations of exposed populations shall be undertaken.

"(g) COST RECOVERY.—In any case in which a health assessment performed under this section discloses the exposure of a population to the release of a hazardous substance, the costs of such health assessment may be recovered as a cost of response under section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 from persons causing or contributing to such release of such hazardous substance or, in the case of multiple releases contributing to such exposure, to all such release.

"SUBTITLE D—STATE OR REGIONAL SOLID WASTE PLANS

"OBJECTIVES OF SUBTITLE

"Sec. 4001. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources including energy and materials which are recoverable from solid waste and to encourage resource conservation. Such objectives are to be accomplished through Federal technical and financial assistance to States or regional authorities for comprehensive planning pursuant to federal guidelines designed to foster cooperation among Federal, State, and local governments and private industry. In developing such comprehensive plans, it is the intention of this Act that in determining the size of the waste-to-energy facility, adequate provision shall be given to the present and reasonably anticipated future needs, including those needs created by thorough implementation of section 6002(h), of the recycling and resource recovery interest within the area encompassed by the planning process.

"FEDERAL GUIDELINES FOR PLANS

"Sec. 4002. (a) GUIDELINES FOR IDENTIFICATION OF REGIONS.—For purposes of encouraging and facilitating the development of regional planning for solid waste management, the Administrator, within one hundred and eighty days after the date of enactment of this section and after consultation with appropriate Federal, State, and local authorities, shall by regulation publish guidelines for the identification of those areas which have common solid waste management problems and are appropriate units for planning regional solid waste management services. Such guidelines shall consider—

- "(1) the size and location of areas which should be included,
- "(2) the volume of solid waste which should be included, and
- "(3) the available means of coordinating regional planning with other related regional planning and for coordination of such regional planning into the State plan.

"(b) GUIDELINES FOR STATE PLANS.—Not later than eighteen months after the date of enactment of this section and after notice and hearing, the Administrator shall, after consultation with appropriate Federal, State, and local authorities, promulgate regulations containing guidelines to assist in the development and implementation of State solid waste management plans (hereinafter in this title referred to as 'State plans'). The guidelines shall contain methods for achieving the objectives specified in section 4001. Such guidelines shall be reviewed from time to time, but not less frequently than every three years, and revised as may be appropriate.

"(c) CONSIDERATIONS FOR STATE PLAN GUIDELINES.—The guidelines promulgated under subsection (b) shall consider—

- "(1) the varying regional, geologic, hydrologic, climatic, and other circumstances under which different solid waste practices are required in order to insure the reasonable protection of the quality of the ground and surface waters from leachate contamination, the reasonable protection of the quality of the surface waters from surface runoff contamination, and the reasonable protection of ambient air quality;

"(2) characteristics and conditions of collection, storage, processing, and disposal operating methods, techniques and practices, and location of facilities

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264 553(c)	The Regional Administrator shall consider each of the following before designating a Temporary Unit (TU):			
§ 264 553(c)(1)	the length of time the temporary unit will be in operation			
§ 264 553(c)(2)	the type of unit containers/tanks treatment/storage			
§ 264 553(c)(3)	the volume of remediation waste given by the applicant must match the type of storage or treatment taking place at the TU			Containers/Tank Storage: Cubic Meters, Gallons, Liters, Cubic Yards Tank Treatment: Short Tons per Hour/Metric Tons per Hour Gallons per Hour/Liters per Hour Pounds per Hour/Kilogram per Hour Short Tons per Day/Metric Tons per Day Gallons per Day/Liters per Day
§ 264 553(c)(4)	the physical and chemical characteristics of the remediation waste identified by EPA Waste Code			
§ 264 553(c)(5)	the potential for releases from the unit			
§ 264 553(c)(6)	the hydrogeologic conditions influencing migration of possible releases from the TU			
§ 264 553(c)(6)	and environmental conditions influencing migration of possible releases from the TU			
§ 264 553(c)(7)	the potential for exposure of humans and environmental receptors			
	On-site receptors			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Human			
	Environmental			
	Off-site Receptors:			
	Human			
	Environmental			
§ 264 553(d)	The Regional Administrator shall specify in the permit/order:			
	the length of time the TU will be allowed to operate (no longer than one (1) year)			
	the design of unit			
	operating requirements			
	closure requirements			
§ 264 553(e)	Regional Administrator may extend operational period for (no longer than one (1) year) if:			NOTE: No more than one extension may be granted for each TU. If more than one extension is requested the applicant must Permit the unit under 264 with appropriate equipment/facility upgrades.
§ 264 553(e)(1)	continued operation will not threaten human health and the environment			
§ 264 553(e)(2)	continued operation is necessary to ensure timely and efficient implementation of remediation activities			
§ 264 553(f)	Incorporation of temporary unit(s) or time extension for the temporary unit into an existing permit shall be			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.553(f)(1)	approved under the provisions as an agency initiated permit modification of § 270.41			
§ 264.553(f)(2)	requested by the owner operator as a Class II modification under the provisions of § 270.41			
§ 264.553(g)	The Regional Administrator shall document rationale for designation of temporary units and for granting time extensions for temporary unit operations, and shall make such documentation available to the public			

**REVIEW CHECKLIST
FOR
SUBPART X MISCELLANEOUS UNITS
(§264.601)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.601	requirements for incorporation of appropriate parts of 40 CFR § 264 Subparts I through O.			
§ 264.601(a)	Prevention of release of contaminates/constituents to ground water.			
§ 264.601(a)(1)	Volume and chemical composition of waste considering potential for migration through the soil.			
§ 264.601(a)(2)	Hydrologic/Geologic characteristics of the unit and surrounding area.			
§ 264.601(a)(3)	Existing quality of ground water including the sources of contamination and their cumulative impact on ground water.			
§ 264.601(a)(4), § 264.601(b)(5)	Quantity and direction of ground water flow.			
§ 264.601(a)(5)	Proximity and withdrawal rates of current and potential ground water users.			
§ 264.601(a)(6)	Patterns of land use			
§ 264.601(a)(7)	Potential for deposition and migration of waste and/or constituents to:			
	subsurface physical structures			
	root zone of food chain crops, etc.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.601(a)(8), § 264.601(b)(10), § 264.601(c)(6)	Potential for health risks caused by human exposure to waste constituents			
§ 264.601(a)(9), § 264.601(b)(11), § 264.601(c)(7)	Potential for damage to: domestic animals.			
	wildlife			
	crops			
	vegetation			
	physical structures			
§ 264.601(b)	Prevention of release that may have adverse effects on human health and the environment due to migration in surface water, wetlands, or soil surface, considering:			
§ 264.601(b)(1)	Volume and physical and chemical characteristics of the waste in the unit			
§ 264.601(b)(2)	Effectiveness and reliability of: containment			
	confinement			
	collection systems and structures			
§ 264.601(b)(3)	Hydrologic characteristics of the unit;			
	surrounding area			
	topography of land around the unit			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.601(b)(4)	Precipitation patterns in the region			
§ 264.601(b)(5)	Quantity, quality, and direction of ground-water flow.			
§ 264.601(b)(6)	Proximity to surface water			
§ 264.601(b)(7)	Current and potential uses of nearby surface water and water quality standards for these waters.			
§ 264.601(b)(8)	Existing quality of surface water and soil in the area including all of the sources for contamination and the cumulative effect on surface water and soils.			
§ 264.601(b)(9)	The patterns of land use in the region;			
§ 264.601(b)(10)	The potential for health risks caused by human exposure to waste constituents; and			
§ 264.601(b)(11)	The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.			
§ 264.601(c)	Prevention of any release that may have adverse effects on human health and the environment considering:			
§ 264.601(b)(1), § 264.601(c)(1)	Volume and physical and chemical characteristics of waste including emissions and dispersal of			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	off gases			
	aerosols			
	particulates			
§ 264.601(c)(2)	Effectiveness and reliability of systems or structures to eliminate/reduce/prevent emissions of hazardous waste to the air.			
§ 264.601(c)(3)	Operational characteristics of the unit.			
§ 264.601(c)(4)	Characteristics of the unit and the surrounding area:			
	meteorologic			
	topographic			
§ 264.601(c)(5)	Existing quality of the air including the sources of contaminants and the cumulative impact on the air.			
§ 264.601(c)(6)	The potential for health risks caused by human exposure to waste constituents; and			
§ 264.601(c)(7)	The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.602	Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with §§ 264.601, 264.15, 264.33, 264.75, 264.76, 264.77, and 264.101, as well as meet any additional requirements needed to protect human health and the environment as specified in the permit:			
§ 264.15	General Inspection Requirements			
§ 264.33	Testing and Maintenance of Equipment			
§ 264.75	Biennial Report			
§ 264.76	Unmanifested Waste Report			
§ 264.77	Additional Reports			
§ 264.602	Requires the compliance with the following sections.			
§ 264.101	Corrective action for solid waste management units			
§ 264.602	Other requirements set by the Secretary to protect human health and the environment specified in this permit (for example Risk Assessment).			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.601	Post-closure care. A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with § 264.601 during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of § 264.601 during post closure care. The post-closure plan under § 264.118 must specify the procedures that will be used to satisfy this requirement.			

11.A.4.c.(1)

**REVIEW CHECKLIST
FOR
CLOSURE/POST CLOSURE CARE APPLICATIONS
(§ 264.110 and § 265.110)**

DRAFT

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

DRAFT

Part B Application
Administrative Review
Type of Permit: Closure/Post Closure Care
Facility:
Unit:
Date:

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
S 264.111 S 265.111	The owner/operator must close the facility in a manner that: (a) minimizes the need for further maintenance			
S 264.111(b) S 265.111(b)	Controls, minimizes, or eliminates escape of hazardous waste/constituents to the extent necessary to: protect human health and the environment.			
	post closure escape of hazardous waste.			
	post closure escape of hazardous constituents.			
	post closure escape of leachate.			
	post closure escape of contaminated run-off.			
	surface water.			
	atmosphere.			

DRAFT

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Administrative Review
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Facility:
Unit:
Date:

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.112(b) content of the plan (continued) \$ 265.112(b)	(2) description of how final closure of the facility will be conducted in accordance with \$ 264.111/265.111.	_____	_____	_____
	Estimated maximum extent of operations identified.	_____	_____	_____
	(3) Estimate of the maximum inventory of hazardous waste <u>ever</u> on-site over the active life of the facility.	_____	_____	_____
	Detailed description of the methods to be used during partial closure.	_____	_____	_____
	Detailed description of the methods to be used during final closure.	_____	_____	_____

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Date:

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a change in facility design affects the closure plan.

Yes/No/N.A.

COMMENTS:

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Date:

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REGULATORY CITATION(S): § 264.112(d)	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
	Notification of:			
	Partial Closure			
	Final Closure			
	(1) Notify the Secretary at least 60 days prior to date he expects to begin closure of:			
	Surface Impoundments			
	Waste Piles			
	Land Treatment Units			
	Landfills			
	Or the final closure of any of the above.			
	Notice 45 days prior to closing:			
	Treatment/Storage Tanks.			
	Container Storage.			
	Incinerators.			

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.112(e)	Nothing in this section shall preclude the owner or operator from removing hazardous waste, decontaminating/dismantling equipment at any time before or after notification of partial or final closure.			
\$ 264.113 \$ 265.113	Time allowed for closure:			
\$ 264.113(a)	Within 90 days after receipt of final volume the owner or operator must treat, remove, dispose of, in accordance with the approved closure plan under the provisions of 264.113(d) and (e) and request modification if: (1)(i) activities will of necessity take longer than 90 days.			

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Administrative Review
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Unit:
Date:

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.113(c) \$ 265.113(c)	Demonstrate under the provisions of paragraphs (a)(1) and (b)(1) must: (1) be made for (a)(1) at least 30 days prior to expiration of the 90 day period in paragraph (a).			
	(2) be made for (b)(1) at least 30 days prior to expiration of the 180 day period in paragraph (b).			
\$ 264.113(d) \$ 265.113(d)	The Secretary may allow on the owner or operators request to allow receipt of only non- hazardous waste in a landfill, land treatment unit, surface impoundment,			

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Administrative Review
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Facility:
Unit:
Date:

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
S 264.113(d)(4)	Request to modify and demonstration referred to in paragraphs (d)(1) and (d)(2) submitted to the Secretary no later than 120 days prior to the date the owner or operator receives final volume of hazardous waste.			
S 264.113(e)(1) S 265.113(e)	submitted with the request to modify the permit will be: (i) contingent corrective measures			
S 264.113(e) S 265.113(e)	(ii) Plan for removal of hazardous waste must be in compliance with paragraph (e)(2).			
S 264.113(e) S 265.113(e)	(2) Remove all hazardous waste from the unit: liquids			
	sludges			

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.113(e)(7) \$ 265.113(e)(7)	If the owner or operator fails to implement corrective measures under the provisions of paragraph (e)(4) or fails to make substantial progress under the provisions of paragraph (e)(6) the Secretary shall: (i) notify the owner or operator in writing to begin closure with detailed reasons.			
\$ 264.113(e)(7)(ii) \$ 265.113(e)(7)	provide the owner or operator and the public a comment period no later than 20 days after the date of notice.			
	(iii) if the Secretary receives no written comments the decision becomes final 5 days after the close of the comment period. The Secretary will notify the owner or operator that the decision is final and the revised closure plan if necessary must be submitted within 15 days of final notice.			

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Unit:
Date:

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.116 \$ 265.116	Survey Plat No later than the submission of the certification of closure of each hazardous waste disposal unit the owner or operator must submit to the local zoning authority and the Secretary a survey plat indicating location and bench marks.			
	The plat must be prepared and certified by a professional land surveyor.			
\$ 264.118 \$ 265.118	Post Closure Plans			
\$ 264.118(a) \$ 265.118(a)	Owners and operators must have a written Post Closure Care Plan.			
\$ 264.118(b)(1) \$ 265.118(b)(1)	The Plan must contain a detailed description of planned monitoring activities and frequencies at which they will comply with: Subpart F: description			

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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
S 264.118(d) S 265.118(d)	To Amend the Post Closure Care Plan the owner or operator must submit written notification or a request for the permit modification to authorize a change to the approved Post Closure Care Plan under the provisions of S 124 and S 270. The request must include a written copy of the amended plan.			
	(1) Submitted to the Secretary during the active life of the facility or during Post Closure Care Period.			
S 264.118(d)(2) S 264.112(c) S 265.112(c)	Amendment of the Plan must be a written request to modify request to modify: operating Plans. facility design. approved closure plan.			

Part B Application
Administrative Review
Type of Permit: Closure/Post Closure Care
Facility:
Unit:
Date:

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
RCRA Permit Program
Standard Operating Procedures
Chapter 6, Checklist V
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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
\$ 264.118(d)(4) \$ 265.118(d)(4)	Within 30 days if change occurred during partial or final closure and approved under the provisions of \$ 270 and \$ 124.55.	_____	_____	_____
\$ 264.119 \$ 265.119	Post Closure Care Notices	_____	_____	_____
\$ 264.119(a) \$ 265.119(a)	No later than 60 days after certification of closure of each hazardous waste disposal unit of the facility for hazardous waste disposed of prior to 1-12-81 the owner or operator must identify type of hazardous waste, location of hazardous waste, quantity of hazardous waste, to the best ability of the information known in accordance with the records kept.	_____	_____	_____

DRAFT

Part B Application
Administrative Review
Type of Permit: Closure/Post Closure Care
Facility:
Unit:
Date:

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
RCRA Permit Program
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REGULATORY CITATION(S):	REQUIREMENT:	PROVIDED: Yes/No/N.A.	LOCATION:	COMMENTS:
	(2) The addition of a notation to the deed or instrument indicating removal of the hazardous waste.			

S 264.120 Certification of Completion of Post Closure Care
S 265.120

No later than 60 days after completion of the established Post Closure Care Period for each hazardous waste disposal unit the owner or operator must submit to the Secretary by registered mail, a certificate that the Post Closure Care Plan for the hazardous waste disposal unit was performed in accordance with the specification in the approved Post Closure Care Plan. The certificate must be signed by the owner or operator and an independent, registered, professional engineer. Documentation supporting the independent registered professional engineer's certification must be forwarded to the secretary upon request until he releases the owner or operator from the financial assurance requirement for post closure care under 264.145(i).

II.A.4.d.(4)

**REVIEW CHECKLIST
FOR
LAND TREATMENT DEMONSTRATION
(§ 264.272 and § 270.63)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.63(a)	Requirements for treatment demonstration permit under 264.272(c)			
§264.272(c)(1)	Accurately simulate characteristics and operating conditions including:			
§264.272(c)(1)(i)	Characteristics of waste			
§264.272(c)(1)(ii)	Climate			
§264.272(c)(1)(iii)	Topography of area			
§264.272(c)(1)(iv)	Soil characteristics (including depth)			
§264.272(c)(1)(v)	Operating practices			
§264.272(c)(2)	Demonstration that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone			
§264.272(c)(3)	Demonstration conducted in a manner that protects human health and the environment considering:			
§264.272(c)(3)(i)	Waste characteristics			
	Operating and monitoring measures			
§264.272(c)(3)(iii)	Test duration			
§264.272(c)(3)(iv)	Waste volume			
§264.272(c)(3)(v)	Evaluation of potential for migration of hazardous constituents to ground or surface water			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
Permit Type:				
§270.63(a)	1) Treatment or disposal permit (covering only the field test or laboratory analyses)			
§270.63(a)	2) Two-phase facility permit (covering the field tests or laboratory analyses and the design, construction operation and maintenance of the land treatment unit)			
§270.63(b)	Two-phased permit requirements:			
	First phase of the facility permit conditions for conducting the field test or laboratory analyses:			
	- Design and operating parameters (including test or analyses duration(s), and for field tests, the horizontal and vertical dimensions of the treatment zone)			
	- Monitoring procedures			
	- Post-demonstration clean-up activities			
	- Other conditions under §264.272(c) as necessitated by the director			
	Second phase conditions- all Subpart M requirements as they pertain to unit design, construction, operation and maintenance			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.63(c)	Completion of demonstration requires a signed certification (§270.11) that the field tests or laboratory analyses were carried out in accordance with the conditions specified in phase one of the permit			

**CHECKLIST FOR RESEARCH, DEVELOPMENT
AND DEMONSTRATION PERMIT APPLICATION**
(§ 270.65)

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 270.65 Subpart F	Research, Development and Demonstration Permits			
§ 270.65(a)	Explanation as to why the proposed activity is experimental and innovative.			
§ 270.65(a)(3)	Such requirements as the Secretary deems necessary to protect human health and the environment, including but not limited to, requirements regarding:			
§ 270.65(a)(3)	monitoring			
§ 270.65(a)(3)	operation			
§ 270.65(a)(3)	financial responsibility			
§ 270.65(a)(3)	closure			
§ 270.65(a)(3)	remedial action, and			
§ 270.65(a)(3)	such requirements as the Secretary deems necessary regarding testing and			
§ 270.65(a)(3)	providing of information to the Secretary with respect to the operation of the facility.			
§ 270.65(b)	Procedures for public participation			
§ 270.65(c)	The Secretary may order the immediate termination of all operation any time the Secretary determines it is necessary for human health and the environment.			
§ 270.65(d)	Any RD&D Permit is for the period of one (1) year and may be renewed a maximum of three (3) times. Renewal is not automatic and must be applied for and justified			

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
264 Subpart B / 270 Subpart B	GENERAL FACILITY STANDARDS / PERMIT APPLICATION			
§ 264.11	EPA I.D. Number			
§ 270.11	Signatories to the permit application and reports			
§ 270.13	Contents of Part A			
§ 270.13(a)	Activities conducted requiring a RCRA permit			
§ 270.13(b)	Name, mailing address and location of the proposed facility			
§ 270.13(d)(e)	Name, address and telephone number of the owner, and operator of the proposed facility.			
§ 270.13(j)	Specification of type and quantity of hazardous waste, and processes used			
§ 264 Subpart B / § 270.14	GENERAL FACILITY STANDARDS / Contents of Part B			
§ 270.14(b)(1)	General description of the proposed facility			
§ 270.14(b)(2) § 264.13	Physical and Chemical analyses of the hazardous wastes that will be handled at the facility			
§ 264.14(b)	Description of barrier(s) and means to control entry (24-hour surveillance)			
§ 264.14(c)	Description of warning signs			
§ 270.14(b)(4)	Description of security procedures and required equipment			
§ 270.14(b)(5)	Copy of general inspection schedule			

Regulator Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 270.14(b)(7)	Contingency Plan			
§ 270.14(b)(8)	General hazard prevention			
§ 270.14(b)(8)(iii)	Corrective action plan			
§ 270.14(b)(9) § 264.17	Prevention of ignition or reaction of wastes			
§ 270.14(b)(10)	Traffic Plan			
§ 264.13	General Waste Analysis			
§ 264.13(b)	Written waste analysis plan, including parameters and test methods			
§ 264.13(b)(1)	Parameters to be analyzed for in each waste			
§ 264.13(b)(2)	Analytical methods			
§ 264.13(b)(3)	Methods to sample wastes			
§ 264.13(b)(3)(i,ii)	Types of sample (e.g. grab/composite)			
§ 264.13(b)(4)	Frequency of analysis			
§ 264.15	General Inspection Requirements:			
§ 264.15(b)(1)	Inspection schedule			
§ 264.15(b)(1)	Items to be inspected			
§ 264.15(b)(3)	Type of problems for which each item is inspected			

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 264.15(b)(4)	Inspection frequency			
§ 264.15(c)	Remedial action for deteriorated or malfunctioning equipment			
§ 264.15(d)	Inspection log or summary, containing, at a minimum;			
§ 264.15(d)	the date and time of the inspection,			
§ 264.15(d)	the name of the inspector,			
§ 264.15(d)	a notation of the observations made,			
§ 264.15(d)	and the date and nature of any repairs or other remedial actions.			
§ 264.16	Personnel Training in automatic hazardous waste cut-off, shut down of operations, and imminent danger response			
§ 264.16(a)(1); § 264.16(d)(3)	Qualifications of safety personnel			
§ 264.18(a)	Seismic considerations			
§ 264.18(b)	Flood plain description with drawings			
§ 270 Subpart C	PERMIT CONDITIONS:			
§ 270.30	Inspection and entry by Agency personnel			
§ 270.30(a)	Duty to comply			
§ 270.30(b)	Duty to reapply			

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 270.30(c)	Need to halt or reduce activity not a defence			
§ 270.30(e)	Proper operation and maintenance			
§ 270.30(i)(1)	Reporting planned changes			
§ 270.30(j)	Monitoring and records			
§ 270.30(j)(3)	Records for monitoring information shall include...			
§ 270.31(j)(3)(i)	Dates, exact place and time of sampling or measurements			
§ 270.31(j)(3)(ii)	The names of the individuals who performed the sampling or measurements			
§ 270.31(j)(3)(iii)	The dates analyses were performed			
§ 270.31(j)(3)(iv)	The analytical techniques or methods used			
§ 270.31(j)(3)(v)	The names of the individual(s) who performed the analyses			
§ 270.31(j)(3)(vi)	The results of such analyses			
§ 270.30(l)(5)	Compliance Schedules			
Subpart C	PREPAREDNESS & PREVENTION			
§ 264.31	Design and operation of facility to minimize possibility of fires, explosions, or releases			
§ 264.32; § 264.33	Required Equipment and their testing and maintenance			

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 264.34	Access to communication or alarm systems			
§ 264.35	Required Aisle Space			
Subpart D	CONTINGENCY PLAN & EMERGENCY PROCEDURES			
§ 264.51	Purpose and implementation of contingency plan			
§ 264.52	Contents of contingency plan			
§ 264.52(c)	Arrangements with local government agencies			
§ 264.52(f)	Evacuation Plan			
§ 264.53	Copy of Contingency plan at facility and local emergency responders			
§ 264.54	Amendment of contingency plan			
§ 264.55	Emergency coordinator			
§ 264.56	Emergency procedures			
§ 264.56c	Identification of hazardous materials			
§ 264.56(g)	Storage and treatment of released materials after an emergency			
Subpart E	MANIFEST, RECORDKEEPING, REPORTING AND DOCUMENTS TO BE MAINTAINED AT THE FACILITY:			
§ 264.13(b)	General Waste Analysis Plan			

Regulatory Citation(s)	Requirement	Provided: Yes/No/NA	Location	Comments
§ 264.16(d)	Personnel training records			
§ 264.53(a)	Contingency plan			
§ 264.73	Owner/Operator must keep written operating record at the facility			
§ 264.73(b)(1)	Description and quantity of wastes received, treated, stored or disposed of			
§ 264.73(b)(2)	Records on locations and quantity of hazardous wastes within the facility			
§ 264.73(b)(3)	Waste analysis results			
§ 264.73(b)(4)	Records of contingency plan implementation			
§ 264.73(b)(5)	Inspection records			
§ 264.73(b)(6)	Ground water monitoring, testing or analytical data, and corrective action where required by Subpart F			
§ 264.73(b)(7)	For off-site facilities, notices to generators as specified in § 264.12(b)			
§ 264.142(d)	Closure plan and post-closure cost estimates			

Environmental Protection Agency

Friday
July 27, 1990

Part II

**Environmental
Protection Agency**

40 CFR Parts 264, 265, 270, and 271
**Corrective Action for Solid Waste
Management Units at Hazardous Waste
Management Facilities; Proposed Rule**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, 270, and 271

[FRL-3403-8; EPA/OSW-FR-90-012]

RIN 2050-AB42

Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency is today proposing requirements under the Resource Conservation and Recovery Act (RCRA) for corrective action for solid waste management units (SWMUs) at facilities seeking a permit under section 3005(c) of RCRA. This proposal will establish procedures and technical requirements for implementing corrective action under section 3004(u) of RCRA.

Today's proposal would create a new subpart S in the RCRA part 264 regulations to define requirements for conducting remedial investigations, evaluating potential remedies, and selecting and implementing remedies at RCRA facilities. It also proposes to amend the RCRA part 270 permit requirements, make conforming changes to part 264 and 265 facility closure information requirements, and establish standards for States to become authorized to administer corrective action requirements.

DATES: Written comments on this proposed rule should be submitted on or before September 25, 1990.

Public hearings on this proposed rulemaking are scheduled as follows:

- October 9, 1990 in San Francisco, CA.
- October 12, 1990 in Washington, DC.

ADDRESSES: The public hearings will be held at the following locations:

- October 9, 1990 at the Hyatt Regency San Francisco in Embarcadero Center, 5 Embarcadero Center, San Francisco, CA 94111 (415-788-1234); and
- October 12, 1990 at the Omni-Shoreham Hotel, 2500 Calvert Street NW., Washington, DC 20008 (202-234-0700).

Those individuals who wish to present oral testimony at either of the public hearings must request an opportunity to be heard. Requests must be made in writing to Thes McManus, Hearings Clerk, Office of Program Management (OS-305), U.S. Environmental Protection Agency, 401 M

Street SW., Washington, DC 20460. The request should reference the RCRA Corrective Action Proposed Rule, Regulatory Docket No. F-90-CASP-FFFFF. Unless otherwise requested in writing, individuals will be scheduled 10-minute time segments to present oral testimony. Time segments will be allotted based on the order in which the written requests are received. Written requests must be received by the end of the written comment period.

Written comments on today's proposal should be addressed to the docket clerk at the following address: U.S. Environmental Protection Agency, RCRA Docket (OS-305), 401 M Street SW., Washington, DC 20460. One original and two copies should be sent and identified by regulatory docket reference number F-90-CASP-FFFFF. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. Docket materials may be reviewed by appointment by calling (202) 475-9327. Copies of docket materials may be made at no cost, with a maximum of 100 pages of material from any one regulatory docket. Additional copies are \$0.15 per page.

FOR FURTHER INFORMATION CONTACT: General questions about the regulatory requirements under RCRA should be directed to the RCRA/Superfund Hotline, Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC 20460, (800) 424-9348 (toll-free) or (202) 382-3000 (local). For the hearing impaired, the number is (800) 553-7672 (toll-free), or (202) 475-9652 (local).

Specific questions about the issues discussed in this proposed rule should be directed to David M. Fagan, Office of Solid Waste (OS-341), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202) 382-4740.

SUPPLEMENTARY INFORMATION:

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1. Authority

These regulations are issued under the authority of sections 1003, 1006, 2002(a), 3004(u), 3004(v), 3005(c), and 3007 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6924 (a), (u), and (v), and 6925(c).

II. Background

Prior to passage of the Hazardous and Solid Waste Amendments of 1984 (HSWA), statutory authorities and promulgated regulations for compelling corrective action at facilities regulated under subtitle C of the Resource Conservation and Recovery Act (RCRA) were limited to the following: (1) Section 7003 of RCRA, which provides EPA enforcement authority to take action where solid or hazardous waste may present an imminent and substantial endangerment to human health or the environment; (2) section 3013 of RCRA, which provides authority for requiring investigations where the presence of hazardous waste or releases of hazardous waste may present a substantial hazard to human health or the environment; and (3) 40 CFR part 264, subpart F, which provides a regulatory program to address releases

of hazardous wastes and hazardous constituents to ground water from "regulated units." ("Regulated units" are defined in 40 CFR 264.90 as surface impoundments, waste piles, land treatment units, and landfills which received hazardous waste after July 26, 1982.) Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), provides a broad authority, similar to RCRA section 7003, to take abatement actions to remediate any actual or potential imminent and substantial endangerment caused by actual or threatened releases of hazardous substances.

The 1984 HSWA amendments substantially expanded corrective action authorities for both permitted RCRA facilities and facilities operating under interim status. Section 3004(u) of HSWA requires that any permit issued under section 3005(c) of RCRA to a treatment, storage, or disposal facility after November 8, 1984, address corrective action for releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at the facility. These permits will contain schedules of compliance where corrective action activities cannot be completed prior to permit issuance. In addition, facility owners or operators must demonstrate assurances of financial responsibility for completing the required corrective actions. Section 3004(v) authorizes EPA to require corrective action beyond the facility boundary where appropriate. Section 3008(h) provides EPA with authority to issue administrative orders or bring court action to require corrective action or other measures, as appropriate, when there is or has been a release of hazardous waste or hazardous constituents from a RCRA facility operating under interim status.

III. Purpose of Today's Rule

The purpose of today's rule is to establish a comprehensive regulatory framework for implementing the Agency's corrective action program under RCRA. This rule defines both the procedural and substantive requirements associated with sections 3004(u) and 3004(v). While the new corrective action authorities became effective on their date of enactment (November 8, 1984), today's proposed rule is intended to establish a comprehensive regulatory framework for these statutory authorities. The proposal should serve to promote national consistency in implementing this important component of the RCRA

program, and will establish standards to which States seeking authorization for section 3004(u) corrective action must demonstrate equivalence. In addition, this rulemaking provides a procedural vehicle for the regulated community and other interested parties to comment on the Agency's regulatory intentions for this program.

The following sections of this preamble provide a detailed explanation of the background and specifics of today's proposed rulemaking. Section IV discusses implementation of the corrective action program to date. Section V provides an overview of the regulatory program proposed today and the management philosophy which led to this proposal. Section VI provides a section-by-section analysis of the proposed rule. Section VII examines the relationship of today's rule to other environmental programs. Section VIII discusses public involvement in the corrective action program, while section IX provides information on State authorization for the new program.

IV. EPA's Implementation of the Corrective Action Program To Date

Since 1982, the RCRA program has been implementing the subpart F corrective action requirements for releases to ground water from regulated units through permits. Since November 1984, the HSWA corrective action requirements, which were effective immediately, have been implemented on a case-by-case basis in individual facility permits or section 3008(h) corrective action orders. To implement the HSWA corrective action program to date, EPA has issued several regulations and guidance documents. This section describes those rules and guidance documents, the current status of corrective action activities in the permitting and enforcement programs, and the availability of technical guidance documents pertaining to corrective action.

A. Pre-HSWA RCRA Corrective Action

EPA's base permit regulations, promulgated under pre-HSWA authority, establish a program for monitoring and remediating releases to ground water from regulated hazardous waste management units (40 CFR part 264, subpart F, discussed below), and reporting of releases from permitted units (under 40 CFR part 270). These regulations were established in 1982 under the general statutory authority in section 3004(a) of RCRA.

Under current subpart F regulations, the corrective action requirement (§ 264.100) is the third step of a three-phase program for detecting,

characterizing, and responding to releases to the uppermost aquifer from regulated units. The first phase, called detection monitoring, requires facility owners or operators to monitor ground water at the downgradient edge of the waste management boundary for indicator parameters or constituents that indicate the likelihood of a release. If a release is detected, the owner/operator tests for all appendix IX (of 40 CFR part 264) constituents, and a ground-water protection standard (GWPS) is established for every appendix IX constituent detected above background levels. Under the second, or compliance monitoring phase of the program (which is triggered when the release is confirmed), the owner/operator is required to perform additional investigations to characterize the nature and extent of contamination. In the third and final stage—corrective action—the owner/operator is required to remove or treat in place all contaminants present in concentrations above the ground-water protection standard beyond the compliance point.

The ground-water protection standards established under subpart F are set at either the background levels, maximum contaminant levels (MCLs) for 14 specific constituents, or alternate concentration limits (ACLs). MCLs are contaminant concentration levels which represent the maximum permissible level in drinking water supplies as promulgated by the EPA under the Safe Drinking Water Act. ACLs are contaminant concentration levels determined by the Agency to be protective of human health and the environment based on site-specific circumstances. Proposed revisions to the existing subpart F regulations to create a program consistent with today's proposal for subpart S are expected to be published shortly in the Federal Register. A discussion of the relationship between this proposal and the proposed amendments to subpart F is included in section VII.C of this preamble.

B. July 15, 1985, Codification Rule (50 FR 28702)

On July 15, 1985, EPA promulgated regulations that codified the statutory language of the new section 3004(u) corrective action authority of HSWA (see 50 FR 28702, 40 CFR 264.90(a)(2) and 264.101). In particular, the July 1985 Codification Rule amended 40 CFR part 264, subpart F by adding new § 264.101, which essentially reiterated the statutory language of section 3004(u).

In addition, the preamble to the July 1985 Codification Rule defined the Agency's jurisdiction under the new

authorities by interpreting a number of key terms in the statutory language. Specifically, the preamble discussed EPA's interpretations of the terms "facility," "solid waste management unit," and "release," in relation to the new corrective action authorities. (EPA is proposing to codify these definitions, with some modifications, in today's rule.) The preamble also provided the Agency's interpretation of the authority conferred on it through section 3008(h), the interim status corrective action authority. A detailed discussion of the Agency's interpretation of the section 3008(h) authority was provided in a December 16, 1985, guidance memorandum entitled "Interpretation of section 3008(h) of the Solid Waste Disposal Act." A copy of that memorandum may be found in the docket established for this rulemaking.

C. December 1, 1987, Codification Rule (52 FR 45788)

On December 1, 1987, EPA issued a companion to the July 1985 Codification Rule that further modified the part 264 and part 270 hazardous waste management regulations to implement the new statutory provisions of HSWA (see 52 FR 45788). This Second Codification Rule addressed issues arising from the new amendments rather than codifying requirements imposed directly by the statute. Three elements of that rule relate to the new HSWA corrective action requirements: Permit application requirements for solid waste management units (SWMUs), corrective action beyond the facility boundary, and corrective action for injection wells with permits-by-rule.

The Second Codification Rule amended the existing part B permit application requirements of § 270.14 by adding a new provision (§ 270.14(d)) that requires certain information pertaining to solid waste management units at the facility applying for a RCRA permit. The new provision requires descriptive information on all solid waste management units at the facility, and all available information pertaining to any past or current releases from these units. The provision also requires facility owner/operators to perform sampling and analysis as required by EPA to assist in determining whether or not releases have occurred from solid waste management units at the facility.

The Second Codification Rule also amended §§ 264.100 and 264.101 of the RCRA part 264 regulations to codify section 3004(v) of RCRA. This statutory provision requires facility owner/operators to address corrective action for releases that have migrated beyond

the facility boundary, unless the owner or operator demonstrates to EPA that, despite his or her best efforts, s/he was unable to obtain the necessary permission to undertake the required actions (see §§ 284.100(e) and 284.101(c)). This new provision applies to releases from all solid waste management units, including releases to the uppermost aquifer from regulated units. Moreover, section 3004(v) makes it clear that the provision applies to certain interim status units (section 3004(v)(2)), as well as units at permitted facilities (section 3004(v)(1)). Where access to off-site property is denied, EPA may require that certain measures be taken on site to mitigate the off-site contamination (e.g., source control measures). As will be discussed later, EPA is today proposing changes to these regulatory provisions.

The Second Codification Rule also included new provisions governing the implementation of corrective action requirements through RCRA permit-by-rule for Class I hazardous waste injection wells (see §§ 270.60(b)(3), 144.1(h), 144.31(g)). Under 40 CFR 270.60, the corrective action requirements of § 284.101 must be addressed in order to obtain a permit-by-rule for a hazardous waste injection well. Since today's proposal will replace § 284.101, these facilities will be required to comply with today's proposed subpart S regulations in the same manner as other facilities which receive permits under section 3005(c) of RCRA.

The Second Codification Rule also clarified that a Class I hazardous waste injection well with a UIC permit issued after November 8, 1984, does not have a RCRA permit-by-rule until the corrective action requirements are imposed at the entire facility. Further, the Second Codification Rule clarified that a Class I injection well that received a UIC permit retains interim status under RCRA until corrective action requirements (if necessary) are imposed through a RCRA rider permit.

D. Proposed Rule, Financial Assurance for Corrective Action (51 FR 37854)

On October 24, 1986, EPA proposed new amendments to the financial responsibility standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities (hereinafter referred to as FACA—see 51 FR 37854). This proposed rule provided a regulatory framework for implementing the statutory requirement of section 3004(u) (codified in §§ 284.101 and 284.90(a)(2)) for demonstrating financial assurance for the costs of corrective actions.

The 1986 FACA proposal set out a detailed set of procedures implementing the section 3004(u) financial assurance requirements. These procedures addressed: (1) The timing of financial assurance demonstrations; (2) cost-estimating procedures, including the periodic adjustment of cost estimates, for determining the amounts of required financial assurance; and (3) permissible financial assurance mechanisms, including their required wording and allowable combinations of mechanisms. EPA is today proposing specific language which will clarify when financial assurance for corrective action must be demonstrated and when adjustments to the coverage levels will be required. With respect to all other procedural aspects associated with the FACA requirements (e.g., the set of acceptable mechanisms or use of a mechanism for multiple financial responsibilities), EPA intends to use the FACA proposal as general guidelines for examining, on a case-by-case basis, the adequacy of the financial assurances. Financial assurance for corrective action is discussed more fully in section VII.C.5 of this preamble.

E. National RCRA Corrective Action Strategy (51 FR 37808) and the RCRA Corrective Action Outyear Strategy (Fall, 1989)

In October 1986, EPA issued a draft "National RCRA Corrective Action Strategy" to inform the Regions, States, regulated community, and the public of the Agency's overall plans for implementing the HSWA corrective action authorities. The Strategy provided an overview of the HSWA corrective action authorities and the universe of RCRA facilities subject to these authorities, and described the basic process for identifying, investigating, and remediating releases at RCRA facilities. It also discussed the Agency's plans for establishing priorities for corrective action, the relationship between permitting and enforcement authorities, factors influencing the management of corrective action, and the relationship between EPA and the States in implementing this program.

The Agency received a number of comments on the draft strategy, many of which are reflected in the content of today's proposed rule. Today's proposal, which addresses in detail most of the elements of the draft strategy, effectively finalizes the strategy.

Although some portions of the draft strategy, such as the Agency's plans for prioritizing RCRA facilities for corrective action, are not fully addressed in today's proposal, they are

the subjects of recommendations contained in the RCRA Corrective Action Outyear Strategy (CAOS), published in the Fall of 1989. These recommendations outline a management approach for the corrective action program that is realistic and workable in light of the many challenges that EPA and the States will face in implementing this program over the next several years. While some of the CAOS recommendations can be directly implemented, others will be addressed in detail in forthcoming guidance.

F. Implementation of the HSWA Corrective Action Program

To implement the corrective action program to date, EPA has developed a general process to assure that actions taken are commensurate with the problem presented. In this process, each stage serves as a screen, sending forward to the next step those facilities or units at a facility which the Agency has found to be a potential problem, and eliminating from further consideration units and facilities where the Agency has discovered no current environmental problem. The Agency intends to provide sufficient flexibility in this process to facilitate timely abatement of environmental problems.

RCRA facilities are generally brought into the corrective action process at the time the Agency is considering a permit application for the facility, or when a release justifying action under section 3008(h) is identified. The process begins with an Agency-conducted RCRA Facility Assessment (RFA), which is analogous to the Superfund Preliminary Assessment/Site Investigation (PA/SI). The RFA includes: (1) A desk top review of available information on the site; (2) a visual site inspection to confirm available information on solid waste management units at the site and to note any visual evidence of releases; and (3) in some cases, a sampling visit, to confirm or disprove suspected releases. If, after completion of the RFA it appears likely that a release exists, the Agency typically develops a schedule of compliance, to be included in a facility's RCRA permit, for further studies and actions the permittee must undertake to fulfill the responsibilities imposed by section 3004(u). Alternatively, the Agency might issue an order pursuant to section 3008(h) to compel corrective action.

The second stage of the corrective action process is the RCRA Facility Investigation (RFI). The RFI is undertaken when a potentially significant release has been identified in the RFA; its purpose is to characterize

the nature and extent of contamination at the facility, and it is analogous to the Remedial Investigation (RI) process of the Superfund program. Typically, the RFI will be focused on specific concerns identified in the RFA and will be staged to avoid unnecessary analysis. When the Agency determines, on the basis of data generated during the RFI or other information, that cleanup is likely to be necessary, the owner/operator will be required to conduct a Corrective Measure Study (CMS) to identify a solution for the problem at the site. Once the Agency selects the remedy for the facility, the Agency will either issue a followup section 3008(h) order (in the case of an interim status facility), or modify the permit, and the remedy will be implemented by the owner/operator with Agency oversight.

In certain situations, the Agency may require an "interim measure" at the facility without waiting for the final results of the RFI or the CMS. Interim measures are actions required to address situations which pose a threat to human health or the environment or to prevent further environmental degradation or contaminant migration pending final decisions on required remedial activities. Superfund generally uses the removal authority provided under section 104 of CERCLA to accomplish this same objective where expedited response and/or emergency actions are needed.

Currently, implementation of the corrective action program is being undertaken by EPA, with assistance from State agencies. Six States have been authorized to date to implement the HSWA corrective action program.

The general corrective action process described above is carried forward in today's proposal. However, today's proposal will describe the requirements in greater detail, and will provide the public an opportunity to comment on this approach.

More detailed information about each of the phases of the corrective action program as implemented to date can be found in the guidance documents referenced below. Additional guidance will be developed in the future.

1. *RCRA Facility Assessment Guidance* (Final, October, 1986). This document can be obtained through the National Technical Information Services (NTIS), 5285 Port Royal Rd., Springfield, VA—(703) 487-4850. Document Number PB87-107769.

2. *RCRA Facility Investigation Guidance* (Interim Final, May, 1989). For further information, contact: Jon Perry—(202) 382-4863.

3. *Corrective Action Plan* (Interim Final, May, 1988). For further information, contact: (202) 382-4460.

4. *Interim Measures Guidance* (Interim Final, May, 1988). For further information, contact: Tracy Back—(202) 382-3122.

V. Approach to Corrective Action in Today's Rule

Together with the National Contingency Plan (NCP), which EPA recently promulgated (March 8, 1990, 55 FR 8666), today's proposal defines EPA's overall approach to the cleanup of environmental contamination resulting from the mismanagement of hazardous and solid waste. Today's proposal will establish a regulatory framework for corrective action under section 3004(u) of RCRA and will provide guidelines for corrective action orders imposed through administrative orders under section 3008(b) of RCRA. Substantive provisions of the rule, when promulgated, generally will be applicable to response actions under CERCLA involving releases of hazardous waste (including hazardous constituents). These provisions may also be "relevant and appropriate" to other CERCLA response actions.

This section of the preamble briefly summarizes EPA's basic approach to RCRA corrective action, the fundamental cleanup goals of the program, and the major elements of today's rule.

A. Priorities and Management Philosophy for RCRA Corrective Action

Approximately 5,700 facilities are currently in the RCRA subtitle C universe, and therefore are potentially subject to corrective action requirements. These facilities are likely, together, to have as many as 80,000 SWMUs. Many of these facilities, EPA believes, will require some level of remedial investigation and corrective action to address past or current releases.

The level of investigation and subsequent corrective action will vary significantly across facilities. This regulation would ensure that variation can be accommodated by recognizing that the necessary scope of investigations and studies may be different depending upon the situation presented. It is the Agency's intention that State and Regional personnel have the ability to require investigations sufficient to fully characterize the facility and assess necessary actions. In many cases the problem will pose less risk or be less complex than a major Superfund site listed on the National Priorities List. Therefore, the Agency

expects that, for the most part, RCRA cleanups will be less complex and less expensive than those under CERCLA, and less detailed study will be required before remedial action begins. In some cases, however, the Agency also recognizes that the situation could be comparable to that of a major CERCLA site. In such cases, the Agency will require more detailed analysis and more rigorous oversight. There will also be cases where immediate action is required, while at many other sites, current exposure will be limited and action can be safely deferred. Not only will the nature of cleanup required vary widely, but so too will the characteristics of the facility owner/operators. Some facilities will be sites controlled by financially viable owner/operators, while others will be weak financially; some will be under active long-term management, but at others the owner/operator will be seeking to leave the site; some will be simple facilities with one or two storage tanks, yet others will be major complexes, such as large Federal facilities, with thousands of solid waste management units.

Because of the wide variety of sites likely to be subject to corrective action, EPA believes that a flexible approach, based on site-specific analyses, is necessary. No two cleanups will follow exactly the same course, and therefore the program has to allow significant latitude to the decision maker in structuring the process, selecting the remedy, and setting cleanup standards appropriate to the specifics of the situation. At the same time, a series of basic operating principles guide EPA's corrective action program under RCRA. These principles, which are reflected in today's proposal, are described briefly below.

In managing the corrective action program, the Agency will place its highest priority on action at the most environmentally significant facilities and on the most significant problems at specific facilities. EPA is committed to directing its corrective action resources first to the most environmentally significant problems. The level of threat posed by each of the 5,700 facilities now subject to corrective action varies widely—some are a major concern and require prompt attention; others will require eventual cleanup but do not currently pose a threat; still others have no significant releases and will not require corrective action at all. At some of these facilities, EPA will automatically address corrective action because of its permitting priorities. Under HSWA, statutory deadlines were established for issuance of RCRA

permits to the various types of treatment, storage, and disposal facilities. Each of these permits must, to the extent necessary, require a schedule of compliance for corrective action. However, a substantial universe of facilities that will not receive permits must also be addressed for corrective action. EPA, through its Environmental Priorities Initiative, will review and set priorities for action among these facilities, to ensure that it addresses the most significant first.

It will also be important for EPA to set priorities and focus its efforts within facilities undergoing corrective action through the permitting process. Facilities receiving permits will present the full range of remedial problems; EPA and authorized States must carefully manage their resources at these facilities to ensure that the program effectively focuses on the most pressing problems. The Agency's first priority will be to require interim measures to address sites posing an immediate threat to human health and the environment, and to pursue engineering remedies to control or eliminate further migration of environmental releases. In addition, the Agency will expect prompt remediation of all significant off-site contamination, regardless of whether human or environmental exposure to the contamination is currently occurring. On the other hand, sites where current exposure is low and releases have been effectively controlled will be a lower priority. This is particularly likely to be the case where a site is controlled by a financially viable owner/operator who can ensure that releases are adequately contained and exposure eliminated and who will be capable of undertaking eventual cleanup.

The Agency may rely on "conditional" remedies where prompt remedial action can reduce risk to levels acceptable for current uses, or where final cleanup is impracticable. As a general principle, EPA believes that cleanups must achieve a level appropriate for all actual and reasonably expected uses (The question of cleanup goals is discussed more fully in the next section of this preamble.) RCRA sites subject to corrective action, however, will typically be facilities seeking permits to manage hazardous waste, rather than sites that are widely open to the public and subject to a broad range of uses. As long as the permit is in place and the facility is under the management of the owner/operator, exposure to contaminated media within the facility boundary, such as contaminated soils, would be significantly less than it would be in an

area of unrestricted access, where future uses might include residential or agricultural development. In such controlled use situations, EPA believes that it will often be reasonable to require prompt cleanup to levels consistent with current use, but to defer final cleanup as long as the owner/operator remains under a RCRA permit.

In other cases, it may be readily apparent that cleanup of a site to levels appropriate for unrestricted use will be impracticable. RCRA will have to address a number of intractable problems, such as the cleanup of large, complex sites like municipal landfills, or ground-water cleanup where the bedrock is heavily fractured. In these cases as well, it may be appropriate to rely on "conditional" remedies that control risk during the life of the permit, and rely on institutional controls to prevent future exposure.

EPA expects that these conditional remedies will play a significant role in the implementation of RCRA corrective action, and will enable the Agency and the regulated community to focus their resources most effectively on the most pressing problems. Further discussion of "conditional" remedies is contained in section VI.F.8 of this preamble.

The Agency intends to remove regulatory disincentives to independent action by facility owner/operators and will encourage voluntary cleanups. EPA recognizes that it is important to allow willing and responsible owner/operators to begin corrective action promptly without unnecessary procedural delays. In many cases, the Agency believes that owner/operators will wish to take source control measures, begin ground-water pumping, or take other measures to reduce or eliminate a problem. EPA encourages these activities, and in many cases may find it appropriate to incorporate owner/operator initiated corrective action into permits as interim measures. In addition, the Agency has taken steps to simplify RCRA permit modification procedures for corrective action in its final rule on RCRA permit modifications (53 FR 37912, September 28, 1988). The issue of voluntary corrective action is discussed more fully in section VI.A of this preamble.

Facility investigations and other analyses will be streamlined to focus on plausible concerns and likely remedies, and to expedite cleanup decisions. While remedial investigations must be thorough enough to identify any serious problems, EPA recognizes that its own resources and those of the regulated industry are finite, and therefore that these investigations must be focused on

plausible concerns and conducted in a step-wise fashion, with early screens to determine whether further investigation is necessary. Similarly, although it will be necessary in some cases—particularly at facilities with large and complex cleanup problems—for the owner/operator to analyze a wide range of cleanup alternatives, at most RCRA facilities a more limited analysis will be appropriate. For example, when the appropriate remedy is self-evident (e.g., drum removal and treatment to best demonstrated available technology (BDAT)), it may be unnecessary to evaluate alternatives that would not be adopted. Similarly, where an owner/operator proposes a remedy that is effective and protective, it may be appropriate to approve the remedy and avoid continued studies that would serve only to delay cleanup. In either case, the permit would establish performance standards in the form of cleanup levels. If the remedy failed to achieve these standards, it would have to be modified accordingly. Section VI.H.5 of the preamble discusses in further detail the issue of the technical impracticability of achieving a remedial requirement given a specified remedy.

In managing the corrective action program, the Agency will emphasize early actions and expeditious remedy decisions. One of the Agency's overriding goals in managing the corrective action program will be to expedite cleanup results by requiring sensible early actions to control environmental problems on an interim basis, and using flexible and pragmatic approaches in making final remedy decisions. EPA believes that in many cases it will be possible to identify early in the corrective action process actions which can and should be taken to control exposure to contamination, or to stop further environmental degradation from occurring. Such interim measures may be relatively straightforward, such as erecting a fence or removing small numbers of drums, or may involve more elaborate measures such as installing a pump and treat system to prevent further migration of a ground-water contaminant plume. In another example, where it is obvious that the eventual remedy will require excavation and treatment or removal of contaminated "hotspots," such action should be initiated as an interim measure, rather than deferring it until after final remedy selection.

Final remedy decisions must be based on careful judgments and sound technical information. However, today's proposed rule provides for considerable flexibility in structuring studies and

selecting remedies. It is EPA's intention to use that flexibility to streamline the remedy development/decision process whenever feasible. Corrective Measure Studies should focus on plausible remedial options, and should be scaled to fit the complexity of the remedial situation. Obvious remedial solutions should not be impeded by unnecessary studies. Voluntary cleanup initiatives by owner/operators that are consistent with EPA's cleanup goals will be encouraged as a means of expediting the remedial process.

B. Cleanup Goals for Corrective Action

EPA's goal in RCRA corrective action is, to the extent practicable, to eliminate significant releases from solid waste management units that pose threats to human health and the environment, and to clean up contaminated media to a level consistent with reasonably expected, as well as current, uses. The timing for reaching this goal will depend on a variety of factors, such as the complexity of the action, the immediacy of the threat, the facility's priority for corrective action, and the financial viability of the owner/operator. However, the final goal of cleanup would remain the same.

It should be recognized that EPA's emphasis in today's rule on minimizing further releases means that corrective action will frequently require source removal, source control, and waste treatment. In this respect, today's rule reflects a shift in emphasis from current RCRA corrective action requirements for ground-water releases from regulated units. These requirements currently focus on cleanup of the ground water, but not on control of the source. However, EPA believes that it will frequently be impossible to control releases and ensure the long-term effectiveness of remedies without significant source control. For example, a response action that focuses entirely on remediation of the contaminated medium may meet acceptable cleanup standards in the short term, but continued leaking could lead to unacceptable releases in the future as the source continues to leak. Therefore, today's rule explicitly provides EPA authority to require source control.

One of the more controversial issues related to corrective action is the cleanup goals for contaminated media, or "how clean is clean." EPA has not attempted in this rule or elsewhere to establish specific cleanup levels for different hazardous constituents in each medium. Instead, EPA believes that different cleanup levels will be appropriate in different situations, and that the levels are best established as

part of the remedy selection process. Generally, however, the cleanup must achieve protective levels for future as well as current uses. This is the approach taken in today's proposal.

To be "protective" of human health, EPA believes that cleanup levels for carcinogens must be equal to or below an upperbound excess lifetime cancer risk level of 1 in $10,000$ (1×10^{-4}). As proposed today, cleanup levels would be selected within the upper bound 1×10^{-4} to 1×10^{-6} risk range during the selection of remedy process; however, remedies at the more protective end of the range would ordinarily be preferred. For non-carcinogens, cleanup levels would be set at a level at which adverse effects would not be expected to occur. The application of this approach to specific media is described below.

Ground water. Potentially drinkable ground water would be cleaned up to levels safe for drinking throughout the contaminated plume, regardless of whether the water was in fact being consumed. Where maximum contaminant levels (MCLs) established under the Safe Drinking Water Act are available for specific contaminants, these limits generally will be used; otherwise, the levels would be set within the protective range. Alternative levels protective of the environment and safe for other uses could be established for ground water that is not an actual or reasonably expected source of drinking water.

Soil. Contaminated soil would be remediated to levels consistent with plausible future patterns of use. For example, where access to an area would be unrestricted, cleanup would generally be required to levels appropriate for residential development. At industrial sites or sites dedicated to long-term hazardous waste management, cleanup to less stringent levels might be appropriate, although institutional controls could be necessary to ensure that the use pattern did not change.

Surface water. Releases to surface water should be remediated to levels consistent with potential uses. For example, where surface water is designated for drinking water or is a potential drinking water source, cleanup to drinkable levels would be required. In the case of surface water, environmental effects are likely to be particularly important, because levels protective for humans may often be insufficient for protection of aquatic organisms.

Air. Like soil, air releases from solid waste management units would be of concern where they posed a threat to humans or the environment under plausible current or future use patterns.

Typically, corrective action involving air concerns would involve source control to minimize further releases.

C. Major Elements of Today's Proposal

The principles described above will shape EPA's general approach to corrective action, and they serve as operating assumptions behind today's notice. Today's proposal will establish the basic framework for the corrective action program, both for EPA and authorized States. More specifically, it codifies the procedures for identifying problems and selecting remedies at RCRA facilities; the standards for cleanup, including the establishment of cleanup levels; and the standards for managing cleanups and the wastes generated by cleanups. The major elements of the proposal are summarized below.

Permitting procedures and permit schedules of compliance. Today's proposal, which implements section 3004(u), addresses corrective action at facilities seeking RCRA permits. Corrective action requirements will be imposed on these facilities directly through the permitting process and will be incorporated into permits through schedules of compliance. Typically, before a permit is issued, EPA or an authorized State would conduct an RFA at the facility to determine whether a potential problem existed. Where a likely release was found, the permit would contain a schedule of compliance, as specified in proposed § 264.510, requiring a remedial investigation focusing on the specifics of the likely release. This schedule of compliance would be a part of the permit, and would be successively modified, as necessary, as studies and corrective actions at the facility proceeded.

Trigger or "action levels." Where contamination is identified during the facility investigation, EPA or an authorized State will have to make a decision on whether further analysis, including analysis of potential remedies, is appropriate, or whether the contamination is at an insignificant level. For this reason, the rule incorporates the concept of "action levels"—levels that, if found in the environment, will typically trigger a Corrective Measure Study. Under today's proposal, action levels would be established in the initial permit, or, in some cases, through a permit modification after a release has been identified.

Section 264.521 of the proposal establishes the general principles by which action levels would be established for each medium. To provide

guidance for RCRA permit writers, industry, and the public, today's proposal includes in Appendix A of this preamble values that the Agency believes may be appropriate as action levels for a number of hazardous constituents in different environmental media. These levels would be incorporated individually into permits through the permitting process.

If environmental levels were found to be below the action levels, no further action would ordinarily be required. However, even if an action level has been exceeded, the proposal in § 264.514 would allow the owner/operator to demonstrate that no action was necessary. For example, if ground water were not a potential source of drinking water because of high levels of natural contamination, an owner/operator might successfully argue that cleanup was unnecessary. In this way, action levels would constitute rebuttable presumptions. This issue is discussed in more detail in section VI.E.2 of this preamble.

Corrective Measure Study and remedy selection. Typically, if an action level has been exceeded, the facility owner/operator would be required under the proposal to conduct a Corrective Measure Study (CMS). The purpose of the CMS is to identify and evaluate potential remedies. EPA anticipates that, in a few cases, owner/operators of larger sites with complex environmental problems may need to evaluate several alternative remedial approaches in determining the most appropriate remedy for the facility. For most RCRA facilities, however, it will be possible to abbreviate the analysis, and frequently it may be appropriate for the owner/operator to propose a single alternative, which EPA would approve or disapprove. The proposed regulation in § 264.522 gives the Agency the necessary flexibility to vary the scope of the Corrective Measure Study, depending on the specifics of the situation.

EPA would approve or select the remedy under the standards and criteria proposed in § 264.525. Proposed § 264.525(a) would require the remedy to be protective of human health and the environment, to achieve media cleanup standards, to minimize further releases, and to comply with subtitle C and other waste management standards. In selecting the remedy, the Agency would be required to consider a wide range of factors, such as the remedy's short- and long-term effectiveness and its practicability. These factors are generally comparable to the factors considered by the Agency in selecting

Superfund remedies under § 300.430 of the NCP. (See 55 FR 8666, March 8, 1990.)

Remedies selected under § 264.525 would require formal permit modifications, with opportunity for public comment and rights of appeal. After public comment, the proposed permit schedule of compliance would be amended, (if necessary) and approved, to require that the owner/operator develop a specific remedial design and, after approval of the design, carry out the remedy.

Cleanup levels. The Agency's goal is that remedies clean up to levels determined to be protective of human health and the environment. EPA's general cleanup goals are described in section B above and in section VI.F.5 of this preamble. Specific levels for each facility, consistent with these goals, would be established during the remedy selection process and would be incorporated into the permit and made available for public comment.

Where protective levels could not be attained, or where wastes were left on site in disposal units, long-term management would be required through the permit.

Standards for management of corrective action waste. Proposed §§ 264.550-264.552 would establish standards for conducting corrective action and handling wastes generated during corrective action. If corrective action waste meets the RCRA regulatory definition of hazardous it would have to be handled under the proposal as hazardous waste. With some limited exceptions, new units built to treat, store, or dispose of this waste on-site would have to comply with 40 CFR part 264 performance standards for hazardous waste units. Similarly, hazardous waste shipped off site would have to be sent to RCRA subtitle C facilities.

The rule would also establish more flexible standards for temporary treatment and storage units developed during the course of corrective action.

Completion of remedy. Proposed § 264.530 would establish requirements for remedy completion. Similar to RCRA closures, an independent engineer or other qualified professional would have to certify completion of the remedy, and, in addition, public notice and comment would be required before the Agency made a final decision on whether the remedy had been completed.

In some cases, it might become clear in the course of a remedy that it was not technically practicable to reach the cleanup levels specified in the permit. In this case, proposed § 264.531 would

allow termination of the remedial action and waiver of the cleanup standard. However, if environmental contamination remained at unprotective levels, long-term institutional or other controls would be required to prevent human and environmental exposure.

These requirements and alternatives that the Agency considered are discussed in more detail in the following sections.

VI. Section-by-Section Analysis

A. Purpose/Applicability (Section 264.500)

1. **Conforming Changes to Previous Codification of § 3004(u) and General Discussion.** In today's proposal, EPA is establishing a new subpart S to 40 CFR part 264. This section of the proposed rule sets forth the general applicability of the proposed subpart S regulations. The procedures and technical requirements of subpart S apply to any facility seeking a permit under section 3005(c) of RCRA.

The language of § 264.500(a) through § 264.500(d) reiterates the statutory language of section 3004(u) and section 3004(v). Proposed §§ 264.500(b), (c), and (d) have already taken effect as a final rule following public notice and comment, and are codified at 40 CFR 264.101 (on July 15, 1985, 50 FR 28702; and December 1, 1987, 52 FR 45788). It is not the Agency's intention to reopen for public comment the substance of these pre-existing provisions. The Agency seeks comment only on the minor language changes reflected in § 264.500 (e.g., compare the first sentence of § 264.101(b) with the first sentence of § 264.500(c)), and its proposal to move these provisions from § 264.101 to § 264.500.

Proposed § 264.500(a) clarifies that subpart S applies to corrective action for all SWMUs, including regulated units (defined in § 264.90(a)(2) as any landfill, surface impoundment, waste pile, or land treatment unit that received hazardous waste after July 26, 1982). Corrective action for releases to ground water from regulated units is currently governed by § 264.100. Subpart S will apply to the investigation of releases to ground water from other SWMUs. Releases to other media (air, soil and surface waters) from both regulated units and other SWMUs will also be governed by subpart S.

The Agency intends to modify the § 264.100 standards to be consistent with the applicable sections of subpart S. Thus, regulated units and other SWMUs would be subject to the same standards for identifying and

implementing necessary remedial action. However, regulated units will continue to be subject to slightly different standards for identifying and confirming unacceptable releases to ground water. EPA believes that this distinction between regulated units and the larger universe of SWMUs is justified by the slightly different function of investigating procedures in the context of regulated units: the purpose of the ground-water detection and compliance monitoring programs in subpart F is primarily preventive, rather than essentially responsive like the subpart S program.

The statutory language of section 3004(u), repeated in §§ 264.500 (b) and (c), allows EPA to issue a RCRA permit with a schedule of compliance for investigating and correcting releases, rather than delay issuance of the permit until cleanup has been completed. This will allow more prompt permitting both of interim status facilities, bringing them under the more stringent 40 CFR part 264 standards sooner, and of new facilities, allowing more rapid expansion of treatment, storage, and disposal capacity.

Schedules of compliance, which are enforceable components of the permit, will thus be the primary vehicle by which EPA will specify the procedural and technical requirements that owner/operators must follow to achieve compliance with their subpart S responsibilities. EPA is proposing specific procedural requirements for corrective action schedules of compliance, including requirements associated with modifications to the schedules, in today's rule as amendments to the existing 40 CFR part 270 permit regulations.

As specified in proposed § 264.500(b), subpart S regulations will apply to all facilities seeking permits under subtitle C of RCRA (with the exception of the specific permits identified in proposed § 264.500(f)). Permits subject to subpart S include post-closure permits, as well as permits issued to operating hazardous waste management facilities. Further discussion of the applicability of post-closure permit requirements and their relationship to section 3004(u) corrective action is discussed in the preamble to the Second Codification Rule (December 1, 1987, 52 FR 45788).

2. Exceptions to Applicability.

Today's proposed § 264.500(f) lists four types of RCRA "permits" to which the subpart S regulations would not apply. Each is discussed below.

a. Permits for Land Treatment Demonstrations. Current RCRA regulations for hazardous waste land treatment units (see § 270.63(a) and

§ 264.272) provide for a two-phased permit process in certain circumstances. A "permit" can be issued to a facility with permit conditions which cover only the activities needed to demonstrate that the hazardous waste constituents can be completely degraded, transformed, or immobilized in the treatment zone. Such a permit does not address the full RCRA standards (e.g., financial assurance, general facility standards) that apply to land treatment facilities. In the absence of permit conditions addressing full RCRA facility standards, this first-phase demonstration permit is not considered a full RCRA permit issued under the authority of section 3005. Once the demonstration is successfully completed and the actual operating permit (i.e., second part of the two-phased permit) for the land treatment unit is issued, the subpart S corrective action requirements will apply.

b. Emergency Permits. Section 270.61 of the RCRA regulations provides for issuance of emergency permits, not to exceed 90 days in duration, where immediate actions that involve treatment, storage, or disposal of hazardous waste are necessary to protect human health and the environment. The emergency permit provision was included in the RCRA regulations as a way to provide a mechanism for responses by an owner/operator in true emergency situations which could not be delayed until a full RCRA permit could be issued. In some cases, emergency permits can be issued orally when followed by a written permit within a specified time frame. EPA does not believe it is appropriate to apply subpart S requirements to emergency permits, since such a requirement would render this permit mechanism unworkable for the quick-response situations it was designed to address. If a facility is required to continue to operate under a RCRA permit beyond the allowable time limit for emergency permits, a full operating permit would be required and the facility would be subject to subpart S requirements.

c. Permits-by-Rule for Ocean Disposal Barges or Vessels. Ocean disposal barges and vessels are regulated primarily under the Marine Protection, Research and Sanctuaries Act (MPRSA). The applicable RCRA regulations (40 CFR 270.60(a)) provide that operation of vessels accepting hazardous waste for ocean dumping are deemed to have a RCRA permit if they have obtained and comply with an ocean dumping permit issued under the MPRSA, and comply with certain RCRA administrative requirements. The RCRA permit-by-rule

functions primarily to ensure that certain administrative requirements of the RCRA system—in particular, waste manifest requirements—apply to owner/operators of such vessels. Furthermore, as of November 1988, the Ocean Dumping Ban Act has in effect banned the ocean dumping of industrial waste. While corrective action requirements under subpart S do apply to underground injection control (UIC) facilities and publicly-owned treatment works (POTWs) with National Pollutant Discharge Elimination System (NPDES) permits subject to RCRA permits-by-rule under 40 CFR 270.60, such requirements are necessary to ensure that corrective action requirements apply to releases from all solid waste management units at these facilities not regulated under other laws. MPRSA permits, however, cover all portions of ocean-dumping vessels. (Any onshore storage or treatment facility that may be associated with the ocean disposal operation is required to obtain a separate RCRA permit.) Thus there are no unregulated units within an ocean dumping barge "facility." Furthermore, unauthorized releases from such vessels are subject to regulation under the MPRSA. EPA does not believe it is appropriate to apply subpart S to these vessels because the substantive requirements of section 3004(u) of RCRA are already effectively satisfied by MPRSA requirements.

d. Research, Development and Demonstration Permits. EPA does not believe that RCRA requires the application of section 3004(u) requirements to facilities seeking a research and development demonstration permit under section 3005(g) of RCRA. The conference report on section 3004(u) expressly states that the provision is intended to apply to facilities seeking a permit under section 3005(c) of RCRA. Accordingly, facilities seeking a permit under section 3005(g) would not automatically be encompassed by section 3004(u). Moreover, the reading of section 3004(u) suggested by the conference report is supported by the statutory language of section 3005(g). Section 3005(g)(1) provides that the Regional Administrator shall include such terms and conditions in research and development demonstration permits as s/he deems necessary to protect human health and the environment, including provisions related to monitoring, financial responsibility and remedial action. Section 3005(g)(1) further provides that these provisions may be established case-specifically in each permit without the establishment of

separate regulations. Accordingly, the plain language of section 3005(g)(1), and the legislative history of section 3004(u) both suggest that research and development demonstration permits can be subject to case-specific remedial conditions in the permit as determined to be necessary, and need not be subject to the general corrective action regulations developed under section 3004(u).

3. Voluntary Corrective Action.

Today's proposal for corrective action under the authority of RCRA section 3004(u) applies to RCRA facilities which are seeking permits under RCRA subtitle C. Certain facilities where RCRA hazardous wastes are present, and where corrective action may be needed, are not required to obtain subtitle C permits, and, therefore, are not subject to today's rule. For example, facilities which generate hazardous wastes and accumulate and store the wastes on site for less than 90 days prior to shipment to another facility are not subject to permits or to today's proposed rule.

In a number of cases, owner/operators not subject to a RCRA permit have expressed an interest in proceeding with corrective action in an attempt either to reduce their liability or to preclude subsequent Agency or State actions. Some activities conducted during voluntary corrective action may require a permit if hazardous waste is involved (e.g., excavated waste is placed into a disposal unit or stored on site for more than 90 days).

Current regulations, however, provide significant flexibility for non-permitted facilities to undertake corrective action without a RCRA permit. For example, 40 CFR 262.34 allows generators to accumulate hazardous waste on site in tanks or containers for up to 90 days without a permit or interim status, as long as certain conditions—most importantly compliance with tank and container standards of 40 CFR part 265—are met. In addition, this authority allows generators to treat hazardous waste in tanks during the accumulation period. Under RCRA regulations, a facility owner/operator conducting voluntary corrective action involving hazardous waste could often be considered a generator. One approach to achieving cleanup without triggering the need to obtain a subtitle C permit would be to store or treat such generated wastes in tanks within the accumulation period, so long as the wastes remained on site for less than 90 days, and other conditions of § 262.34 were met.

In addition, voluntary corrective action could take place under a consent decree issued under section 7003 of RCRA. This authority allows EPA (or an

authorized State with comparable authority) to require remedial action in the case of an imminent and substantial threat to human health or the environment, "notwithstanding any other provisions of this Act." Thus, under this authority, EPA could order a facility to take corrective action, while at the same time waiving permit requirements. Any facility interested in taking corrective action under this authority should consult with the appropriate Region or authorized State to explore the possibility of a section 7003 consent order.

The concept of "voluntary" corrective action may also apply to owner/operators who have been issued permits with corrective action schedules of compliance. Some facilities, such as those with small or low-risk contamination problems, will be of relatively low priority for expending the substantial resources required to oversee investigations and studies and make remedy decisions. For those facilities, EPA's oversight attention could be deferred for several years while the program focuses on high priority facilities with major environmental problems. However, owner/operators of lower priority facilities may wish, for various reasons, to expeditiously initiate cleanup actions, rather than wait for EPA to begin actively pursuing corrective action for the facility. EPA strongly encourages owner/operator cleanup initiatives at permitted facilities, and intends to facilitate such actions by minimizing any administrative obstacles which may impede cleanup.

Owner/operators may take a wide range of remedial-type activities at RCRA permitted facilities without triggering the need for formal approval by the Agency or modification of the permit. Such activities include, for example, treatment, storage, or disposal of any non-hazardous solid wastes; excavation of hazardous wastes for disposal off site; less-than-90-day storage or treatment of hazardous wastes in tanks; and treatment of contaminated ground water in an exempt wastewater treatment unit. However, some activities which may be necessary to achieve corrective action goals at the facility would require a permit modification. Such activities might include creation of a new hazardous waste land disposal unit, consolidation and/or movement of hazardous wastes between SWMUs at the facility, or construction (or movement on site) of a new hazardous waste incinerator to manage corrective action wastes.

The Agency intends to pursue an approach to this type of "voluntary" corrective action which will provide sufficient Agency oversight over cleanup activities to prevent possible adverse effects of cleanup actions without creating disincentives to owner/operators who wish to take a proactive position vis-a-vis their corrective action responsibilities. This approach would encourage the owner/operator to notify EPA and the State of any remedial-type activities being undertaken at the facility, even though the activities are not subject to formal Agency approval. For proposed cleanup activities that are subject to permit modification requirements, the owner/operator would be required to submit a request for a Class I, II or III permit modification, or a request for temporary authorization for the activities. (See the final permit modification regulations at 53 FR 37912, September 28, 1988.) In the request for a permit modification (or temporary authorization), the owner/operator would be expected to include: (1) A description of the remediation initiative, including details of the unit or activity that is subject to permit requirements; and (2) an explanation of how the proposed action is consistent with overall corrective action objectives and requirements outlined in today's proposed regulation. EPA expects that the corrective action regulations proposed today will offer owner/operators clear guidance in fashioning acceptable remedies and making such showings of consistency.

EPA's review of the application would focus on the units or actions subject to the permit modification requirements; it would not, however, focus on whether the proposed cleanup action as a whole satisfies the subpart S requirements. Rather, EPA will screen the cleanup proposal to ensure that it would not pose unacceptable risks to human health and the environment (e.g., by producing undesirable cross-media impacts) or interfere with attainment of the final remedy at the site (e.g., by creating a new unit over an area of soil contamination which may later need to be treated or removed to health-based levels). Following this review, the Agency would approve or disallow the application.

Where a permit modification is approved under these circumstances, the modification will make clear that the voluntary activities initiated for corrective action purposes may not be the final remedy, and that those activities, when completed, will not necessarily absolve the owner/operator from further cleanup responsibilities at a

later date. This will also hold for cleanup actions reviewed by the Agency that are not subject to permit modifications. It is not possible for the Agency to delegate to owner/operators the ultimate responsibility for ensuring that remedial activities fully satisfy RCRA's statutory requirement for protection of human health and the environment.

The Agency solicits comments on the approach to voluntary corrective action described above.

B. Definitions (Section 264.501)

EPA is today proposing to define five key terms which apply specifically to this subpart.

1. *Facility.* In the July 15, 1985, Codification Rule, EPA interpreted the term "facility" in the context of section 3004(u) to mean all contiguous property under the control of the owner/operator of a facility seeking a permit under subtitle C. This interpretation was upheld in a decision of the U.S. District Court of Appeals (*United Technologies Corporation vs. U.S. EPA*, 821 F.2d 714 (DC Cir. 1987)). Thus, by proposing this interpretation as the definition of facility in today's rule, EPA is not modifying its basic interpretation as previously elaborated for the purpose of implementing section 3004(u). There are, however, several aspects of this definition which merit further clarification.

The definition of facility in today's proposal at § 264.501 is not intended to alter or subsume the existing—and narrower—definition of "facility" that is given in 40 CFR 260.10. That definition describes the facility as "... all contiguous land and structures ... used for treating, storing or disposing of hazardous waste ..." EPA intends to retain this definition for the purposes of implementing RCRA subtitle C requirements, with the exception of subpart S corrective action (including those provisions governing corrective action for regulated units). At the same time, however, the Agency is reviewing its uses of the term "facility" in other parts of the subtitle C regulations to ensure consistent usage.

Today's proposed definition refers to "contiguous property" under the control of the owner/operator. Several questions have been raised as to the Agency's interpretation of "contiguous property" in the context of defining the areal limits of the facility. Clearly, property that is owned by the owner/operator that is located apart from the facility (*i.e.*, is separated by land owned by others) is not part of the "facility." EPA does intend, however, to consider property that is separated only by a

public right-of-way (such as a roadway or a power transmission right-of-way) to be contiguous property. The term "contiguous property" also has significant additional meaning when applied to a facility where the owner is a different entity from the operator. For example, if a 100-acre parcel of land were owned by a company that leases five acres of it to another company that, in turn, engages in hazardous waste management on the five acres leased, the "facility" for the purposes of corrective action would be the entire 100-acre parcel. Likewise, if (in the same example) the operator also owned 20 acres of land located contiguous to the 100-acre parcel, but not contiguous to the five-acre parcel, the facility would be the combined 120 acres. EPA invites comment on these interpretations of contiguous property.

In some cases, adjacent properties may be separately owned by two different subsidiaries of a parent company, where only one of the subsidiaries' operations involves management of hazardous wastes. In such cases, EPA intends to consider the ownership to be held by the parent corporation. Thus, in the example provided, the facility would include both properties.

EPA acknowledges that, in some situations, "ownership" of property can involve a complex legal determination. EPA solicits comment and information on the interpretation offered in general, and specifically on the issue of how ownership or "control" of property should be determined in the context of subsidiary-parent companies.

2. *Release.* Today's proposal includes the definition of "release" articulated in the preamble to the July 15, 1985, Codification Rule. This definition essentially repeats the CERCLA definition of release. Today's proposed definition also includes language from SARA which extended the concept of "release" to include abandoned or discarded barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents.

Although this definition of release is quite broad, section 3004(u) is limited to addressing releases from solid waste management units. Thus, there may be releases at a facility that are not associated with solid waste management units, and that are therefore not subject to corrective action under this authority. (See discussion below which defines solid waste management unit.)

Many facilities have releases from solid waste management units that are issued permits under other environmental laws. For example, stack

emissions from a solid waste refuse incinerator at a RCRA facility are likely to be authorized under a State-issued air permit. Another example would be NPDES (National Pollutant Discharge Elimination System, under the Clean Water Act), or State-equivalent, permits for discharges to surface water from an industrial wastewater treatment system. EPA does not intend to utilize the section 3004(u) corrective action authority to supersede or routinely reevaluate such permitted releases. However, in the course of investigating RCRA facilities for corrective action purposes, EPA may find situations where permitted releases from SWMUs have created threats to human health and the environment. In such a case, EPA would refer the information to the relevant permitting authority or program office for action. If the permitting authority is unable to compel corrective action for the release, EPA will take necessary action under section 3004(u) (for facilities with RCRA permits) or section 3008(h) (for interim status facilities), as appropriate, and to the extent not inconsistent with certain applicable laws (see section 1008(a) of RCRA).

3. *Solid Waste Management Unit (SWMU).* Today's rule proposes the following definition of solid waste management unit:

Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

This definition is also derived from the Agency interpretation discussed in the July 15, 1985, Codification Rule. A discernible unit in this context includes the types of units typically identified with the RCRA regulatory program, including landfills, surface impoundments, land treatment units, waste piles, tanks, container storage areas, incinerators, injection wells, wastewater treatment units, waste recycling units, and other physical, chemical or biological treatment units.

The proposed definition also includes as a type of solid waste management unit those areas of a facility at which solid wastes have been released in a routine and systematic manner. One example of such a unit would be a wood preservative "kickback drippage" area, where pressure treated wood is stored in a manner which allows preservative fluids routinely to drip onto the soil, eventually creating an area of highly contaminated soils. Another example might be a loading/unloading area at a

facility, where coupling and decoupling operations, or other practices result in a relatively small but steady amount of spillage or drippage, that, over time, results in highly contaminated soils. Similarly, if an outdoor area of a facility were used for solvent washing of large parts, with amounts of solvent continually dripping onto the soils, that area could also be considered a solid waste management unit.

For clarification purposes it may also be useful to identify certain types of releases that the Agency does not propose to consider solid waste management units using the "routine and systematic" criterion. A one-time spill of hazardous wastes (such as from a vehicle travelling across the facility) would not be considered a solid waste management unit. If the spill were not cleaned up, however, such a spill would be illegal disposal, and therefore subject to enforcement action under section 3008(a) or section 7003 of RCRA. Similarly, leakage from a chemical product storage tank would generally not constitute a solid waste management unit; such "passive" leakage would not constitute a routine and systematic release since it is not the result of a systematic human activity. Likewise, releases from production processes, and contamination resulting from such releases, will generally not be considered solid waste management units, unless the Agency finds that the releases have been routine and systematic in nature. (Such releases could, however, be addressed as illegal disposal under section 3008(a) or section 7003.) EPA solicits comment on these interpretations, and on the overall definition of solid waste management unit.

EPA recognizes that these interpretations have the effect of precluding section 3004(u) from addressing some environmental problems at RCRA facilities. However, EPA intends to exercise its authority, as necessary, under the RCRA "omnibus" provision (section 3006(c)(2)), or other authorities provided in RCRA (e.g., section 3008(a) and section 7003) or CERCLA (e.g., CERCLA section 104 or section 106), or States, under State authorities, to correct such problems and to protect human health and the environment.

The RCRA program has identified certain specific units and waste management practices at facilities about which questions have been raised concerning applicability of the definition of a solid waste management unit. One such question relates to military firing ranges and impact areas. Such areas are

often potentially hazardous, due to the presence of unexploded ordnance. EPA has decided that such areas should not be considered solid waste management units. There is a strong argument that unexploded ordnance fired during target practice is not discarded material which falls within the regulatory definition of "solid waste." Ordnance that does not explode, as well as fragments of exploded ordnance, would be expected to land on the ground. Hence, the "ordinary use" of ordnance includes placement on land. Moreover, it is possible that the user has not abandoned or discarded the ordnance, but rather intends to reuse or recycle them at some time in the future. In addition, a U.S. District Court decision (*Barcello vs. Brown*, 478 F. Supp. 646, 668-669 (D. Puerto Rico 1979)), has suggested that materials resulting from uniquely military activities engaged in by no other parties fall outside the definition of solid waste, and thus would not be subject to section 3004(u) corrective action.

Another issue which raises questions regarding the definition of "solid waste management unit" relates to industrial process collection sewers. Process collection sewers are typically designed and operated as a system of piping into which wastes are introduced, and which usually discharge into a wastewater treatment system. The Agency believes that there are sound reasons for considering process collection sewers to be solid waste management units. Such sewers typically handle large volumes of waste on a more or less continuous basis, and are an integral component of many facilities' overall waste management system. Program experience has further indicated that many of these systems, especially those at older facilities, have significant leakage, and can be a principal source of soil and ground-water contamination at the facility. Although process collection sewers are physically somewhat unique in the context of the types of units which have traditionally been regulated under RCRA, EPA believes that including them as solid waste management units for purposes of corrective action is well within the discretion provided under the statute for EPA to determine what "units" should be subject to RCRA standards.

EPA recognizes that there may be technical problems associated with investigating releases from process collection sewers, and with correcting leakage. Information and comment are specifically solicited on EPA's tentative decision to treat process collection sewers as solid waste management

units, and on technical approaches and limitations to investigating and correcting releases from such systems.

For essentially the same reasons as described above for process sewers, EPA also proposes to include open (or closed) ditches that are used to convey solid wastes as solid waste management units; comment is also solicited on this interpretation.

4. Hazardous Waste and Hazardous Constituents. Section 3004(u) requires corrective action for releases of "hazardous wastes or constituents." The Agency believes that use of the term "hazardous waste" denotes "hazardous waste" as defined in section 1004(5) of RCRA. Accordingly, today's proposed rule repeats the statutory definition of "hazardous waste" found in that section. The term "hazardous waste" is distinguished from the phrase "hazardous waste listed and identified," which is used elsewhere in the statute to denote that subset of hazardous wastes specifically listed and identified by the Agency pursuant to section 3001 of RCRA. Thus, the remedial authority under section 3004(u) is not limited to releases of wastes specifically listed in 40 CFR part 261 or identified pursuant to the characteristic tests found in that section. Rather, it extends potentially to any substance meeting the statutory definition. However, EPA believes that use of the phrase "hazardous wastes or constituents" (emphasis added) indicates that Congress was particularly concerned that the Agency use the section 3004(u) authority to address a specific subset of this broad category, that is, hazardous constituents.

The term "hazardous constituent" used in section 3004(u) means those constituents found in appendix VIII to 40 CFR part 261. See H. Rep. No. 98-198, 98th Cong., 1st Sess. 60-61, May 17, 1983. In addition, the Agency proposes to include within the definition those constituents identified in appendix IX to 40 CFR part 264. Appendix IX generally constitutes a subset of appendix VIII constituents particularly suitable for ground-water analyses. However, it also includes additional constituents not found on appendix VIII, but commonly addressed in ground-water analysis conducted as a part of Superfund cleanups.

It is EPA's intention that investigations of releases under subpart S focus on the subset of hazardous waste (including hazardous constituents) that is likely to have been released at a particular site, based on the available information. Only where very little is known of waste characteristics, and where there is a

potential for a wide spectrum of wastes to have been released, would the owner/operator be required to perform extensive or routine analysis for a broader spectrum of wastes.

5. *Corrective Action Management Unit (CAMU)*. The definition of CAMU is provided in section VI.J 3.b of today's preamble. This section also provides a thorough discussion of the CAMU concept and of how the Agency intends to define CAMUs in the context of implementing remedies.

C. Remedial Investigations (Sections 264.510-264.513)

1. *General*. The RCRA Facility Investigation (RFI) is the second phase of the RCRA corrective action process, and will typically be preceded by a RCRA Facility Assessment (RFA), conducted by EPA or the State prior to issuance of the permit or section 3006(h) order. The RFA is the first step in the RCRA corrective action process, and is analogous to the Preliminary Assessment/Site Investigation (PA/SI) stage of the Superfund program. The RFA serves as a screen, eliminating solid waste management units (SWMUs), environmental media, or entire facilities from further consideration where the Agency determines that there is no evidence of a release or likelihood of a release that poses a threat to human health and the environment. The RFA also serves to focus the scope of the follow-on remedial investigations by identifying those releases or areas that are of the most environmental concern at the facility. The RCRA RFI is comparable to the Remedial Investigation in the Superfund program. Because of the similarity of the two processes and because of their common goals, the RFI is referred to in this section and in the rule by the more generic term, remedial investigation.

As described above, EPA would require a remedial investigation under proposed § 264.510 if the RFA indicated that a release from a SWMU was likely to have occurred or to be occurring, or, in certain limited circumstances, likely to occur in the future. Requirements for the remedial investigation would be specified by the Agency in a schedule of compliance in the facility's permit. The schedule would typically identify the SWMUs and environmental media that required more detailed investigation as well as the types of investigations required; it would also typically require the owner/operator to develop a plan for conducting these investigations. The permit would also include "action levels" for specific constituents in specific media under investigation. If

subsequent investigation indicated that these action levels had been exceeded, a Corrective Measure Study could be required by the Agency.

EPA has recently issued a guidance document entitled *RCRA Facility Investigation Guidance*, which describes a menu of technical investigations that may be appropriate to conducting remedial-type investigations at RCRA facilities. EPA wishes to emphasize that the nature and scope of remedial investigations for RCRA facilities under proposed § 264.510 will be tailored to the specific conditions and circumstances at the facility. Investigations will be focused on the specific units, releases, and exposure pathways that have been identified by EPA to be of concern. In some cases, the scope of a remedial investigation could be limited to taking several soil samples of a particular area of discolored soils. Likewise, for inactive units that do not contain substantial volumes of volatile organic compounds, remedial investigations will rarely need to address air releases. In defining the nature and scope of remedial investigations at RCRA facilities, EPA will endeavor to minimize unnecessary and unproductive investigations, and to focus resources on characterizing actual environmental problems at facilities.

Today's rule, in §§ 264.511 through 264.513, proposes a regulatory framework (both procedural and substantive) for conducting remedial investigations. For more information on technical approaches to these investigations, readers should refer to the *RFI Guidance*, which has been included in the public record of this rulemaking.

EPA also anticipates that remedial investigations will typically be phased, to avoid unnecessary investigations where a concern can be quickly eliminated. Because of the importance of accurate data, and the likely need to extend or modify the analysis as data are developed, the remedial investigation will often, in addition, require a high level of interaction between the permittee and the Agency. The specific contents and scope of the investigations are described below.

2. *Scope of Remedial Investigations* (§ 264.511). Proposed § 264.511 defines in general terms the scope of remedial investigations which may be required under § 264.510. Proposed § 264.511(a) states the general performance objective that remedial investigations characterize the nature, extent, direction, rate, movement, and concentration of releases, as required by the Agency. The scope and complexity

of remedial investigations will depend on the nature and extent of the contamination, whether the releases have migrated beyond the facility boundary, the amount of existing information on the site, the likely risk at the site, and other pertinent factors. The proposed general performance standard gives considerable flexibility to the Agency in defining the specific scope, level of detail, and data requirements for each remedial investigation. The specific investigation requirements deemed to be appropriate at a given facility will be included in the permit as part of the schedule of compliance.

Proposed §§ 264.511(a)(1)-(7) provide a menu of more specific types of information that may be required in remedial investigations: (1) Characterization of the environmental setting; (2) characterization of solid waste management units; (3) description of the humans and environmental systems which are, have been, or may potentially be exposed to the release; (4) information that will assist the Agency in assessing the risk posed to humans and environmental systems by the release; (5) extrapolations of future contaminant movement; (6) laboratory, bench-scale, or pilot-scale tests or studies to determine the feasibility or effectiveness of treatment or other technologies which may be appropriate in implementing remedies at the facility; and (7) statistical analyses to aid in the interpretation of data required in the investigation.

The *RFI Guidance* describes in detail technical approaches to characterizing the releases and environmental settings in remedial investigations. In addition, the RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (September 1988) provides specific guidelines for characterizing ground-water releases. Therefore, this preamble will not describe in detail these technical procedures.

Section 264.511(a)(1)(i)-(v) describes five types of information that may be required in a characterization of the environmental setting: Hydrogeologic conditions; climatological conditions; soil characteristics; surface water characteristics including sediment quality; and air quality and meteorological conditions. This information would be required as appropriate to address the concerns identified in the RFA. Specific requirements for the facility will be included in the permit schedule of compliance.

Section 264.511(a)(2) would allow EPA to require a characterization of any SWMU from which releases may be

occurring or may have occurred. This characterization, which could include chemical and physical analyses, will often be important in making decisions as to potential source control measures that may be needed. Characterization of wastes contained in SWMUs may involve generation of chemical and physical data about the wastes, their constituent breakdown, volumes, concentrations, and other relevant data. In some cases, unit characteristics such as materials of construction, age, or type and thickness of liners may be relevant to remedy decisions.

Section 264.511(a)(3) proposes that the Agency may require a full " . . . description of human and environmental systems which are or may be exposed to release(s)." The proximity and distribution of exposed populations may indicate the need for interim measures as proposed under § 264.540 of today's rule. Useful exposure information will generally be available at facilities with landfills or surface impoundments, in the form of Exposure Information Reports required under section 3019 of RCRA. The RFA report may also provide useful information on human and environmental systems which may potentially be exposed. Where information available prior to permit issuance does not adequately identify potentially exposed populations, EPA will require this information, as appropriate, to be generated as part of the remedial investigation.

The Agency is also concerned with the potential exposure of sensitive environmental species or systems to releases from SWMUs. As in the Superfund program, the Agency intends to carefully evaluate effects on sensitive environmental systems, including wetlands, estuaries, and habitats of endangered or threatened species.

Section 264.511(a)(4) would provide the Agency with the authority to require information that will assist the Regional Administrator in the assessment of risks to human health and the environment from releases from solid waste management units. Information collected under § 264.511(a)(3) also would be used in the assessment of risk. The risk assessment would integrate information on exposed human and environmental systems and information on contaminant concentrations to assess the magnitude of threats to exposed populations. The Agency may perform a risk assessment to determine whether interim measures are appropriate prior to selecting the final remedy or to evaluate whether a determination is warranted so that no further action is necessary (under proposed § 264.514).

The permittee should refer to chapter VIII of the *RFI Guidance* for information regarding the Agency's expectations for data that may be needed to conduct a risk assessment.

Section 264.511(a)(5) would provide the authority for the Agency to require a permittee to submit information that extrapolates future contaminant movement. Such information could be important in determining whether interim measures will be required to prevent further migration of contamination and what measures are likely to be effective in doing so. In addition, extrapolated contaminant movement will be important in assessing the adequacy of proposed schedules of implementation of the remedy.

Section 264.511(a)(6) would provide the Agency with the authority to require " . . . laboratory, bench-scale, or pilot-scale tests or studies to determine the feasibility or effectiveness of treatment technologies . . . that may be appropriate in implementing remedies at the facility." It is often difficult, and sometimes impossible, to predict the effectiveness of treatment technologies accurately without data from bench- or pilot-scale studies. Experience in the Superfund program has shown that bench-scale and pilot-scale studies can be useful both in developing potential remedies and in predicting the effectiveness of alternative approaches. Typically, such studies would be performed during the Corrective Measure Study (CMS) (which may be required after a contaminant concentration level specified in the permit as an "action level" is exceeded). However, in some cases such studies may need to be initiated during the remedial investigation to prevent delays in cleanups, and the Agency should have the regulatory authority to require this. For example, at SWMUs at facilities where confirmed releases have occurred over a long period of time and where wastes placed in those SWMUs were highly toxic or mobile, it should not be necessary to wait for the CMS phase of the corrective action process to begin to evaluate, on a small scale, the effectiveness of various treatment technologies in achieving protective concentration levels in the contaminated medium.

Section 264.511(a)(7) would provide the authority for the Agency to require a permittee to perform statistical analyses to aid in the interpretation of data collected through remedial investigations required under § 264.510. For example, such statistical analyses may be needed to determine whether

measured concentrations of contaminants exceed action levels.

Section 264.511(b) would authorize the Regional Administrator to specify the constituents and parameters for which samples collected during remedial investigations would be analyzed. Generally, analyses required will be limited to certain hazardous wastes or hazardous constituents listed in appendix VIII of 40 CFR part 261 or appendix IX of 40 CFR part 264 that are known or suspected to have been released from the unit. However, in some cases, where the wastes disposed in the unit are unknown to the owner/operator, or the unit is known to contain a hazardous substance(s) not included on either appendix VIII or IX, referenced above, additional analyses may be required. In the first case, it may be necessary to have an initial analysis which is designed to scan, for example, for all appendix IX constituents. Further analyses may then be limited to constituents which are found to be present in the initial sample. In addition, EPA may stipulate a requirement to analyze for substances not on either appendix VIII or IX (see preamble discussion on the definition of "hazardous waste"). Authority to specify the analyses to be performed, and for which constituents, will be important in ensuring that quality data are developed to accurately characterize releases, and to support no further action decisions that may be appropriate.

3. *Plans for Remedial Investigations (§ 264.512).* Under today's proposed § 264.512, permittees may be required to submit a plan for conducting the remedial investigation if an investigation is determined to be necessary. The Agency considered, but is not proposing, making submittal of such plans an absolute requirement; that is, expressing it as a "shall" rather than a "may". In some cases the Region or State may have extensive knowledge of the facility prior to permit issuance, and may be able to specify, in detail, how the investigations should be conducted. In this situation, it would not be necessary to require the owner/operator to submit a workplan for approval. Likewise, in some other cases the permittee may have begun remedial investigations under an interim status corrective action order, under CERCLA, or on a voluntary basis. Where the workplan developed for investigations prior to permit issuance is determined by the Regional Administrator to be adequate, it will not be necessary to require submission and approval of the current plan—that plan would simply be

incorporated into the permit. In the great majority of cases, however, the Agency believes that plans for remedial investigations will need to be submitted by the permittee. The permit would specify a schedule for submission of the plan, as well as the elements the plan must include. These requirements will generally reflect the complexity of the situation to be addressed. The Agency considered a requirement that would impose a definite deadline for every owner/operator required to submit an RFI plan (e.g., 90 days after permit issuance). Typically 90 days would be sufficient time for an owner/operator to develop and submit a plan for the investigation. However, the circumstances at some facilities may be highly complex (e.g., location above a Karst formation) and may mean that more than 90 days would be required to develop an adequate plan. Further, where the Agency must set priorities to manage a heavy work load, facilities suspected of having serious contamination may be required to submit plans more quickly. Therefore, EPA has not proposed a specific time period within which the plan must be submitted, but the Agency is soliciting comment on whether such an approach is preferable to the more flexible approach in today's proposal.

Plans for conducting remedial investigations would be subject to review and approval or modification by the Regional Administrator. When a workplan submitted for the Regional Administrator's approval does not adequately address all elements of the investigation, the Regional Administrator may either disapprove the plan and return it to the permittee for revision, or make modifications to the plan and return the modified plan to the owner/operator as the approved plan. The latter approach is analogous to the discretion provided the Regional Administrator to modify closure plans submitted by an owner/operator pursuant to § 265.112 during interim status, or through a Notice of Deficiency during the permitting process. An approved plan will establish both requirements applicable to the conduct of the investigation and a schedule for its implementation. Section 264.512(b) would provide regulatory authority for enforcing compliance with the approved plan, which becomes an enforceable part of the permit schedule of compliance. In most cases, it is expected that the initial permit will specify that the plan becomes an enforceable component of the permit upon approval. Alternatively, the permit may be

modified to incorporate the provisions of the approved plan.

Proposed § 264.512(a) lists items that the Regional Administrator may require in the work plan. Such plans should generally call for focused, staged investigations, the scope and emphasis of which will be refined as releases are verified and/or found not to have occurred. The work plans would generally include: A description of overall approach; technical and analytical approaches and methods; quality assurance procedures; and data management procedures and formats to document and track the results of investigations. In addition, the Regional Administrator may impose other elements, as necessary, to assure that work undertaken will be of an adequate quality (and an appropriate level of detail) to serve as the primary basis for decisions on further stages of the corrective action process that may be necessary at the facility.

The description of the overall approach, which could be required under proposed § 264.512(a)(1), would generally include a description of the objectives of the investigation, its schedule, and the qualifications of the persons conducting the investigation. The schedule is particularly important because, when approved, it will become enforceable as part of the schedule of compliance.

A requirement to specify the technical and analytical approaches to be employed (under proposed § 264.512(a)(2)) might include specifications for the location, construction, and frequency of sampling of ground-water monitoring wells. This would be analogous to the types of specifications for wells that are typically in permits for land disposal units.

Submissions of proposed quality assurance procedures under § 264.512(a)(3) would be evaluated to ensure that data generated during the investigation are accurate, and that they can be used with confidence to support the next steps of the corrective action process. Guidance on appropriate quality assurance procedures may be found in the RCRA Facility Investigation Guidance.

Data management procedures and formats for documenting results of the investigation are included in proposed § 264.512(a)(4) to ensure that RFI data and summary results are presented in a clear and logical manner. Studies such as the RFI typically produce large amounts of data, such as laboratory analyses of numerous waste constituents from numerous samples. Effective data management and

presentation will be necessary to ensure that the data can be properly interpreted.

4. Reports of Remedial Investigations (§ 264.513). Proposed § 264.513 would establish the Regional Administrator's authority to require periodic reports that summarize results of remedial investigations. Timing of the reports, as well as specific content requirements, would be detailed in the permit schedule of compliance. The report format may be specified by the Regional Administrator where necessary to ensure presentation of data in an orderly and easily comprehensible fashion.

The Agency considered, but is not requiring in today's proposal, specifying intervals for reports (e.g., such as every 180 days). The Agency believes that there should be flexibility in the timing of submission of reports to reflect the nature of the investigations which may be required at specific facilities. For example, where extensive monitoring-well construction and sampling are necessary, months may pass before significant results are gathered. On the other hand, where limited soil sampling of a few SWMUs is required to confirm or disprove suspected contamination, meaningful results may be achieved more quickly.

Where data generated during the investigation (or which are newly available from other sources) indicate that the investigation should be modified, the Regional Administrator may require such modifications either by negotiation with the facility owner/operator, or through a modification to the schedule of compliance. Modifications could occur, for example, if the investigation revealed that contamination had migrated, or would soon migrate, off site. In such a case, additional activities may be imposed as interim measures to contain the contamination until active, longer term remediation could begin. Further, new information may indicate the need for additional investigations, or the Regional Administrator may need to modify the investigation requirements based on preliminary analytical results.

Proposed §§ 264.513(b) and 264.513(c) would require the permittee to submit a final report of the investigation to the Regional Administrator for approval, and would allow the Agency to require the permittee to add to or otherwise revise the report if it did not fully and accurately summarize the results of the remedial investigation. This authority to require revisions should ensure that adequate information (both in quality and level of detail) is presented to

support further corrective action decisions for the facility.

In addition to the final report, the permittee would be required to submit a summary of the report under proposed § 264.513(b)(2). This summary would also be subject to the approval of the Regional Administrator, and would be mailed to all individuals on the facility's mailing list by the owner/operator. (The facility mailing list, which is required under 40 CFR 124.10(c)(1)(viii), is developed and maintained by EPA as part of the permitting process.) This proposed requirement is an important element of the Agency's overall public involvement strategy for corrective action, which is described in further detail in today's preamble under section VIII. Distribution of the summary in this manner will provide notice to interested parties as to the general nature of the environmental problems at the facility, what releases have been found, and other results of investigations.

Section 264.513(e) would require that the permittee maintain all raw data (such as laboratory reports, drilling logs, and other supporting information) at the facility for the duration of the corrective action activities and any permit period unless the Regional Administrator approves maintaining this information in a different location. Although such data will often be required to be submitted along with investigation reports, this requirement will ensure that when questions do arise concerning interpretation of data or the adequacy of procedures used to obtain and analyze data, the original records will be available for inspection.

D. Determination of No Further Action (Section 264.514)

EPA anticipates that at some facilities releases or suspected releases that are identified in a RCRA Facility Assessment (RFA), and subsequently addressed as part of required remedial investigations, will be found to be non-existent, or otherwise of such a nature that they do not pose a threat to human health or the environment. EPA proposes providing a mechanism by which a permittee may request a permit modification to effectively terminate further requirements in these cases.

Section 264.514 proposes the procedures to be followed by both the permittee and the Regional Administrator when a determination of no further action for the facility is requested. The request for an Agency determination that no further action is required, and the corresponding permit modification request, must be accompanied by supporting documentation that demonstrates that

there are no releases of hazardous waste (including hazardous constituents) from SWMUs at the facility which pose a threat to human health or the environment. (See proposed § 264.514(a)(2).)

Under proposed § 264.514(a) the permittee may request a modification of the facility permit to terminate the schedule of compliance for corrective action based on the findings of remedial investigations. The request would be initiated according to the procedures of a Class III permit modification. (See the September 1988 final permit modification rule.) These procedures would require the permittee to notify all persons on the facility mailing list of the proposed change and publish a newspaper notice concerning the request; both notices must announce the initiation of a 60 day comment period as well as the time, date, and location of an informational public meeting. In addition, a copy of the proposed modification and supporting documentation must be placed in a location accessible to the public in the vicinity of the permitted facility. (In the case of proposed modifications at facilities required to establish an information repository under § 270.36 of today's proposal, this location would be the information repository.) More detailed information concerning the requirements for a Class III permit modification may be found in the rule for permit modifications cited above and the preamble discussion which accompanies it.

Under proposed § 264.514(b), if the Regional Administrator, using all available information (including comments received during the comment period required for Class III modifications), determines that releases or suspected releases investigated either do not exist or do not pose a threat to human health or the environment, the Regional Administrator will grant the requested permit modification.

This determination will be straightforward where the permittee can demonstrate that no release has occurred; however, such a determination may still be supported when a release has occurred, whether the release(s) is either below or above action levels. For example, such a determination may be made when concentrations of hazardous constituents exceed action levels but the contamination is in a highly saline (Class III) aquifer, or where contamination in ground water can be shown to have originated from a source outside the facility. Such a determination would be consistent with the provision made in today's proposal at § 264.525(d)(2)(ii), which allows

certain cleanup exemptions when contamination is present in ground water that is neither a current or potential source of drinking water nor potentially usable for other human purposes. Another example where a no further action determination might be made is where it can be determined that contaminant levels (and the risks posed by them) from a release from a SWMU are insignificant as compared to existing "background" levels (e.g., levels that are naturally occurring, or that have resulted from releases from outside the facility). This determination would be consistent with the provision made in today's proposal at § 264.525(d)(2)(i).

A determination that no further action is required under § 264.514, and the subsequent termination of the permit schedule of compliance for corrective action, does not affect other responsibilities or authorities of the Regional Administrator. For example, responsibilities to include requirements in a permit for air emissions control and monitoring under section 3004(n) are not affected by a determination that no further action is required under § 264.514 (see preamble section VII.C.3 on relationship to section 3004(n) standards). In addition, the authority of the Regional Administrator to modify the permit under § 270.41 at a later date to require corrective action investigations or studies based on new information is not affected. Furthermore, despite a determination under § 264.514, EPA may require continuing or periodic monitoring when site-specific circumstances indicate that releases are likely to occur in the future. For example, for a particular SWMU from which releases have not occurred, it may be reasonable to conclude, based on site-specific circumstances, that releases to ground water might be expected within the next several years (i.e., the term of the permit). In these situations, continued monitoring requirements could be imposed.

Where the permit schedule of compliance has been terminated and the Regional Administrator subsequently determines that a new investigation or remediation is required, the Regional Administrator will initiate a major permit modification under § 270.41 to require further action by the permittee.

E. Corrective Measure Study (Sections 264.520-264.524)

1. *Purpose of Corrective Measure Study (§ 264.520).* Proposed § 264.520 would establish the authority of the Regional Administrator to require the permittee to perform a Corrective Measure Study (CMS). The remedial

investigation should serve to focus the CMS on units which are sources of releases and the media pathways affected by such releases. The CMS is designed to identify and evaluate potential remedial alternatives for the releases that have been identified at the facility; in this respect it is analogous to the Feasibility Study (FS) conducted for CERCLA remedial actions.

2. *Trigger for Corrective Measure Study (§ 264.521)—a. Use of Action Levels.* Action levels are defined in proposed § 264.521. Under proposed § 264.520(a), the Regional Administrator may require the permittee to conduct a Corrective Measure Study whenever concentrations of hazardous constituents in an aquifer, surface water, soils, or air exceed action levels for any environmental medium.

Action levels are health- and environmental-based levels determined by the Agency to be indicators for protection of human health and the environment. The Agency proposes to set action levels for hazardous constituents, a subset of hazardous wastes. Many hazardous wastes, such as some of the wastes listed in 40 CFR 261.22, are not specific constituents at all, but rather are complex mixtures comprised of many constituents. EPA believes that it would not be feasible in most cases to set action levels for such wastes. Conversely, other hazardous wastes are individual constituents that do not appear on appendix VIII to 40 CFR part 261 or appendix IX to 40 CFR part 264. When such wastes (e.g., asbestos) are of concern at a facility, an action level would be specified for that waste.

Where appropriate, action levels are based on promulgated standards (e.g., maximum contaminant levels established under the Safe Drinking Water Act). In other cases, action levels are established by the Regional Administrator on the basis of general criteria (see following discussion). Appendix A provides examples of concentrations derived by EPA according to these criteria for some appendix VIII and IX constituents.

The Agency is proposing the use of action levels because active remediation may not be necessary at all facilities required to perform a remedial investigation under proposed § 264.510. For instance, a remedial investigation may indicate that a suspected release identified in the RFA had, in fact, not occurred, or may indicate that levels of contamination from a past release are unlikely to present a threat to human health and the environment. Therefore, the Agency believes it should establish a trigger that will indicate the need for a

CMS, and below which a CMS would not ordinarily be required.

Action levels will, whenever possible, be incorporated in the permit. The Agency believes it is advantageous to identify action levels in the permit so that the public and the permittee will know in advance what levels will trigger the requirement to conduct a CMS. This approach also minimizes the need for permit modifications later in the process, which could delay ultimate cleanup.

In some cases there may be sufficient information on the nature and levels of contamination at the time of permit issuance to establish the need for a Corrective Measure Study. In such cases, it might not be necessary to include action levels in the permit. However, it is more often likely that remedial investigations conducted after permit issuance will yield the data needed to determine if action levels are exceeded; hence the need to generally include the action levels in the original permit.

A determination that action levels have been exceeded may occur at any point during the RFI, or may not become evident until the RFI is completed. In either case, when such data become available, the permit schedule of compliance will provide for notification of the permittee that the action levels specified in the schedule have been exceeded. The notification, as provided in proposed § 264.520(d) would specify which hazardous constituents exceed action levels, for which media, and when initiation of a CMS is required.

It is the Agency's intention that the action level "trigger" approach as outlined in this proposal serves to identify early in the process the need for initiating a Corrective Measure Study; such studies should typically not be delayed pending completion of all remedial investigations. In many instances it will be appropriate to conduct simultaneously the RFI and CMS for the facility.

Action levels should be distinguished from cleanup standards, which are determined later in the corrective action process. Contamination exceeding action levels indicates a potential threat to human health or the environment which may require further study. Action levels also inform the permittee of the levels below which the Agency is unlikely to require active remediation of releases, and provide a point of reference for suggesting and supporting alternative remedial levels.

Section 264.520 allows, but does not require, the Regional Administrator to require a CMS when contamination exceeds action levels. In some cases, the

permittee may rebut the presumption that a CMS is required when action levels are exceeded. For example, the permittee may establish that the contamination is not due to releases from solid waste management units at the facility. In other instances, the permittee may demonstrate that a CMS is not required (or only a limited CMS is required) if the release is confined to a Class III aquifer meeting the criteria of § 264.525(d)(2)(ii) or to ground water other than Class III for which the actual and reasonably expected uses do not merit further action. In addition, a CMS might not be required if the CMS is triggered by a carcinogenic hazardous constituent that slightly exceeds the action level but is within the 1×10^{-4} to 1×10^{-6} risk range that is protective for the site (see preamble section VI.F.5.b for discussion of risk range). This "rebuttal" of the need for a CMS would generally be made through the process for determination of no further action, proposed in § 264.514.

Conversely, the fact that no contaminants are found to exceed action levels does not preclude the Regional Administrator from requiring a CMS. Section 264.520(b) would allow the Regional Administrator to require a CMS if concentrations below action levels may pose a threat to human health or the environment, due to site-specific exposure conditions. (See discussion in section VI.E.2.h of today's preamble, below.)

In some situations it may not be obvious from the available data whether concentrations in media truly exceed action levels. This situation would arise when some data on a hazardous constituent indicate that it is present at a concentration less than the action level, while other data indicate that it is present at a concentration greater than the action level. In such situations, the Regional Administrator may require the permittee under § 264.511(a)(7) to provide additional data or statistical analyses to aid in the determination under § 264.520 of whether action levels are exceeded. For example, a tolerance, prediction, or confidence interval procedure may be required, in which the action level is compared to the upper limit established from the distribution of the data for the concentration of the constituent.

The Agency considered the alternative of establishing a mandatory requirement to perform a statistical analysis as part of the determination under § 264.520 that action levels have been exceeded. However, the Agency believes that it is unnecessary to make this requirement mandatory, since in

many cases contamination from SWMUs will greatly exceed action levels. The Agency believes that the diversity of SWMUs and contamination scenarios calls for some discretion in the requirement to perform statistical analyses. For example, in some situations, contamination from a SWMU may be known to be extensive in size and concentration. In such situations, statistical analyses are not needed to determine that an action level has been exceeded. In other situations, a contaminant release at a SWMU may not be extensive enough (either in size or concentration) to clearly indicate contamination. In these cases, a statistical test may be required to determine if a release has actually occurred in excess of action levels. The Agency requests comment on its proposed approach of providing discretion to the Regional Administrator in requiring statistical analyses, and on the alternative of making such analyses mandatory in determining whether action levels have been exceeded.

The Agency examined but did not propose two alternatives to requiring the Corrective Measure Study which did not involve the use of action levels. Under one approach, the Agency would have required the permittee to conduct a Corrective Measure Study concurrently with the remedial investigations conducted pursuant to § 264.510. Under this option, the Agency would have used the same trigger for requiring a CMS as is used to require an RFI—the finding of an existing or likely release pursuant to an RFA. This alternative was rejected because of its potential for requiring unnecessary studies.

The second alternative considered by the Agency would have required the permittee to conduct a Corrective Measure Study only after completion of the remedial investigation conducted pursuant to proposed § 264.510 and a determination of the need to protect human health and the environment. If the Agency had adopted this approach, it would not have required the permittee to conduct a CMS until all contamination and contaminant sources at the facility were fully characterized and the need for corrective measures at the facility was established. The Agency rejected the alternative because of the delay that would be associated with conducting these phases of the investigations sequentially even in cases where early data indicate that remediation is highly likely to be required.

The Agency also examined alternative approaches for setting action levels. One alternative would have required a

Corrective Measure Study whenever background levels of contaminants were exceeded. Experience in the subpart F program has demonstrated that the determination of background levels can be a lengthy, controversial process. Furthermore, background levels will often be much lower than health-based levels. Thus, this alternative was rejected, since it might delay the initiation of the CMS and ultimate cleanup, and might often require Corrective Measure Studies even where levels were significantly below health and environmental-based standards.

A second alternative would have required a CMS whenever detection limits were exceeded. This alternative was also rejected, since detection limits can be difficult to define and do not directly relate to the goal of corrective action: that is, protection of human health and the environment.

The Agency also considered but did not adopt an alternative for requiring the Corrective Measure Study that would involve the use of a range of action levels. Under this approach, the Agency would select constituent-specific action levels within the 1×10^{-4} to 1×10^{-6} risk range based on the exposure scenarios proposed under §§ 264.521 (a)(2), (b), (c)(3), and (d), depending on the likelihood that exposure would in fact occur. For example, if the Agency could be convinced that there is a minimal opportunity for human exposure through one medium or several media, an action level could be established at the 1×10^{-6} risk level. This alternative was considered because the Agency is concerned about the possibility that some SWMUs might be triggered into a CMS at the 1×10^{-6} level even though they do not pose a threat to human health and the environment due to a lack of current and low probability of future exposure. Although it is the Agency's view that the proposed regulations have enough flexibility to avoid requiring a Corrective Measure Study where it is not necessary, the Agency is requesting comment on the use of a range of action levels.

The Agency believes the approach proposed in today's rule provides it with the flexibility to require the permittee to investigate corrective measures sufficiently early (whether simultaneously with the RFI or sequentially) in the corrective action process, while minimizing the potential for unnecessary investigations. Experience in the Superfund program suggests that early consideration of potential remedies allows focused investigations and prevents delays

without imposing unnecessary resource burdens on either the permittee or the Agency.

b. *Criteria for Determining Action Levels.* In several cases, EPA has promulgated health-based standards appropriate for action levels for specific media. Where these standards are available, EPA intends to use them as action levels. The most obvious of these are maximum contaminant levels (MCLs), which establish drinking water standards under the Safe Drinking Water Act (SDWA). EPA will use these standards to set action levels for ground water, and, in some cases, for surface water.

In the overwhelming majority of cases, however, promulgated standards will not be available. Nevertheless, health-based levels that have undergone extensive scientific review, but which have not been formally promulgated, are available for many chemicals. The Agency is proposing today in § 264.521(a)(2)(i)-(iv) criteria which enable the Regional Administrator to use such non-promulgated health-based levels to derive action levels.

Concentrations derived from non-promulgated health-based levels that meet the following four criteria included in today's proposal could be used for action levels. First, the concentration must be derived in a manner consistent with principles and procedures set forth in Agency guidelines for assessing the health risks of environmental pollutants, which were published in the Federal Register on September 24, 1988 (51 FR 33992, 34000, 34014, 34028). Second, toxicology studies used to derive action levels must be scientifically valid, conducted in accordance with the Good Laboratory Practice Standards (40 CFR part 792), or equivalent. The Good Laboratory Practice Standards prescribe good laboratory practices for conducting studies related to health effects, environmental effects, and chemical fate testing, and are intended to assure quality data of integrity. The guidelines are for ensuring scientifically valid studies, and also may be useful as guidance. In addition, the Agency guidelines for assessing the health risks of environmental pollutants (cited above) cite several publications which outline procedures for evaluating studies for scientific adequacy and statistical soundness. Third, concentrations used as action levels must (for carcinogens) be associated with a 1×10^{-4} upperbound excess cancer risk for Class A and B carcinogens, and a 1×10^{-6} upperbound excess cancer risk for Class C carcinogens. Finally, for systemic toxicants (referring to toxic chemicals

that cause effects other than cancer or mutations), the action level must be a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of adverse effects during a lifetime. These criteria are similar to those upon which promulgated health-based standards and criteria are based. Action levels derived according to these criteria represent valid, reasonable estimates of levels in media at or below which corrective action is unlikely to be necessary.

As mentioned previously, guidance levels are available for many chemicals. Appendix A of this preamble lists concentrations for selected hazardous constituents in water, soil, and air which the Agency believes meet these four criteria. EPA established these concentrations by an assessment process which evaluated the quality and weight-of-evidence of supporting toxicological, epidemiological, and clinical studies, and which relied on the exposure assumptions in appendix D of this preamble.

The Agency's approach to assessing the risks associated with systemic toxicity is different from that for the risks associated with carcinogenicity. This is because different mechanisms of action are thought to be involved in the two cases. In the case of carcinogens, the Agency assumes that a small number of molecular events can evoke changes in a single cell that can lead to uncontrolled cellular proliferation. This mechanism for carcinogenesis is referred to as "nonthreshold," since there is essentially no level of exposure for such a chemical that does not pose a small, but finite, possibility of generating a carcinogenic response. In the case of systemic toxicity, organic homeostatic, compensating, and adaptive mechanisms exist that must be overcome before the toxic end point is manifested. For example, there could be a large number of cells performing the same or similar function whose population must be significantly depleted before the effect is seen.

The threshold concept is important in the regulatory context. The individual threshold hypothesis holds that a range of exposures from zero to some finite value can be tolerated by the organism with essentially no chance of expression of the toxic effect. Further, it is often prudent to focus on the most sensitive members of the population; therefore, regulatory efforts are generally made to keep exposures below the population threshold, which is defined as the

lowest of the thresholds of the individuals within a population.

Thus, for the chemicals on appendix A which cause systemic toxic effects, the Agency has estimated reference doses (RfDs). The RfD is an estimate of the daily exposure an individual (including sensitive individuals) can experience without appreciable risk of health effects during a lifetime, and is consistent with the threshold concept described above.

For the chemicals on appendix A which are believed to cause cancer, the Agency has estimated carcinogenic slope factors (CSFs). Since the Agency assumes that no such threshold exists for carcinogens, the issue to be resolved in health assessments of carcinogens is the probability of the occurrence of an effect. The CSF, or unit cancer risk, is an estimate of the excess lifetime risk due to a continuous constant lifetime exposure from one unit of carcinogenic concentration (e.g., mg/kg/day by ingestion, $\mu\text{g}/\text{m}^3$ by inhalation). Chemicals which cause cancer and mutations also commonly evoke other toxic effects. Thus, an RfD and CSF may both be available for a single chemical. In these cases, the level which is lower (more protective) should be used as an action level. Generally, the protective level for cancer will be lower.

For carcinogens, EPA believes that action levels corresponding to a 1×10^{-6} risk level (or 1×10^{-5} for Class C carcinogens) generally are appropriate. This is at the higher protective end of the 10^{-6} to 10^{-5} risk range. (See discussion in section VI.F.5 of today's preamble.) Using a value from the high end of this range ensures that the hazardous constituents screened out at this point are those for which corrective measures are unlikely to be necessary.

In adopting the 1×10^{-6} to 1×10^{-5} risk range for this proposed rule, the Agency recognized that 1×10^{-5} risk levels of constituents may not be protective at all sites, due to multiple constituents, multiple exposure pathways, or other site-specific factors.

Thus, the alternative of establishing action levels at the lower protective end of the risk range (e.g., 1×10^{-7}) was rejected since it would be too insensitive a trigger—i.e., it would fail to require a Corrective Measure Study at some sites which may pose a threat to human health and the environment. The Agency believes that the selected risk levels are reasonable points to establish action levels for carcinogens.

Section 264.521(a)(2)(iii) provides some flexibility to the Regional Administrator to consider the overall weight of evidence of carcinogenicity in

setting action levels for carcinogens. EPA has explained its classification scheme for carcinogens based on the weight of evidence for carcinogenicity in its cancer guidelines (51 FR 33992). The constituent concentrations provided as example action levels in appendix A reflect this approach. In this table, known or probable human carcinogens (known as Class A and Class B carcinogens, respectively, under the Agency guidelines) are listed at a 1×10^{-6} risk level, whereas concentrations listed for constituents for which the weight of evidence of carcinogenicity is weaker (known as Class C, or possible human carcinogens under the Agency's guidelines), correspond to a 1×10^{-5} risk level. Some experts have argued that it is inappropriate to weight Class C carcinogens in this way, and that all substances classified as carcinogens should be weighted equally, whereas others argue that Class C carcinogens should be weighted more heavily (i.e., more stringently) because of the greater uncertainty associated with the limited evidence of their carcinogenicity. The Agency solicits comments on how it should handle Class C carcinogens in setting action levels.

Many of the RfDs and CSFs used to derive the concentrations listed in appendix A are available through the Integrated Risk Information System (IRIS), a computer-housed, electronically communicated catalogue of Agency risk assessment and risk management information for chemical substances. IRIS is designed especially for Federal, State, and local environmental health agencies as a source of the latest information about Agency health assessments and regulatory decisions for specific chemicals. (To establish an IRIS account, call Dialcom at (202) 486-0550.) The risk assessment information (i.e., RfDs and CSFs) contained in IRIS, except as specifically noted, has been reviewed and agreed upon by intra-agency review groups, and represents an Agency consensus. As EPA working groups continue to review and verify risk assessment values, additional chemicals and data components will be added to IRIS. IRIS hardcopy will be available through the National Technical Information Service (NTIS). In addition, EPA will routinely update appendix A as new data on hazardous constituents are developed.

c. *Action Levels for Ground Water*
Proposed § 264.521(a) establishes action levels for ground water in aquifers. By specifying the term "aquifer" in this context, the Agency intends to define broadly the type of ground-water

contamination situations that may require Corrective Measure Studies, while triggering such studies only in situations where actual ground-water cleanup is a reasonable remedial approach.

The Agency considered using the term "uppermost aquifer," but decided that this would limit its flexibility in addressing contamination in lower aquifers that are not hydraulically connected with the uppermost aquifer. Such a situation could arise if waste were leaked from the casing of an underground injection well. Thus, the wording of § 264.521(a) will explicitly allow the Agency to address any such unusual instances where solid waste management units have contaminated ground water that is not in an "uppermost" aquifer as defined in § 264.510.

The Agency also considered not using the term "aquifer" in § 264.521(a). This would have required Corrective Measure Studies for ground water to be performed even when the ground water is of negligible use as a resource, such as a small pocket of soil which becomes saturated only episodically. Although contamination in any saturated zone that could act as a pathway transporting contaminants to aquifers could be a concern, the Agency would intend to address those situations in the context of setting action levels for soils (see § 264.521(d)), including "deep soils" that could act as a ground-water contaminant pathway.

EPA has, under a number of statutes, promulgated standards and criteria relevant to protection of environmental media. Among the most important of these are maximum contaminant levels (MCLs) promulgated under the Safe Drinking Water Act (42 U.S.C. section 300(f) *et seq.*), which have been incorporated into this rule as action levels for ground water under § 264.521(a)(1). MCLs promulgated under the Safe Drinking Water Act are maximum concentrations of contaminants allowed in water used for drinking (see appendix B). The use of MCLs for action levels is consistent with current RCRA ground-water protection standards (40 CFR part 264, subpart F), which set the interim primary drinking water standards (MCLs) for 14 constituents (which existed at the time subpart F regulations were promulgated) as ground-water protection standards in the absence of another Agency decision. Currently there are 34 MCLs promulgated, of which six are microbiological contaminants, three are radionuclides, and 25 are organic and inorganic contaminants; the MCLs for

the chemical contaminants are listed in appendix B.

Where MCLs are available for a particular constituent but the ground water at a site is not currently used for a drinking water supply, and is unsuitable for use as a drinking water supply in the future, MCLs will still ordinarily be used as action levels (*i.e.*, to require a CMS); however, cleanup to the MCL might not be required (see section VI.F.5 for discussion of media cleanup standards). The Agency is persuaded that, in cases where ground water is contaminated at levels above action levels, further study is necessary (*e.g.*, to make sure that sources of releases are controlled).

Where MCLs have not been promulgated for hazardous constituents, EPA would develop levels according to the criteria specified in proposed § 264.521(a)(2)(i)-(iv) and described in detail above in this preamble (see section VI.E.2.b). In this analysis, the Agency would use the standard exposure assumptions of two liters a day for a 70 kilogram adult over a 70 year lifetime (see appendix D), assumptions that are used extensively throughout EPA and other agencies. Appendix A lists levels that were developed for water by the Agency according to these principles and which the Agency believes would be appropriate for ground-water action levels. In addition, proposed (but not yet promulgated) MCLs would also typically meet the criteria proposed in § 264.521(a)(2)(i)-(iv) and could serve as ground-water action levels.

Where data are insufficient to develop action levels according to these criteria, the Agency would establish levels according to the procedures in proposed § 264.521(e), which are described in more detail in section VI.E.2.g of this preamble. The Agency solicits comment on the proposed approach and alternative approaches to establishing action levels for ground water.

d. *Action Levels for Air.* Proposed § 264.521(b) identifies criteria for establishing action levels for air, assuming exposure through inhalation of air contaminated with the hazardous constituent. Appendix A lists possible action levels that meet these criteria. The Agency used the following procedures to develop concentrations in air listed in appendix A:

Note: Appendix A action levels are currently taken exclusively from the IRIS data base, and developed using only procedures 1 and 4; this appendix will be modified to include other health-based numbers not currently on IRIS, derived from procedures 2 and 3. This is consistent with current Superfund practices and policy.

1. Where an Agency-verified health-based intake level for inhalation (*e.g.*, RfD) was available, that level was used to calculate the concentration in air.

2. Where an Agency-verified level (as in (1), above) was not available, a level based on a valid inhalation study was used, even if it had not yet gone through the formal intra-Agency verification process.

3. If a level based on an inhalation study (as in (1) or (2) above) was not available, a health-based intake level (*e.g.*, RfD) based on an oral study was used, with a conversion factor of one for route-to-route extrapolation to calculate the concentration in air—except where such an extrapolation factor was determined to be inappropriate. For example, it is not appropriate where a constituent that is a systemic toxicant through the oral route of exposure causes local adverse effects on the lung through the inhalation route. A constituent might also be determined to be an inappropriate candidate for route-to-route extrapolation due to significant differences in metabolism or absorption. Where the extrapolation from oral route to inhalation route of exposure is determined to be inappropriate, and a level based on an inhalation study (as in (1) or (2) above) is not available, appendix A does not list a concentration in air (see section VI.E.2.g for a discussion of how to set action levels where health- and environment-based levels are not available). While the concentrations in air listed in appendix A (and C) are being evaluated further by the Agency with regard to the appropriateness of this route-to-route extrapolation, they will be used only as an interim measure. The Agency will adopt RfDs based on actual inhalation toxicity data as soon as the data become available.

4. The standard exposure assumption for air typically used in Agency risk assessments (*i.e.*, 20m³/day for a 70 kilogram adult for a 70 year lifetime) was used (see appendix D).

Under proposed § 264.521(a)(2), action levels would be measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

The Agency has chosen the facility boundary as the location where air action levels are proposed to be typically measured, for several reasons. Measuring at the facility boundary will have the effect of requiring Corrective Measure Studies to be conducted whenever potentially health-threatening levels of airborne constituents that originate from waste management units

are being released to areas outside the facility property. The Agency recognizes that in some cases this could require owner/operators to study potential remedial solutions where actual remediation of air releases will not be required—under today's proposal, the requirement actually to remediate air releases is tied to actual exposure: *i.e.*, exceedence of health-based levels at the most exposed individual (see the discussion of air cleanup standards in section VLF.7.a of today's preamble). However, under this scenario, if exposure conditions were to subsequently change and trigger the need for corrective action for air emissions, the owner/operator would be able to more expeditiously implement the remedy that had already been developed in the Corrective Measure Study. The Agency believes that measuring action levels at the facility boundary, while environmentally conservative, will not represent an undue burden on owner/operators.

Under today's proposal, the Regional Administrator could, when necessary, require action levels to be measured at one or more locations within the facility. An example would be if individuals were actually residing on the facility property, as might be the case at a Federal facility (*e.g.*, a military base). On-site worker exposure would not generally be a determining factor in establishing locations for action levels, since such exposure is regulated by the Occupational Safety and Health Administration (see further discussion in section VLF.7.a(2) of today's preamble).

The Agency considered, but did not propose, other locations for establishing action levels for air releases. These alternative locations would have involved determining action levels at (1) the unit boundary, or (2) the most exposed individual. The alternative of determining action levels at the unit boundary was rejected as unnecessarily stringent, since it would likely have the effect of very often triggering the need for a Corrective Measure Study, where no actual or potential threat to human health and the environment existed. The option of measuring action levels at the most exposed individual was not chosen because in some cases a CMS would not be triggered based on current locations of receptors, even though future residential development close to the facility were planned and could result in exposure above action levels. The Agency specifically requests comment on the most appropriate location for measuring action levels for the air medium.

e. Action Levels for Surface Water. Proposed § 264.521(c) identifies action levels for surface water. Notwithstanding these action levels, some releases from solid waste management units to surface water may be subject to the National Pollutant Discharge Elimination System (NPDES) pursuant to section 402 of the Clean Water Act (CWA). The CWA prohibits the unregulated discharge of any pollutant to waters of the United States from any point source. Releases to surface waters that are nonpoint sources may be subject to the Nonpoint Source Management Program established under sections 208 and 319 of the CWA. If the Agency discovers releases from solid waste management units which are point sources, but lack an NPDES permit, CWA authorities will generally be used to address the release. It should be understood that the term surface water in this context includes wetlands, as prescribed under section 404 of the CWA. Section 404 permits are required for dredge and/or fill into wetlands.

Proposed § 264.521(c) specifies that State water quality standards established pursuant to section 303 of the CWA that are expressed as numerical values will be used as action levels, where they have been established for the surface water body in question. However, EPA anticipates that such numerical standards may, in some cases, not have been established at the time when remedial investigations are being conducted at RCRA facilities. In these cases, action levels may be established as numeric interpretations of State narrative water quality standards.

Water quality standards both establish water quality goals, and serve as a basis for establishing treatment controls, based on the use or uses which the State designates for the receiving water (*e.g.*, recreation or public water supply). The standards consist of a designated use or uses, and the water quality criteria which will protect such uses. Criteria are expressed as either numeric constituent concentration levels or narrative statements that represent a quality of water that supports a particular use.

In applying narrative standards to specific water bodies, some States have prescribed methods for calculating numeric values for the water body. Such methods vary from State to State in their complexity, the time required to establish the numeric values, and the procedures involved. Although deriving these numeric interpretations from narrative standards will often be straightforward, the Agency expects

that in some situations the derivation of such values could be relatively complex and time-intensive. In such cases, the Regional Administrator could determine that the use of numeric interpretations of narrative water quality standards was not appropriate for the purpose of establishing action levels. EPA emphasizes that the use of such narrative standards must not delay the corrective action process.

Where numeric water quality standards have not been established by the State, and where numeric interpretations of narrative standards are either unavailable or inappropriate (for reasons described above), proposed § 264.521(c)(3) provides that maximum contaminant levels (MCLs) promulgated under the Safe Drinking Water Act will be used as action levels, if the surface water has been designated as a drinking water source by the State (see discussion in previous section on the use of MCLs as action levels in ground water).

In situations where a numerical water quality standard, a numeric interpretation of narrative standards, or an MCL is not available for a particular hazardous constituent in surface water designated by the State for drinking, proposed § 264.524(c)(4) specifies that the criteria under § 264.521(a)(2) (i)-(iv) be used for establishing action levels in surface water, assuming exposure through consumption of the water contaminated with the hazardous constituent. The standard exposure assumptions of two liters/day for a 70 kg adult over a 70 year lifetime in appendix D should be used, unless people also consume aquatic organisms from the surface water. In these cases, the Agency suggests that Federal Water Quality Criteria be used as action levels, since they satisfy the criteria for action levels established under § 264.521(a)(2) (i)-(iv). Federal Water Quality Criteria are concentrations of contaminants determined to be protective of human health and/or aquatic organisms. Criteria for protection of human health are based on exposure through drinking water, as well as exposure through drinking water and ingesting aquatic organisms. Criteria for protection of freshwater/estuarine and marine organisms are also available. EPA has promulgated water quality criteria for 128 pollutants under the Clean Water Act.

In situations where a numerical water quality standard is not available for a particular hazardous constituent in surface water designated by the State for uses other than drinking, proposed § 264.524(c)(5) provides the Regional

Administrator with the flexibility to consider the State-designated use of the surface water in establishing a concentration as the action level. For example, in some surface waters designated for industrial uses, the Agency believes that an MCL may be too sensitive a trigger for a CMS. In other situations, MCLs may be too insensitive a trigger for a CMS (for example, in trout streams). Federal Water Quality Criteria may provide useful guidance in setting action levels under § 264.524(c)(5).

If Federal Water Quality Criteria are used as action levels, the purposes for which such criteria were developed should be considered in determining which criteria are appropriate to use. For example, for a surface water body used for fishing and drinking, the criteria for protection of human health based on drinking water and eating aquatic organisms would be most appropriate. For Class A and Class B carcinogens, the criteria corresponding to a 10^{-6} risk level should be used, whereas for Class C carcinogens, the Agency suggests that the criteria corresponding to 10^{-5} risk level be used. (See discussion of Agency-established classes of carcinogens and relative risk levels considered appropriate in section VI.E.2.c of this preamble.)

If contaminants attributable to releases from a SWMU exceed an action level anywhere in surface water, a Corrective Measure Study may be required. Proposed § 264.521(c) does not specify where in surface waters concentrations should be measured against action levels. In determining appropriate sampling locations, the Agency will generally attempt to specify locations in the surface water where the highest concentrations of hazardous constituents released from SWMUs are expected to occur—i.e., at or near the point or points where releases enter the surface water. However, in some cases, establishing the precise point(s) where releases enter the surface water may be difficult and time-consuming, such as in the case of a ground-water plume in a complex hydrogeologic setting that flows into a lake. In these cases, the Agency would not wish to delay the initiation of a Corrective Measure Study while the point of release is located, if concentrations greater than action levels could already be detected in the surface water.

EPA specifically requests comment on today's proposal for establishing action levels for surface water.

Proposed § 264.520(b), which allows the Regional Administrator to require a CMS when necessary to protect human health and the environment, even when

no action levels have been exceeded, may be particularly important for surface water. For example, the Regional Administrator may determine that a threat from consumption of aquatic organisms exists at levels at or below the MCL, since the MCL does not incorporate exposure through ingestion of contaminated organisms.

A Corrective Measure Study may also be required under § 264.520(b) if the Regional Administrator determines that there is a threat to human health or the environment from contaminated sediments even though action levels for surface water have not been exceeded. The Agency believes it is important to clarify its authority to address sediments contaminated by releases from solid waste management units under sections 3004 (u) and (v) of HSWA, although today's proposal does not establish action levels specifically for sediments. The Agency is currently developing sediment criteria which, when promulgated, may be used as guidance in evaluating contaminated sediments. However, no health-based or environmental levels are currently available which are appropriate as sediment action levels. Thus, until such criteria are developed, the need for Corrective Measure Studies based on sediment contamination will be determined on a case-by-case basis. The Agency requests comment on this approach to addressing sediments.

Finally, the Regional Administrator may require a Corrective Measure Study for surface water under § 264.520(b) when a threat to aquatic health exists at levels at or below action levels. Federal Water Quality Criteria for protection of aquatic health should be used as guidance in making this determination.

f. *Action Levels for Soil.* Proposed § 264.521(d) establishes criteria for establishing action levels for soil, assuming exposure through consumption of the soil contaminated with the hazardous constituent. Action levels would be set on the basis of the exposure assumptions in appendix D, which assume a residential use pattern, with long-term direct contact and soil ingestion by children. Action levels for soil would typically be measured on the surface (generally the upper two feet of earth).

The exception to this approach, is where EPA has already established standards for the cleanup of spilled polychlorinated biphenyls (PCBs), which are regulated under the Toxic Substances Control Act (TSCA). The Agency has determined that the use of these promulgated standards, as action levels and cleanup standards for soil, is relevant to RCRA corrective action. This

policy is also consistent with Superfund policy. The PCB Spill Policy under TSCA is discussed more fully in section VII.B of this preamble.

Although action levels for soils are established using direct contact assumptions most appropriate for surficial soils, it is intended that these action levels will often also be used as a presumption that a CMS may be necessary for contaminated deep soils which may pose a threat to ground water in aquifers. The Agency does not believe that generic action levels based on the potential for hazardous constituents in soil to contaminate ground water can be developed at this time, since the type of soil, distance to ground water, and other site-specific factors, as well as the properties of the hazardous constituent, influence this potential. A permittee may attempt to rebut this presumption by demonstrating that there is no threat to human health and the environment from such deep soil contamination, either through direct contact or migration to aquifers or surface water. Alternatively, § 264.520(b) may be used to require a CMS in situations where deep soils are contaminated below action levels, but pose a threat to ground water in aquifers.

Although estimates of soil intake are not as frequently used by the Agency as are estimates of air or water intake, appendix D provides recommended exposure assumptions for non-carcinogenic and carcinogenic soil contaminants given an unrestricted use scenario. A soil ingestion rate of 0.1 g/day is recommended for carcinogens, and a rate of 0.2 g/day, based on an average child's body weight of 16 kg, is recommended for non-carcinogens.

In the case of non-carcinogenic contaminants, the oral RfD would be used to calculate an action level, or threshold concentration below which adverse effects would not occur, assuming 0.2 gram per day of soil is consumed. Sixteen kilograms represents an average body weight for children aged one to six. The Agency believes these exposure assumptions are reflective of a conservative average scenario in which children ages 1-6 years (i.e., the time period during which children exhibit the greatest tendency for hand-to-mouth activity) are assumed to ingest an above-average amount of soil on a daily basis. The exposure levels estimated in this manner are calculated to keep exposures well below the population "threshold" for toxic effects (see earlier preamble discussion). Since the toxic effect of concern is assumed to occur once the threshold

level is exceeded, the amount of soil ingested on a daily basis becomes of major importance in determining non-carcinogenic effects. Therefore, to account properly for the risk from elevated exposure to non-carcinogenic soil contaminants during early childhood years, it is important that the exposure not be estimated over a lifetime; to do so would "smear" out the peak exposure occurring during the above-mentioned time period of five years and result in the failure to detect an unacceptable exposure level (*i.e.*, a level which exceeds the RFD).

In the case of carcinogens, the action level would be derived by assuming consumption of 0.1 g/day averaged out over a lifetime, based on an adult body weight of 70 kilograms. Because the expression of carcinogenic effects is principally a function of cumulative dose (*i.e.*, the time course of exposure is usually secondary), the Agency believes, in general, that elevated exposures during early childhood are relatively unimportant in determining lifetime cancer risk. Therefore, total lifetime (cumulative) soil ingestion can be averaged to derive a per day value. These exposure assumptions do, however, reflect a reasonable worst-case scenario—0.1 g/day is an upper-range estimate of soil ingestion for older children and adults.

The above recommendations are based on the conservative assumptions that 100 percent of the ingested non-carcinogenic and carcinogenic soil contaminants are absorbed across the gastrointestinal tract and that ingestion occurs 365 days/year, regardless of climatic conditions or age. The Agency solicits comment on the above assumptions for soil exposure for establishing action levels.

The Agency considered the use of other generic exposure assumptions for establishing action levels for soil based on direct contact (*e.g.*, exposure through dermal contact, exposure through ingestion under a non-residential scenario), but rejected these alternatives for several reasons. First, establishing action levels based on generic assumptions for dermal exposure or exposure via ingestion of soil under a non-residential scenario would be a far less sensitive trigger, and could in effect cause a "false negative" in situations where the Agency believes corrective action would be necessary. Second, the data base for developing action levels based on dermal exposure or exposure via ingestion of soil under a non-residential exposure scenario is limited.

In addition to considering generic exposure assumptions, the Agency considered the use of site-specific, direct

contact exposure factors for deriving soil action levels. However, the Agency believes that assessing site-specific exposure in setting action levels would be a resource-intensive process, and would run counter to the objective of using action levels as a simple screening mechanism. The Agency recognizes that the proposed approach is conservative. Nevertheless, the Agency believes that these levels are appropriate as action levels (as opposed to cleanup targets)—that is, they can reasonably serve as rebuttable presumptions that further study, including analysis of possible remedies, is necessary.

Soil cleanup levels are discussed in more detail in section VI.F.5 of this preamble. However, it should be recognized that facilities with soil contamination above an action level—particularly where the levels would pose no threat under current conditions of exposure—would have a wide range of remedial options open to them, including "conditional" remedies (for which the permit would specify appropriate exposure controls), or the covering of the contaminated soil with a soil cap. In this case, a Corrective Measure Study might simply be a proposal to clean up to protective levels, assuming industrial land use, and to ensure restricted access for the life of the permit. This raises the issue of "conditional" remedies, which is discussed in more detail in section VI.F.8 of this preamble.

g. Action Levels Where Health- and Environmental-Based Levels Are Not Available. If, for any medium, Agency-promulgated standards or criteria, or other health-based levels meeting the proposed criteria are not available or cannot be developed for use as action levels, § 264.521(e) allows the Regional Administrator to set an action level for any constituent on the basis of available data and reasonable worst-case assumptions. In most cases, partial data or data on structural analogs will allow the Regional Administrator to estimate whether the detected level of a contaminant is likely to cause a problem. In other cases, other contaminants will be present at high levels (triggering a CMS in any case), and it will be clear that the constituent is not a driving factor in determining the risk at the site, even under worst-case assumptions concerning its toxicity. In such cases it may not be necessary to specify an action level for the constituent. Finally, under proposed § 264.521(e)(2), the Regional Administrator would have the authority to set the action level at background for a hazardous constituent for which data were inadequate to set a health- or environment-based action level. This

option, however, is provided primarily as a fall-back position. The Agency believes that it will very rarely be necessary to set action levels at background.

As indicated earlier, appendix A lists possible action levels for a range of hazardous constituents based on the criteria proposed in § 264.521(a)(2). EPA's Office of Solid Waste (OSW) is developing, for the purpose of guidance, health-based numbers on additional constituents. These levels would also satisfy the criteria of proposed § 264.521(a)(2). As these additional health-based levels are developed, they will be entered into the Integrated Risk Information System (IRIS). For information on these guidance numbers, the OSW Technical Assessment Branch/Health Assessment Section should be consulted at (202) 382-4761.

h. Authority to Require a Corrective Measure Study Where Action Level Have Not Been Exceeded. The Agency believes it is important to provide the Regional Administrator authority to require a CMS under § 264.520(b) even when no constituents exceed action levels. For example, a CMS could be required if there are threats to certain sensitive environmental receptors at a particular facility with contamination at or below action levels. Also, a CMS could be required in situations where the risk posed by the presence of multiple contaminants may be high enough to warrant a Corrective Measure Study even if no single constituent exceeds the individual action level for the constituent. Similarly, if individuals living near the site are receiving significant exposures from sources other than SWMUs at the site, the incremental exposure due to SWMUs at the site may result in a cumulative risk large enough to warrant a CMS. In addition, there may be situations where "cross-media" risks could indicate the need for a CMS, even though action levels in a particular medium have not been exceeded. An example might be where at nearby residences releases in both the air and ground water are present at very low levels, but the cumulative risks from both pathways of exposure are sufficient to be of concern. Although such situations are expected to be relatively rare, the Agency will examine such cross-media risks when site-specific conditions indicate the potential for such exposure factors.

A CMS may also be required if constituents pose a threat through exposure pathways other than that assumed in setting action levels. For example, constituents in surface water that do not exceed MCLs may still pose

a threat to persons who ingest fish caught from that surface water. Constituents in ground water that do not exceed MCLs may still pose a threat through ponding or basement seepage. Nevertheless, the Agency believes that, with few exceptions, proposed action levels will be adequate to identify potential threats to human health and the environment which necessitate a CMS.

3. *Scope of Corrective Measure Study* (§ 264.522). In the RCRA program, corrective action requirements will be implemented at facilities with a wide range of different types of environmental problems. Some RCRA facilities might, if evaluated according to Superfund's Hazard Ranking System (HRS), score high enough to be included on the National Priority List. On the other hand, most RCRA facilities have much less extensive environmental problems, and are maintained by viable owner/operators, who may be expected to operate at the site for an extended period of time. Recognizing the diversity of the RCRA facility universe, today's proposal has been structured to provide the Agency considerable flexibility in defining the scope and analytic approach to developing Corrective Measure Studies, consistent with the extent and nature of the environmental problems at the facility.

EPA anticipates that for most RCRA facilities, the studies needed for developing sound, environmentally protective remedies can be relatively straightforward, and may not require extensive evaluation of a number of remedial alternatives. Such "streamlined" Corrective Measure Studies can be tailored to fit the complexity and scope of the remedial situation presented by the facility. For example, if the environmental problem at a facility were limited to a small area of soils with low-level contamination, the Corrective Measure Study might be limited to a single treatment approach that is known to be effective for such types of contamination. In a different situation, such as with a large municipal-type landfill, it may be obvious that the source control element of the CMS should be focused on containment options. EPA anticipates that a streamlined or highly focused CMS will be appropriate to the following types of situations:

- "Low risk" facilities. Facilities where environmental problems are relatively small, and where releases present minimal exposure concerns.
- High quality remedy proposed by the owner/operator. Owner/operators may propose a remedy which is highly protective (e.g., equivalent to a RCRA "clean closure").

and which is consistent with all other remedial objectives (reliability, etc.).

- Facilities with few remedial options. This would include situations where there are few practicable cleanup solutions (e.g., large municipal landfills), or where anticipated future uses of the property dictate a high degree of treatment to achieve very low levels of residual contamination.

- Facilities with straightforward remedial solutions. For some contamination problems, standard engineering solutions can be applied that have proven effective in similar situations. An example might be cleanup of soils contaminated with PCBs.

- Phased remedies. At some facilities the nature of the environmental problem will dictate development of the remedy in phases. (see the discussion of phased approach under § 264.524(d)), which would focus on one aspect (e.g., ground-water remediation) of the remedy, or one area of the facility that deserves immediate measures to control further environmental degradation or exposure problems. In these situations, the Corrective Measure Study would be focused on that specific element of the overall remedy, with follow-on studies as appropriate to deal with the remaining remedial needs at the facility.

EPA recognizes that, in contrast to the above situations, some facilities with very extensive or highly complex environmental problems will require Corrective Measure Studies that assess a number of alternative remedial technologies or approaches. The following are examples of situations which would likely need relatively extensive studies to be done to support sound remedy selection decisions:

- "High risk" facility with complex remedial solutions. Such facilities might have large volumes of both concentrated wastes and contaminated soils, for which several different treatment technologies could be applied to achieve varying degrees of effectiveness (i.e., reduction of toxicity or volume), in conjunction with different types of containment systems for residuals.

- Contaminant problems for which several, very different approaches are practicable. There may be several, quite distinct technical approaches for remediating a problem at a facility, each of which offers varying degrees of long-term reliability, and would be implemented over different time frames, with substantially different associated cost impacts. In such cases, remedy selection decisions will necessarily involve a difficult balancing of competing goals and interests. Such decisions must be supported with adequate information.

In addition to the above examples of situations calling for either a limited, or relatively complex CMS, other studies will fall in the middle of that range. Given this "continuum" of possible approaches to structuring Corrective Measure Studies, it is the Agency's general intention to focus these studies on plausible remedies, tailoring the

scope and substance of the study to fit the complexity of the situation.

The general types of analyses and information requirements that may potentially be required of the permittee in conducting a Corrective Measure Study are outlined in today's proposed § 264.522(a). Note that this provision does not prescribe that any specific types of remedies be analyzed, nor does it define a decision process by which remedial alternatives are "screened" or evaluated. It is intended to provide the decisionmaker with a range of options for structuring a study to support the ultimate remedy selection for the facility.

Proposed § 264.522(a)(1) lists items that the Regional Administrator may require in a CMS for any remedy(s) evaluated. In general, sufficient information should be provided for the Agency to determine that the remedy selected can meet the remedy standards of § 264.525(a).

Section 264.522(a)(1) would give the Regional Administrator authority to require the permittee to perform an evaluation of the performance, reliability, ease of implementation, and impacts (including safety, cross-media contaminant transfer, and control of exposures to residual contamination) associated with any potential remedy evaluated. In evaluating the performance of each remedy, the Agency would expect the permittee to evaluate the appropriateness of specific remedial technologies to the contamination problem being addressed and the ability of those technologies to achieve target cleanup concentrations (per following discussion on "target levels").

To evaluate these factors for a specific remedy, the owner/operator may be required to develop specific data. Data may be needed on general site conditions, waste characteristics, site geology, soil characteristics, ground-water characteristics, surface water characteristics, and climate. The Agency anticipates that permittees will collect much of this information during remedial investigations required under § 264.510. In some cases, important relevant information may be included in the part B application. To the extent that potential remedies are identified early in the remedial investigation process, the permittee can streamline his or her data collection efforts to include data needed for the evaluation of specific remedial alternatives.

Analysis of a remedy's performance and reliability should include an assessment of the effectiveness of a remedy in controlling the source of

release and its long-term reliability. Where treatment is planned, an assessment of treatment capability should be provided; where waste will be managed on-site, the details of the management (including a description of the units in which it is treated or disposed of) should be supplied. Potential safety impacts (e.g., associated with excavation, transportation, etc.) of the remedy should also be considered in most cases. Further, the Agency may require information on implementability—such as capacity availability or State or local permitting requirements—to determine whether a remedy is feasible.

The Agency is particularly concerned about potential cross-media impacts (intermedia transfer of contaminants) of remedies, and therefore specifically identified them as an area that may require study. In addition, cross-media impacts will be one of the factors considered in remedy selection (see proposed § 264.525). Some remedial technologies may cause secondary impacts that must be considered in selecting remedies. For example, in some circumstances, air stripping of volatile organic compounds (VOCs) from ground water may release these VOCs to the air unless specific emission control devices are installed on the air stripper. The Corrective Measure Study should also determine whether other adverse impacts from a potential remedy will reduce its effectiveness in achieving the cleanup goal. For example, removal of contaminated sediments in large, slow-moving rivers may resuspend sediments and cause more harm than allowing the sediments to remain in place.

Proposed § 264.522(a)(2) would allow the Regional Administrator to require that the Corrective Measure Study assess the extent to which appropriate source controls could be implemented, and contaminant concentrations appropriate to the constituent(s) could be reached by the remedy. In some cases, bench- or pilot-scale studies may be required to determine the given treatment technology's performance on the particular waste at the facility. Such studies can often save both time and money in addressing environmental remediation.

It will often be appropriate for the Regional Administrator to specify, prior to or during the course of the CMS, preliminary "target" cleanup levels for contaminants which the permittee should use in evaluating the items under § 264.522(a)(1) and (2). These target concentrations would thus serve as preliminary estimates of the media

cleanup standards to be established in the remedy selection process. Target levels might be specified to cover a cleanup range (e.g., 10^{-4} level and a 10^{-6} level), or a specific level for a constituent that would be EPA's best estimate of the ultimate cleanup standard, based on the information available at the time.

There will be many situations where the levels of cleanup that must be achieved will dictate the kinds of cleanup technologies considered, and thus, the target levels specified in the context of the CMS process will be a critical element in shaping the study. However, there may also be many situations where it would not be necessary to specify preliminary target levels, such as where the remedy involves only removal of a specified number of drums, or construction of a tank for dewatering sludges. Other such situations might be where cleanup concentration levels do not greatly affect the actual design of the remedial technology (e.g., a ground-water extraction system), or where the owner/operator proposes a remedy that will effectively achieve highly protective levels of cleanup. In any case, however, when target levels for a remedy are specified, the Agency would reserve the right to set cleanup standards different from the target levels that were identified, since those standards may often be affected by remedy factors that cannot be fully evaluated until the CMS has been completed.

Today's proposal would also allow the Regional Administrator to require an evaluation of the timing of the potential remedy (§ 264.522(a)(3)), including construction time, start-up, and completion. The timing of a remedy will be particularly important where contamination has migrated beyond the facility boundary or is nearing potential receptors. In these cases, a prompt remedy would be necessary. In other cases, timing will be important in distinguishing among remedies. Some technologies may require considerably less construction and start-up time than others, but would require more time to achieve the cleanup standard. For example, if the permittee has a large volume of waste which must be incinerated to achieve BDAT under the land disposal restriction requirements imposed in HSWA, s/he may need to build an incinerator and successfully complete the requirements for a trial burn. If, on the other hand, the wastes to be removed from a SWMU are not wastes subject to the land disposal restrictions and may be disposed in an operating hazardous waste disposal unit

at the site, far less time will be required both to initiate and complete the remedy. The Agency, therefore, may require the permittee to include information on factors affecting both remedy initiation and completion.

The Regional Administrator may also require the permittee to include cost estimates for alternatives considered (§ 264.522(a)(4)). Cost information may become a factor in the remedy selection process when evaluating alternative remedies which will achieve an adequate level of protection. This information will also serve as a first estimate of the cost estimate required to determine the level of financial assurance that the permittee must demonstrate when the final remedy is selected.

Finally, § 264.522(a)(5) would provide the Regional Administrator authority to require the permittee to assess institutional requirements, such as State or local permit requirements, or other environmental or public health requirements, that may be applicable to the remedy and that may substantially affect implementation of the remedy. State and local governments may have specific requirements related to the remedial activities that could affect implementation of the remedies evaluated in the Corrective Measure Study.

In addition to the elements listed in proposed § 264.522(a), the Regional Administrator may include other requirements in the scope of the CMS as needed. Such requirements will be specified in the permit schedule of compliance.

As indicated above, proposed § 264.522(b) would allow the Regional Administrator to specify one or more potential remedies which must be evaluated in the CMS. The Agency is persuaded that this authority is necessary to ensure that delays in initiating cleanup will not result from CMS reports which evaluate only poor or inappropriate remedial solutions.

Requirements for Corrective Measure Studies in two particular circumstances contemplated under today's proposal merit special attention. When either a phased remedy (see § 264.526(d)) or a conditional remedy (see § 264.525(f)) is contemplated for the facility, the scope and timing of Corrective Measure Studies may be adjusted to fit the particular requirements for such remedies.

Proposed § 264.526(d) allows the Regional Administrator to specify (in the permit modification for remedy selection) that a remedy be implemented in phases. Such an approach is

anticipated where separable activities are being addressed at the facility and where, in many cases, imposition of further remedial requirements may be dependent on the experience and/or knowledge gained during preceding phases. In such a case, the CMS may also be divided into phases to match the remedial phases specified in the permit modification.

Conditional remedies are authorized under proposed § 264.525(f). Conditional remedies are not final remedies since they do not necessarily meet all standards for remedies included in § 264.525(a); decisions must be revisited before the permit can be terminated. If the conditional remedy is found to meet all § 264.525(a) standards, it may be declared the final remedy when the decision is revisited. If, however, further corrective action is required to satisfy requirements for a final remedy, a follow-up CMS may be necessary prior to a final remedy decision.

4. *Plans for Corrective Measure Study (§ 264.523).* This section would give the Regional Administrator authority to require the submission of a plan for conducting the Corrective Measure Study at the time s/he determines that a CMS is necessary. Specific requirements for the plan and a schedule for its submission would be included in the permit schedule of compliance.

Typically, a plan would include a description of the general approach to investigating and evaluating potential remedies, a definition of the overall objectives of the study, a schedule for the study, a description of the specific remedies which will be studied, and a description of how each potential remedy will be evaluated. Further, to guarantee an orderly presentation of study results, the Regional Administrator may require the permittee to include as part of the plan the format for presenting the results of the CMS. Discussions between the permittee and the Regional Administrator before the plan is drafted will generally be needed to ensure that appropriate remedial alternatives are considered, that appropriate target concentration levels of contaminants are used, and that the unnecessary expenditures of time or other resources for revisions which otherwise might be required are avoided.

Upon receipt of the corrective measures plan, the Regional Administrator will evaluate its adequacy. If the plan is deficient, proposed § 264.523(a) would allow the Regional Administrator to modify the plan or require the owner/operator to make the appropriate modifications. In some cases the plan will require only

slight modification, and by actually making those modifications the Regional Administrator will be able to eliminate the need for further iterations of the submission and approval process. In other cases, where a submitted plan is deficient even after modifications have been made by the owner/operator, modifying the plan will allow the Regional Administrator to cut short the iterative process that has not produced an acceptable document. This provision of § 264.523(a) is analogous to the authority provided to the Regional Administrator for modifying interim status closure plans (see § 265.112). It is also similar to the process involved in obtaining complete permit applications.

Upon approval of the plan by the Regional Administrator, § 264.523(b) would require that the permittee conduct the CMS according to the approved plan, including the schedule. Both the plan and the schedule included in the plan will become an enforceable part of the permit schedule of compliance.

5. *Reports of Corrective Measure Study (§ 264.524).* As proposed, § 264.524 would provide authority for the Regional Administrator to require progress reports on the Corrective Measure Study at intervals appropriate to the site-specific study requirements. Progress reports would serve two functions—they would keep the Regional Administrator informed of the progress of the study, and would provide the basis for a periodic review to determine whether midcourse corrections to the study are needed. For example, if a pilot-scale study is conducted for a specific treatment technology and early results indicate that the technology does not consistently achieve the expected concentration level, it may be appropriate to eliminate further study of that particular remedy and to consider other approaches.

Today's proposal would require, in all cases, submission of a final report of the CMS which summarizes the results of the investigations for any remedy studied, and any pilot tests conducted. The report would evaluate each alternative in terms of its anticipated performance in achieving the standards for remedies, which are provided in today's proposal at § 264.525(a).

Proposed § 264.524(c) would give the Agency the authority, upon review of the CMS report, to require the permittee to evaluate one or more additional remedies or to develop in greater detail specific elements of one or more remedies previously studied. This provision would ensure that appropriate remedies are evaluated by the permittee in sufficient detail to allow the Agency

to determine its feasibility and effectiveness. In a case where the permittee does not identify an appropriate remedy during the Corrective Measure Study, the Agency may require him or her to evaluate additional remedies as necessary to ensure that a suitable remedy, meeting the standards established under § 264.525(a), is developed.

F. Selection of Remedy (Section 264.525)

1. *General (§ 264.525).* Proposed § 264.525 outlines the general requirements for selection of remedies for RCRA facilities. As structured, it establishes four basic standards which all remedies must meet and specifies certain decision criteria which will be considered by EPA in selecting the most appropriate remedy which meets those standards for individual facilities. In addition, decision factors for setting schedules for initiating and completing remedies are outlined, and specific requirements for establishing media cleanup standards, including requirements for achieving compliance with them, are also contained in this section. The section also specifies requirements for conditional remedies.

2. *General Standards for Remedies (§ 264.525(a)).* Proposed § 264.525(a) specifies that remedies must:

- Be protective of human health and the environment;
- Attain media cleanup standards as specified pursuant to § 264.525 (d) and (e);
- Control the sources of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment; and
- Comply with standards for management of wastes as specified in §§ 264.550–264.559.

These standards reflect the major technical components of remedies: cleanup of releases, source control, and management of wastes that are generated by remedial activities. The first standard—protection of human health and the environment—is a general mandate derived from the RCRA statute. This overarching standard requires remedies to include those measures that are needed to be protective, but are not directly related to media cleanup, source control, or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water. Another example would be a requirement for the construction of barriers or for other controls to prevent

harm arising from direct contact with waste management units.

Remedies will be required to attain the media cleanup standards that will be specified by EPA according to the requirements outlined in subsection (d) of this section. The media cleanup standards for a remedy will often play a large role in determining the extent of and technical approaches to the remedy. In some cases, certain technical aspects of the remedy, such as the practical capabilities of remedial technologies, may influence to some degree the media cleanup standards that are established. It is because of this interplay between cleanup standards and other remedy goals and limitations that today's rule establishes media cleanup standards within the overall remedy selection structure of § 264.525.

Section 264.525(a)(3) is the source control standard for remedies. A critical objective of remedies must be to stop further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. Unless source control measures are taken, efforts to clean up releases may be ineffective or, at best, will involve an essentially perpetual cleanup situation. EPA is persuaded that effective source control actions are an important part of ensuring the long-term effectiveness and protectiveness of corrective actions at RCRA facilities. The proposed source control standard is not intended to mandate a specific remedy or class of remedies. EPA encourages the examination of a wide range of remedies. This standard should not be interpreted to preclude the equal consideration of using other protective remedies to control the source, such as partial waste removal, capping, slurry walls, in-situ treatment/stabilization and consolidation. Overall, EPA expects this policy to be no more stringent than the threshold criteria used for selecting remedies under the National Contingency Plan.

Proposed § 264.525(a)(3) requires that further releases from sources of contamination be controlled to the "extent practicable." This qualifier is intended to account for the technical limitations that may in some cases be encountered in achieving effective source controls. For some very large landfills, or large areas of widespread soil contamination, engineering solutions such as treatment or capping to prevent further leaching may not be technically practicable, or completely effective in eliminating further releases above health-based contamination levels. In such cases, source controls

may need to be combined with other measures, such as plume management or exposure controls, to ensure an effective and protective remedy.

The proposed remedy standard of § 264.525(a)(4) requires that remedial activities which involve management of wastes must comply with the requirements for solid waste management, as specified in §§ 264.550-264.559 in today's proposed rule. RCRA remedies will often involve treatment, storage or disposal of wastes, particularly in the context of source control actions and cleanup of releases. This standard will assure that management of wastes during remedial activities will be conducted in a protective manner.

3. *Remedy Selection Decision Factors (§ 264.525(b)).* Proposed § 264.525(b) specifies five general factors which shall be considered as appropriate by EPA in selecting a remedy that meets the four standards for remedies, and that represent an appropriate combination of technical measures and management controls for addressing the environmental problems at the facility. The five general decision factors in proposed § 264.525(b) are:

- Long-term reliability and effectiveness;
- Reduction of toxicity, mobility or volume of wastes;
- Short-term effectiveness;
- Implementability; and
- Cost.

Any remedy proposal developed under a Corrective Measure Study and presented to EPA for final remedy selection must, at a minimum, meet the four standards of § 264.525(a). The Agency will then evaluate potential remedies against the five decision factors listed in proposed § 264.525(b), as appropriate to the specific circumstances of the facility.

The order of the decision factors listed in proposed § 264.525(b) is not intended to establish an implicit ranking, nor does it suggest the relative importance each factor might have at any particular facility or across facilities in general. There are circumstances in which any one of these factors might receive particular weight.

For example, long term effectiveness may rule out alternative remedies that might achieve clean up targets in the short term, but at the expense of creating new or greater future risks that may necessitate a future corrective action. Conversely, remedies that significantly reduce actual or imminent human exposure in the short term may be preferred over alternatives that eliminate long term risks, but at the cost

of lengthening the period during which exposure persists. Reductions in toxicity, mobility, or volume are especially valuable in situations where the wastes or constituents may degrade into more hazardous or toxic products, or fail to naturally attenuate. Finally, cost may be determinative when more than one alternative remedy can reach the established cleanup target. In practice, the relative weights assigned to these five factors will vary from facility to facility according to the site characteristics. EPA is soliciting comment today on situations in which these tradeoffs may significantly affect the remedy in ways which would suggest that a more prescriptive weighting of the factors might be desirable.

The following is a general explanation of the five decision factors, and how they may generally be used in remedy decisions.

The Agency intends to place special emphasis in selecting remedies on the ability of any remedial approach to provide adequate protection of human health and the environment over the long term. Thus, source control technologies that involve treatment of wastes, or that otherwise do not rely on containment structures or systems to ensure against future releases, will be strongly preferred to those that offer more temporary, or less reliable, controls. Whenever practicable, RCRA corrective action remedies must be able to ensure with a high level of confidence that environmental damage from the sources of contamination at the facility will not occur in the future. EPA believes that long-term reliability of remedies is an essential element in ensuring that actions under section 3004(u) satisfy the fundamental mandate of RCRA to protect human health and the environment.

The second decision factor—reduction of toxicity, mobility or volume—is directly related to the concept of long-term reliability of remedies. As a general goal, remedies will be preferred that employ techniques, such as treatment technologies, that are capable of permanently reducing the overall degree of risk posed by the wastes and constituents at the facility. Reduction of toxicity, mobility or volume is thus a means of achieving the broader objective of long-term reliability. EPA recognizes, however, that for some situations, achieving substantial reductions in toxicity, mobility or volume may not be practicable or even desirable. Examples might include large, municipal-type landfills, or wastes such as unexploded munitions that would be

extremely dangerous to handle, and for which the short-term risks of treatment outweigh potential long-term benefits.

The third decision factor—short term effectiveness—may be particularly relevant when remedial activities will be conducted in densely populated areas, or where waste characteristics are such that risks to workers are high, and special protective measures are needed. Implementability, the fourth decision factor, will often be a determining variable in shaping remedies. Some technologies will require State or local permits prior to construction, which may increase the time needed to implement the remedy.

One of the decision factors which raises particular issues in the context of RCRA remedies is that of cost. RCRA's overriding mandate is protection of human health and the environment. However, EPA believes that relative cost is a relevant and appropriate consideration when selecting among alternative remedies that achieve the clean up range.

EPA's experience in Superfund has shown that in many cases several different technical alternatives to remediation will offer equivalent protection of human health and the environment, but may vary widely in cost. The Agency believes that it is appropriate in these situations to allow cost to be one of the several factors influencing the decision for selecting among such alternatives.

The exact emphasis placed on these decision factors, and how they will be balanced by EPA in selecting the most appropriate remedy for a facility, will necessarily depend on the types of risks posed by the facility, and the professional judgment of the decisionmakers. Comment is specifically invited on the remedy selection approach outlined in today's proposed rule and preamble.

4. *Schedule for Remedy (§ 264.525(c)).* Proposed § 264.525(c) would require the Regional Administrator to specify a schedule for initiating and completing remedial activities as a part of the selection of remedy process. Some of the factors that will be considered when setting the schedule are enumerated in proposed § 264.525(c) (1)–(5). These factors include:

- Extent and nature of contamination at the facility;
- Practical capabilities of remedial technologies as assessed against cleanup standards and other remedial objectives;
- Availability of treatment or disposal capacity for wastes to be managed as part of the remedy;

- Desirability of utilizing emerging technologies not yet widely available which may offer significant advantages over currently available technologies; and

- Potential risks to human health and the environment from exposure to contamination prior to remedy completion.

Proposed § 264.525(c)(6) would allow the Regional Administrator flexibility to consider other relevant factors in setting a schedule for remedy initiation and completion. Such factors could relate to the remedial technology to be employed or the characteristics of the particular waste or facility being addressed.

The timing of remedy implementation and completion will be determined after these and other factors are considered by the Regional Administrator, and a schedule of compliance will be included in the modified permit. The Agency wishes to emphasize, however, that expeditious initiation of remedies and rapid restoration of contaminated media is a high priority and a major goal of the RCRA corrective action program. The schedule included in the permit will be an enforceable permit condition, and the owner/operator will be obligated to seek any change in the schedule for remedy implementation and completion prior to milestones established. This approach is consistent with the Agency's application of schedules of compliance to other aspects of the corrective action program proposed today.

EPA expects that many different specific factors will influence the timing of remedies. For example, the level of technical expertise required and available to implement a particular remedial technology could be an important factor, or the amount and complexity of construction which must precede actual cleanup, or the amount of time which would routinely be needed to achieve the media cleanup standards set in remedy selection, given a specified technology. All major variables which will affect remedy timing are expected to be assessed routinely in the CMS, and will be considered by EPA in setting aggressive yet realistic schedules for remedial activities.

While the Agency's strong preference is for rapid and active restoration of contaminated media, it is recognized that there may be limited cases where a less aggressive schedule may be appropriate. For example, in situations where ground-water cleanup standards can be achieved through natural attenuation within a reasonable timeframe, and where the likelihood of exposure and potential risks to human

health and the environment from exposure to contaminated ground water prior to the attainment of cleanup standards is minimal, a remedy schedule based on natural attenuation could be determined to be the most appropriate solution for a site. Thus, such factors as location, proximity to population, and likelihood for exposure may allow more extended timeframes for remediating ground waters.

Management strategies adopted in the remedy selection decision also may affect the timing of remedies. For example, proposed § 264.526(d) (discussed later in this preamble) would allow the Regional Administrator to require implementation of remedies in discrete phases or incremental segments. Such a phased approach often will affect overall timing of the final cleanup for the facility. As one or more phases of the required remedy are completed, the Regional Administrator may choose to review the results achieved by that phase prior to requiring subsequent stages. For example, if results of an initial treatment process for wastes in a SWMU are successful, the next phase of the remedy might apply that treatment technology to the remainder of the wastes at the facility. Similarly, timing of remedies often may be influenced by the need to address the most important environmental problems first. This might be the case where ground-water contamination has migrated beyond the facility boundary; the initial remedial step would be to require installation of a pump and treat system to stop further migration. (This could also be done as an interim measure prior to final remedy selection; see § 264.540.) Subsequent actions to perform source control, or other remedial action might then be phased in as dictated by their environmental priority, practicability, or other factors.

In addition to these kinds of considerations, adequate time must be allowed in the schedule of the remedy for the owner/operator to decontaminate and remove, close, or dispose of units, equipment, devices, or structures used to implement the remedy. The time needed to perform specific activities associated with this requirement necessarily will be evaluated on a site-specific basis.

5. *Media Cleanup Standards (§ 264.525(d)).* a. *General.* Section 264.525(d)(1)(i)–(iv) outlines the Agency's proposed approach for establishing media cleanup standards (MCS) through the remedy selection process.

Media cleanup standards represent constituent concentrations in ground

water, surface water, soils, and air that remedies must achieve to comply with standards for remedies under § 264.525(a)(2). Media cleanup standards are established at concentrations that ensure protection of human health and the environment, and are set for each medium during the remedy selection process.

The Agency is proposing to set media cleanup standards within the overall context of the remedy selection process. As part of the Corrective Measure Study development process, the Agency will typically provide the owner/operator with target cleanup levels for significant hazardous constituents in each medium of concern when he/she is required to perform a CMS. For carcinogens, these targets will be established within the protective risk range of 1×10^{-6} to 1×10^{-4} , based on site-specific factors, unless another level is deemed necessary to protect environmental receptors. EPA may start the analyses by establishing target cleanup levels at the action level, understanding that action levels are set under conservative assumptions and that the cleanup levels may be modified as appropriate. The remedies analyzed by the owner/operator would generally be designed to meet these targets. After reviewing the permittee's Corrective Measure Study (CMS) using the remedy selection factors given in § 264.525(b), the Agency will select a remedy and set media cleanup standards that must be achieved.

The Regional Administrator will specify media cleanup standards that the remedy must achieve, as necessary to protect human health and the environment. The Regional Administrator may set a media cleanup standard for each constituent for which an action level has been exceeded, as well as other hazardous constituents which the Regional Administrator determines to pose a threat to human health and the environment (e.g., constituents considered under § 264.520(b)). Alternatively, the Regional Administrator may specify media cleanup standards for a subset of hazardous constituents present at the site which are the most toxic, mobile, persistent and difficult to remediate, considering the concentrations at which they are present at the site. This approach may be most appropriate where there are large numbers of hazardous constituents present in a medium. The Regional Administrator may determine in the remedy selection process that some cause exists for not setting a standard for certain constituents, as discussed later in this

section of the preamble. Section 264.525(d)(1) describes the specific approach the Agency proposes to follow in setting these levels.

b. *Protectiveness.* A primary goal of corrective action is to achieve cleanup consistent with existing media-specific cleanup standards, or, when such standards do not exist, to achieve protection against risks to human health such that the excess lifetime risk from exposure to a carcinogenic hazardous constituent in soil, air, ground water or surface water does not exceed 10^{-6} . A variety of practical constraints, as described later, can prevent the consistent achievement of that goal. However, the risks to an individual from exposure to a hazardous constituent in contaminated media should not exceed approximately 10^{-6} .

In the corrective action program, remediation decisions must be made at hundreds of diverse sites across the country. Therefore, as a practical matter, the human health goal will typically be established by means of a two-step approach. First, EPA intends to use a lifetime excess cancer risk of 10^{-6} as a point of departure for establishing remediation goals for the risks from hazardous constituents at specific sites. This starting point is generally consistent with historical Agency practice. While it expresses EPA's preference, it is not a strict presumption that the final cleanup will attain that risk level.

The second step involves consideration of a variety of site-specific or remedy specific factors. Such factors will enter into the determination of where within the risk range of 10^{-6} to 10^{-4} the media cleanup standard for a given hazardous constituent will be established.

This means that a risk level of 10^{-6} is used as the starting point for determining the most appropriate risk level that alternatives should be designed to attain. The use of 10^{-6} expresses EPA's preference for remedial actions that result in risks at the more protective end of the risk range, but this does not reflect a presumption that the final remedy should attain such a risk level. The ultimate decision of what level of protection will be appropriate depends on the selected remedy, which is, in turn, based on the criteria listed in proposed § 264.525(b). Because of factors related to exposure, uncertainty, and technical limitations, EPA expects that the entire risk range will be available and utilized at various sites.

In the Agency's view, it is important to have an initial value to which adjustments can be made, particularly

since the risk range covers two orders of magnitude. By using 10^{-6} as the point of departure, EPA intends that there be a preference for setting remediation goals at the more protective end of the range, other things being equal. EPA does not believe that this preference will be so strong as to preclude appropriate site-specific factors.

Several examples illustrate how under today's proposal EPA might adjust cleanup standards in light of potential uses. First, ground water that is not a potential source of drinking water would not require remediation to a 10^{-6} to 10^{-4} level (although cleanup to address environmental concerns or to allow other beneficial uses might be required). Second, ground water in a broadly contaminated area would typically be remediated to specific background levels as described below, except where the remediation took place as part of an area-wide cleanup. Finally, contaminated soil at an industrial site might be cleaned up to be sufficiently protective for industrial use but not residential use, as long as there is reasonable certainty that the site would remain industrial.

At the same time, in exceptional circumstances, other site-specific exposure factors may indicate the need to establish a risk goal for a particular contaminant that is more protective than the overall goal of 10^{-6} . These site-specific exposure factors may include The cumulative effect of multiple contaminants (see following discussion), the potential for human exposure from other pathways at the facility; population sensitivities; potential impacts on environmental receptors and cross-media impacts.

In summary, EPA has proposed an approach that allows a pragmatic and flexible evaluation of potential remedies at a site while still protecting human health and the environment. This approach emphasizes the overall goal of 10^{-6} as the point of departure (in situations where there are not existing standards, such as MCLs), while allowing site or remedy-specific factors including reasonably foreseeable future uses, to enter into the evaluation of what is appropriate at a given site. As risks increase above 10^{-6} , they become less desirable, and the risks to individuals should not exceed approximately 10^{-4} .

Proposed § 264.525(d)(1)(iii) lists factors for considerations which may be used in establishing media cleanup standards. These considerations apply to setting standards for both carcinogens and non-carcinogens. The factors listed above which may be used in determining

cleanup standards for carcinogens within the risk range are intended to be included broadly within these four general considerations.

(1) *Multiple Contaminants.* The first consideration under § 264.525(d)(1)(iii)(A) is multiple contaminants in the medium. In order to ensure that individuals exposed to a medium (e.g., via drinking ground water) will be protected it may be necessary to consider the risks posed by other constituents in that medium before a media cleanup standard for a single constituent can be established. In considering the risks posed by multiple contaminants, the Agency will follow the procedures and principles established in its "Guidelines for the Health Risk Assessment of Chemical Mixtures" (51 FR 34014). The cumulative risk posed by multiple contaminants should not exceed a 1×10^{-6} cancer risk. All other factors being the same, the media cleanup standard for a constituent present in a medium that is contaminated with many other constituents posing significant risks may be established at a lower concentration than if that constituent were the sole contaminant in the medium.

(2) *Environmental Receptors.* Remedies must be protective for the environment as well as human health. Section 264.525(d)(1)(iii)(B) allows the Regional Administrator to consider actual or potential exposure threats to sensitive environmental receptors in establishing media cleanup standards. Standards, criteria, and other health-based levels are often based on protection of human health, since more information is usually available on effects of contaminants on humans (or laboratory animals) than on environmental receptors. Levels set for protection of human health will frequently also be protective of the environment. However, there may be instances where adverse environmental effects may occur at or below levels that are protective of human health. Sensitive ecosystems (e.g., wetlands) or threatened or endangered species or habitats that may be affected by releases of hazardous waste or constituents should be considered in establishing media cleanup standards. The Agency plans to develop guidance on evaluating ecological impacts. Until more substantial guidance is developed, the Agency intends to determine on a case-by-case basis when standards must be established at lower concentrations to protect sensitive ecosystems or environmental receptors. For releases to surface water, Federal Water Quality

Criteria may be used as guidance in making this determination.

(3) *Other Exposures.* Generally, the Agency will only consider the contamination contributed by the releases subject to corrective action in setting protective cleanup levels. In unusual situations, however, it may be necessary to consider the presence of other exposures or potential exposures at the site (§ 264.525(d)(1)(iii)(C)). For example, if residents living in close proximity to a facility receive unusually high exposures to lead due to the presence of a lead smelter in their town, it may be necessary to set lower cleanup levels for lead in ground water from a SWMU than would otherwise be necessary. Remedies whose cumulative exposures (i.e., mixtures of chemicals, or multiple pathways of exposure) fall within the risk range for carcinogens (1×10^{-6} to 1×10^{-9}), or meet acceptable levels for non-carcinogens, are considered protective of human health.

Chronic exposure to multiple SWMU-contaminated media, although not likely at most sites, may be considered under proposed § 264.525(d)(1)(iii)(C) in establishing media cleanup standards. An example might be where releases from solid waste management units are present in both ground water and soils (from wind blown particulates) at nearby residences. In this case, it might be appropriate to set cleanup standards for either or both releases at more conservative levels, to account for such cumulative risk concerns. The Agency will examine such cross-media effects, when appropriate, on a case-by-case basis.

(4) *Remedy-Specific Factors.* Section 264.525(d)(1)(iii)(D) allows the Regional Administrator to consider the reliability, effectiveness, practicability, and other relevant factors of the remedy in establishing media cleanup standards. These factors are related to the remedy selection decision factors specified in § 264.525(b). An example of how these factors may be considered by the Agency in establishing media cleanup standards under § 264.525(d) is the following. Suppose that one remedial alternative can theoretically treat constituents in soil to concentrations posing a 1×10^{-6} risk level, but relies on a technology that has not been successfully demonstrated under conditions analogous to those at the site in question, or may be unreliable for other reasons. In this situation, consideration of the long-term reliability and effectiveness of the remedy may result in the selection of another technology that can achieve a 1×10^{-6}

risk level, but has been demonstrated to be more reliable.

A variety of exposure-related factors may be considered in establishing media cleanup standards. For example, the potential and pathways for exposure to soils may vary greatly across sites. Media cleanup standards will generally be established for soils to protect individuals from health threats resulting from direct contact to soils. In some cases, however, individual health may be threatened due to the absorption of contaminants in soils by plants and in turn by grazing animals used for human consumption. In these cases, cleanup standards might be set on the basis of protecting health from this exposure pathway.

In establishing media cleanup standards for soil based on exposure via direct contact, the Agency may use the exposure assumptions listed in Appendix D. These exposure assumptions are based on a daily intake of soil through ingestion, of particular concern for young children (see preamble section VI.E.2.f for a detailed discussion of soil exposure assumptions). However, the Agency recognizes that these exposure assumptions would be appropriate only where soil ingestion is plausible. The Agency is considering using different exposure assumptions where different exposure scenarios are likely based on current and projected future land use at/near the site. For example, for sites located in industrial areas that are likely to remain industrial in the foreseeable future, exposure assumptions more appropriate to industrial land use might be used. Thus, the exposure assumptions proposed in Appendix D would apply to sites near areas that are now residential or are reasonably projected to become residential. However, the Agency recognizes that considerable uncertainty is involved in forecasting future land use. The Agency requests comment on the general concept of using current and projected land use to develop likely exposure scenarios for different sites in developing media cleanup standards, and on specific exposure assumptions which are reasonable for these different exposure scenarios.

It should be understood that the Agency does not intend typically to establish cleanup standards per se (i.e., according to § 264.525(d)(1)) for "deep" soils that do not pose a direct contact exposure threat. Such contaminated soils can, however, often be a transfer source of contaminants to other media, such as through leaching of wastes into ground water or surface water. In such

cases the contaminated soils would be dealt with as a source, rather than as a release; that is, the remedy would specify containment, removal or treatment measures for the soils in the same manner as for other sources of releases (e.g., landfills). Such measures would be required as necessary to ensure that media cleanup standards for the affected media are not exceeded.

There are several means of investigating the mobility of contaminants in soil, including a descriptive approach (i.e., consideration of constituent and soil properties), and/or the use of mathematical models or leaching tests (for mobility to ground water). The Agency is further evaluating the use of different leach tests, and requests comments on these and other ways of estimating media transfer of soil contaminants.

The Agency recognizes that there are also technical limitations which must be considered, in addition to scientific information about the hazards to human health and the environment, in establishing media cleanup standards. For example, media cleanup standards would not be set lower than detectable levels. Consideration of reliability, effectiveness, practicability, and other factors will generally be considered on a case-by-case basis.

c. Cleanup Levels and Other Sources of Contamination. In some cases, solid waste management units will be located in areas contaminated from other sources. For example, a solid waste management unit may lie over an aquifer already contaminated from off-site sources or from other activities at the facility. Similarly, an area of contaminated soil resulting from waste management may lie in a broader area of high naturally occurring contamination. In such cases, section 3004(u) gives EPA authority only to require cleanup of contaminants released from on-site solid waste management units. This authority does not extend to cleanup of releases from production areas (unless the releases are "routine and systematic") or from off-site sources (unless those sources are also at a RCRA facility).

Proposed § 264.525(d)(1)(v) codifies this limitation on section 3004(u) authority by allowing the facility owner/operator to demonstrate that a specific concentration of a constituent in the vicinity of a solid waste management unit does not come from that unit, but rather is attributable to sources other than on-site solid waste management units. If the owner/operator can successfully make this demonstration, EPA would not have the authority under subpart S to require cleanup below that

concentration. Proposed

§ 264.525(d)(1)(v) provides, however, that the Regional Administrator may determine that cleanup to levels below the background concentration is necessary for the protection of human health or the environment in connection with an area-wide cleanup under RCRA or other authorities.

The best example of this limitation on section 3004(u) is found in contaminated ground water. If a specific constituent is found in ground water downgradient of a solid waste management unit at levels exceeding action levels, a CMS would ordinarily be required. However, if the facility owner/operator can demonstrate that the constituent levels did not exceed upgradient "background" levels, and that the upgradient background levels did not come from other solid waste management units on the facility, cleanup would not be required. Similarly, even if the downgradient concentration exceeded upgradient background, cleanup could be required only to the upgradient background levels. This approach to "background" is the same as the one found in subpart F.

In the case of soil, the same principle applies. Section 3004(u) provides EPA the authority only to require owner/operators to clean up contaminated soils to the extent that the contamination derives from releases from a solid waste management unit (or that the area itself is a solid waste management unit). Therefore, cleanup of soils would not be required under subpart S below "background" levels. The best measure of background levels for soils will generally be naturally occurring soils in areas not contaminated by a facility's activities—for example, off-site soils. However, in areas broadly contaminated with constituents not subject to section 3004(u) (for example, from manufacturing or off-site air emissions), an owner/operator may be able to argue successfully that constituents found on a facility below a certain level cannot be attributed to releases from a solid waste management unit.

Today's proposal, however, does not allow RCRA facilities located in contaminated areas to ignore facility contributions to the contamination. The permittee will be required to clean up the contamination caused by his/her waste management activities, unless a determination is made under proposed section 264.525(d)(2) that remediation of the release is not required.

In reviewing the demonstration under § 264.525(d)(1)(v) that a hazardous constituent(s) at a specific concentration in a medium is naturally occurring or is from a source other than a solid waste

management unit at the facility, the Regional Administrator would evaluate sampling data developed by the permittee. The Regional Administrator would assess the accuracy of these data and evaluate the statistical procedures used by the permittee to characterize these concentrations. The Regional Administrator may use the performance standards proposed on August 24, 1987, at 40 CFR 264.97 to make this assessment (52 FR 31948).

6. Determination that Remediation of Release to a Media Cleanup Standard Is Not Required. Proposed § 264.525(d)(2) identifies three situations in which the Regional Administrator may decide not to require cleanup of a release of hazardous waste or hazardous constituents from a SWMU to a media cleanup standard meeting the conditions of § 264.525(d)(1). These situations are limited to cases where there is no threat of exposure to releases from SWMUs; cases where cleanup to a level meeting the standards of § 264.525(d)(1) will not result in any significant reduction in risk to humans or the environment; or is technically impracticable. In situations where the Regional Administrator determines that cleanup to a level meeting the conditions of § 264.525(d)(1) is technically impracticable, the owner/operator may be required to remediate to levels which are technically practicable and which significantly reduce threats to human health and the environment.

The Agency does not believe that continued further degradation of the environment should be allowed, even in those situations where actual cleanup of releases may not be required. As provided by § 264.525(d)(3), the Regional Administrator may require source control measures to control further releases into the environment, or other measures to protect against exposure to contaminated media. If source control or other measures are not necessary (e.g., the source no longer exists), a determination of no further action may be made pursuant to § 264.514.

a. Areas of Broad Contamination. In some cases, SWMUs releasing hazardous constituents to the environment will be located in areas that already are significantly contaminated. Where the risks from releases from the SWMUs are trivial compared to the risk already present from overall area-wide contamination, or where remedial measures aimed at the SWMU would not significantly reduce risk, EPA believes that remediation of releases from the SWMU to a cleanup level meeting the standards of § 264.525(d)(1) would not be

necessary or appropriate. In these situations, proposed § 264.525(d)(2)(i) would allow the facility owner/operator to provide the Regional Administrator information demonstrating that such remediation would provide no significant reduction in risk. If the demonstration were successful, the Regional Administrator would determine that remediation to a level meeting the standards of § 264.525(d)(1) was not necessary.

For example, ground water below a leaking SWMU might be heavily contaminated from off-site sources. In this case, removal of the SWMU's contribution to the contamination might have very limited benefit, particularly if that contribution was relatively minor. Similarly, a SWMU such as a surface impoundment might be contributing relatively trivial amounts to area-wide air problems. Control of the SWMU releases might do very little, in such cases, to improve the overall situation in the area, yet (in the case of an operating unit) could be extremely burdensome to the owner/operator.

In such cases, EPA believes that it will make more sense to attack area-wide problems, where they are determined to threaten human health or the environment, on a more comprehensive basis and to focus on the primary sources of release—for example, under RCRA section 7003, CERCLA, or other environmental authorities. The Agency does not believe that it makes sense routinely to require remediation of SWMU releases where they represent only a trivial contribution to an area's problems.

Two points should be stressed here, however. First, the facility owner/operator would be required to take corrective action where it could have a significant effect on reducing risks—for example, as part of an area-wide cleanup strategy. The fact of area-wide contamination would not eliminate EPA's authority to require action in this case. It should be noted that an area-wide cleanup might not be coordinated under a single authority, or within a specific narrow time frame; rather the Regional Administrator may use a variety of authorities to address an area-wide contamination problem over time. Second, EPA in any case would have the authority under proposed § 264.525(d)(3) to require source control to prevent further releases, or to require other measures such as those necessary to protect against exposure to the affected medium.

The Agency has not attempted to define "significant reductions" in risk in this rulemaking, and believes the decision is best made on a case-by-case

basis. However, the Agency seeks comment on whether a more specific definition is necessary for the purposes of this rulemaking.

b. *Ground Water.* Under proposed § 264.525(d)(2)(ii), the Regional Administrator may determine that remediation of a hazardous constituent released from a SWMU into ground water to a media cleanup standard meeting the standards of § 264.525(d)(1) is not necessary to protect human health and the environment if: (1) The ground water is not a current or potential source of drinking water; and (2) the ground water is not hydraulically connected with waters to which the hazardous constituents could migrate in concentrations which could increase contamination in the water to concentrations that exceed action levels.

In interpreting whether the aquifer is a current or potential source of drinking water, the Agency will generally use the approach outlined in the Agency's Ground-Water Protection Strategy (August 1984 and as subsequently modified) as guidance. Generally, Class III aquifers will be considered to meet the requirements specified in § 264.525(d)(2)(ii). Class III aquifers are ground waters not considered potential sources of drinking water and are considered to be of limited beneficial use. They are ground waters that are heavily saline, with total dissolved solids (TDS) levels over 10,000 mg/l, or are otherwise contaminated beyond levels that allow cleanup using methods reasonably employed in public water system treatment. These ground waters also must not migrate to Class I or II ground waters or have a discharge to surface water that could cause degradation.

A determination under § 264.525(d)(2)(ii) that remediation to a media cleanup standard is not necessary might be made in situations where a SWMU located in a heavily industrialized area has released to ground water in an aquifer that is surrounded by ground water that has been heavily contaminated from non-SWMU sources. It is not the intention of the Agency to create a ground-water "island of purity" that is unlikely to be used for drinking water or other (non-industrial) beneficial purposes due to its location in an area historically used only for industrial purposes.

Information from the State and/or local government as to the beneficial use of the ground water may also be useful if the ground water has been classified for specific uses. If the ground water is not a potential source of drinking water but has other beneficial

uses (e.g., agricultural), then remediation to a media cleanup standard may not be required; however, remediation of the ground water to its beneficial use would be required, as provided under § 264.525(d)(3).

If a determination under § 264.525(d)(2)(ii) is made where the ground water poses a threat to environmental receptors, or poses a threat to human health through an unusual exposure pathway (e.g., ponding or basement seepage from shallow aquifers), remediation to alternative levels could likewise be required pursuant to § 264.525(d)(3). The Agency believes that health-based concerns may be secondary to environmental concerns for releases to Class III ground waters. The need to remediate Class III ground waters will be assessed on a case-by-case basis. In any case, cleanup levels for ground water that is not a potential source of drinking water would be established at other than "drinkable" levels.

In other cases, ground water may not fall into Class III, but, because of its distance from any population or other factors, is unlikely to become a source of drinking water in the foreseeable future. In these cases, remediation might be carried out over an extended period of time, and natural attenuation might play a major role in the remedy. The issue of timing of remedies is discussed in more detail in section VI.F.4 of this preamble.

To demonstrate whether the ground water is hydraulically connected with waters to which the hazardous constituents are migrating, samples of water should be taken within the discharge zone of the ground-water contamination plume. The discharge zone will have to be determined on a site-specific basis, and is dependent on the local hydrogeology. If, upon sampling in the discharge zone, the levels of the constituent of concern are not detectable, a statistical comparison of sampling data does not need to be performed. However, if the discharge levels are detectable, an appropriate statistical procedure should be used to compare the constituent concentration in the discharge zone to the constituent concentration upstream. Guidance on appropriate statistical techniques may be obtained from the proposal on statistical methods for use in the RCRA subpart F program dated August 24, 1987 (proposed as 40 CFR 264.97; see 52 FR 31948). In addition, the Agency expects to develop further guidance on appropriate statistical techniques for making these determinations.

The determination of whether the ground water is hydraulically connected with waters to which the hazardous constituents are likely to migrate in concentrations which exceed action levels will be made on a site-specific basis. The physical and chemical characteristics of the hazardous constituents in ground water, the concentrations of the hazardous constituents in ground water and surface water, and local hydrogeological characteristics should be considered in making this determination.

c. Technical Impracticability. Proposed § 264.525(d)(2)(iii) would allow the Regional Administrator to make a determination that remediation of a release to a media cleanup standard meeting the criteria of § 264.525(d)(1) is not required when remediation is technically impracticable. The determination of technical impracticability involves a consideration of both engineering feasibility and reliability. Such a determination may be made, for example, in some cases where the nature of the waste and the hydrogeologic setting would either prevent installation of a ground-water pump and treat system (or other effective cleanup technology), or limit the effectiveness of such a system—e.g., dense, immiscible contaminants in mature Karst formations or in highly fractured bedrock. In other situations a determination under § 264.525(d)(2)(iii) may be made when remediation may be technically possible, but the scale of operations required might be of such a magnitude and complexity that the alternative would be impracticable. The Agency is persuaded that in these and other situations determined to be technically impracticable from a remedial perspective the Regional Administrator should have the authority to not require remediation to media cleanup standards.

Decisions regarding the technical impracticability of achieving media cleanup standards must be made upon careful evaluation of the technical circumstances involved. Facility owner/operators will be required to provide clear and convincing information to support any assertion that such cleanup is technically impracticable.

As suggested in the examples provided above, the Agency believes that the concept of technical impracticability may in some cases also apply to situations in which use of available remedial technologies would create unacceptable risks to workers or surrounding populations, or where cleanup would create unacceptable

cross-media impacts. For example, some wastes present a high potential for explosion during excavation. The Agency expects that these types of situations which could lead to a determination of technical impracticability will be quite rare. In the case of cross-media impacts, it is expected that sound techniques and engineering controls—or other remedial alternatives—should be available to effectively minimize such cross-media transfer effects. In the absence of such controls or alternatives, however, remediation of such situations could be determined technically impracticable. The Agency is specifically soliciting comment today on the types of situations which might warrant a determination that remediation of a release to a media cleanup standard meeting the standard of § 264.525(d)(1) is technically impracticable, and would not, therefore, be required.

7. Demonstration of Compliance With Media Cleanup Standards (§ 264.525(e)). Section 264.525(e) outlines the Agency's proposed approach to establishing conditions the permittee must fulfill to achieve and demonstrate compliance with the media cleanup standards (or alternative cleanup levels) established during the remedy selection process. Media cleanup standards are contaminant concentration limits set on a constituent-specific basis in each environmental medium in which the permittee is required to remediate a release. (See proposed § 264.525(d).) The site-specific conditions which would be established by the Regional Administrator in the permit under § 264.525(e) include compliance points (where cleanup standards must be achieved) for each medium; sampling, analytical, and statistical methods the owner/operator must use in compliance demonstrations; and the length of time over which the data must show that the media cleanup standard (or alternative cleanup level) has not been exceeded to successfully demonstrate compliance. Each of these requirements is discussed below.

a. Points of Compliance—(1) Ground Water. Proposed § 264.525(e)(1)(i) would establish that the media cleanup standard would generally be required to be achieved throughout the area of contaminated ground water. This would require that, if the ground water were a drinking water source, the entire plume of contamination would have to be cleaned up to levels acceptable for drinking. EPA is proposing this alternative since exposure to contaminated ground water may

potentially occur anywhere within an area of ground-water contamination.

Proposed § 264.525(e)(1)(i) would also provide the Regional Administrator with the discretion to establish a point of compliance for ground water at the boundary of the waste when waste is left in place. Such discretion may be necessary where it is impossible or inappropriate to install monitoring wells at certain locations. For example, in the case of a large landfill, it would usually be unwise to install monitoring wells through the landfill itself. In addition, there will be circumstances where ground water contamination is caused by releases from several distinct units or sources that are in close geographical proximity. In such cases, the most feasible and effective ground-water cleanup strategy may well be to address the problem as a whole, rather than unit by unit, and to draw the plume of contamination back to a point of compliance encompassing the sources of release. Proposed § 264.525(e)(1)(i) therefore explicitly gives the Regional Administrator the authority to set the point of compliance at a line encompassing the original sources of the release.

The Agency stresses that its general goal is to clean up the entire plume of contamination; however, it believes that for very practical reasons it must have the discretion to set an alternative point of compliance for ground water around one or more common sources of release. In determining where to draw the point of compliance in such situations, the Regional Administrator will consider such factors as the proximity of the units, the technical practicabilities of ground-water remediation at that specific site, the vulnerability of the ground water and its possible uses, exposure and likelihood of exposure and similar considerations.

Further, in situations where there would be little likelihood of exposure due to the remoteness of the site, alternate points of compliance may be considered, provided contamination in the aquifer is controlled from further migration.

Proposed § 264.525(e)(1)(ii) provides that the location of ground-water monitoring wells will be specified by the Regional Administrator. The monitoring wells will serve both to monitor the effectiveness of the ground-water remediation program, and to allow the permittee to demonstrate compliance with the media cleanup standards contained in the permit for releases to ground water. Where waste is left in place (either at facility closure or at operating waste management units)

wells will generally be located up to the boundary of the waste (*i.e.*, the unit boundary for operating waste management units).

In establishing the point of compliance for remediation of ground water for today's proposed rule, EPA considered several different alternatives. These include the following:

- Throughout the ground water;
- At the hazardous waste unit boundary;
- At the edge of the existing contamination not to exceed a "buffer" zone inside the facility boundary (*e.g.*, a line describing the point at which it would take at least five years for the contamination to reach the facility boundary if it was left unabated); and
- At the facility boundary.

The alternative considered by the Agency which would have established the point of compliance at the facility boundary would recognize that the likelihood of exposure to ground-water contamination is extremely unlikely on the property of an actively managed facility. Owners and operators of these facilities are required to identify and monitor existing contamination under existing regulations. Where existing contamination would result in exposure (or to any contamination beyond the facility boundary), owner/operators would be required to cleanup this contamination. A point of compliance at the facility boundary would reduce costs in certain cases, while providing protection from adverse exposure. However, the Agency is not proposing this alternative because it may allow the spread of contamination within the facility boundary, and provides a smaller margin of safety than a more stringent point of compliance.

Another alternative would be to set the point of compliance at the edge of the existing contamination, with a "buffer" zone inside the facility boundary. This would prohibit the continued spread of contamination and provide a margin of safety between the facility boundary and any existing contamination. The size of the "buffer" could be determined by the expected mobility of the contamination at that site. For instance, the buffer could be set so that it would take at least five years for contamination to reach the facility boundary. Once identified, contamination entering the buffer zone would be required to undergo corrective action.

EPA requests comments on its proposal and on alternatives to this approach. In any case, if the Agency adopted a point of compliance less stringent than the waste unit boundary,

the Regional Administrator would have the discretion to adopt a more stringent point of compliance where warranted by site specific characteristics.

(2) *Air.* Proposed § 264.525(e)(1)(ii) would generally establish the compliance point for hazardous constituents released to air at the location of the most exposed individual. This is intended to be the point(s) where maximum long-term human exposure would occur. It is expected that the point of compliance will typically be outside the facility boundary.

In determining the location of the most exposed individual, the Agency will evaluate the risks where people spend a significant amount of their time on a daily basis rather than address temporary or transient exposures to air emissions (*e.g.*, persons driving by the facility). Thus, cleanup standards might be set at any dwelling, private, or public building, or other public or private area where exposures could occur on a regular or continuous basis if releases continue. This exposure might occur through windblown particles (*e.g.*, from contaminated soil), windblown volatile emissions, or toxic gases migrating from the subsurface into dwellings or other structures. These kinds of potential exposures are evaluated during the facility investigation, and will generally require source controls when they pose an actual or potential threat.

In establishing the location(s) of the most exposed individual(s), EPA will generally not include on-site facility workers, but would include people who live on-site, such as military personnel and families who reside at a Federal facility required to obtain a RCRA permit. Occupational exposures generally are the purview of the Occupational Safety and Health Administration (OSHA). Under OSHA Instruction CPL 2-2.37A of January 29, 1988, OSHA and EPA have agreed that OSHA has the lead role in providing for the safety and health of workers at hazardous waste sites. OSHA has established standards for such exposures in 29 CFR 1910.120. Although EPA has the authority to address occupational exposures, it will generally do so only when the Regional Administrator has cause to believe that inadequate controls are being exercised at the site.

The Agency believes that achieving compliance at the location of actual human exposure will, in most cases, be fully protective. However, the Agency recognizes that some sites may present circumstances in which a different compliance point may be necessary to protect human health and the environment, and has provided the

Regional Administrator the flexibility to set a compliance point other than at the most exposed individual. This may particularly apply where exposure of environmental receptors are a concern. For example, the Regional Administrator could specify that a permittee must demonstrate compliance with the cleanup standard at the location of the most exposed environmental receptor if site conditions warranted.

The Agency considered other points of compliance for media cleanup standards for air, including the unit boundary and the facility boundary. The Agency, however, believes that requiring compliance with air cleanup standards at these locations would be unnecessarily stringent, and would provide very little, if any, real additional health or environmental protection. For example, if the point of compliance were set at the unit boundary, releases from the unit would have to be controlled to health-based levels, assuming life-time exposure at that unit. In practical terms, this would require that emissions from units such as surface impoundments would in some cases have to be controlled virtually to zero. The Agency believes that such a standard would be unrealistic. Similarly, the Agency believes that it is unnecessary to set the point of compliance as a routine matter at the facility boundary, since in many, if not most, cases the actual location of exposed populations will be some considerable distance from the site.

As discussed earlier in today's preamble (section VI.E.2.d), action levels for air are determined at the facility boundary in order to ensure that there will be a plan in place to address the contingency of receptors moving close enough to the facility to be adversely affected by air releases from SWMUs. Recognizing that residential patterns may change after a remedy has been selected and implemented, proposed § 264.560(b) would require the facility owner/operator to notify EPA and any individuals who may be exposed to the contaminated air if, at any time, air concentrations exceed the action level beyond the facility boundary. The need for interim measures or additional studies would be assessed at that time.

The approach proposed today for establishing points of compliance for air releases differs somewhat from the proposed approach for other media, such as ground water. This is due to basic differences in the behavior of contaminants in air as compared to ground water. When a release into ground water occurs, typically the resulting ground-water contamination will remain at or near the facility for an

extended period of time. Thus, if the contamination is not remediated, exposure to the contamination (*i.e.*, through drinking water wells) can occur for years thereafter. In contrast, when a release into air occurs, typically it will migrate and disperse relatively rapidly; the time when individuals who are located close to the facility could be exposed to the air toxicants would be a matter of minutes or hours. Thus, an air release that is occurring at any given time does not present a long-term exposure threat to those individuals, as would a ground-water release. Remedies for an air release problem will most often involve stopping or controlling the release itself from continuing to occur; the released chemicals will not actually be "cleaned up" *per se*.

Although the Agency recognizes that there can be other effects from air releases from solid waste management units (*e.g.*, formation of ozone), the general objective under subpart S is to prevent exposure of nearby individuals to harmful levels of airborne toxicants and carcinogens released from SWMUs (see section VII.C.3 of this preamble for a discussion of the relationship of subpart S to section 3004(n) standards and ozone concerns). Therefore, EPA believes that the proposed approach for setting points of compliance for air releases at the most exposed individual is sensible and realistic. Requiring compliance at the unit boundary (which would follow the approach for ground water) would, in essence, create a standard based on protecting against an implausible exposure scenario.

Proposed § 264.525(e)(1)(ii) also provides that the Regional Administrator will specify locations where air monitoring devices must be installed and what emission modeling or testing, atmospheric dispersion models, or other methods must be used to demonstrate that a permittee has achieved compliance with the media cleanup standards. Methods of demonstrating compliance with air cleanup standards will vary from site to site. At many sites, emission modeling or monitoring air close to the unit may be coupled with air dispersion modeling to estimate concentrations of hazardous constituents at the point of compliance. At other sites, monitoring of air quality at the actual point of compliance may be the most accurate and reliable method of demonstrating compliance with the media cleanup standard. In other cases, corrective measures taken to control the source of the release may eliminate the release to air altogether. In such cases, continued air monitoring or modeling would not generally be required.

(3) *Surface Water.* For surface water, the Agency is proposing the point where releases enter the surface water as the point of compliance. (See § 264.525(e)(1)(iii).) This compliance point will be used for releases to surface water that are ongoing, such as would be the case with contaminated ground water that flows into a surface water body, or non-point runoff which occurs during rainfall events. The Agency believes that achieving compliance with the media cleanup standard for such releases at the point of entry into surface water will be necessary to assure that human health and the environment are protected.

EPA recognizes, however, that in some cases releases from solid waste management units that have occurred in the past have settled and accumulated in surface water sediments. Where actual cleanup of contaminated sediments is determined to be necessary, and cleanup standards have been specified for the sediments in the context of a remedy, proposed § 264.525(e)(1)(iii) would allow the Regional Administrator to designate locations (*i.e.*, areas and depths in the sediments) where compliance with the standards would be required.

The Regional Administrator will specify the locations where surface water must be sampled to monitor the water quality. The Agency recognizes that in some cases (*e.g.*, fast moving streams) there may be some dilution of hazardous constituents before samples can be collected; however, the goal in establishing sampling locations should be to minimize such dilution effects. The Regional Administrator also may specify locations where sediment samples will be collected and analyzed to demonstrate compliance with media cleanup standards. Such considerations will be particularly important where the surface water is an important environment for aquatic life and/or fish or other organisms which are likely to be ingested by a nearby population.

(4) *Soils.* Today's proposal would establish the point of compliance for soils at any point where direct contact exposure to the soils may occur. In most cases this point will be near the surface of soils, because this is where the greatest likelihood exists of human contact.

b. *Methods.* Under § 264.525(e)(2), the Agency proposes that the Regional Administrator specify in the permit the sampling and analytical methods to be used, methods of statistical analyses, if required, and the frequency of sampling or monitoring that may be required to characterize levels of hazardous

constituents in all media, and to demonstrate compliance with media cleanup standards (or alternative cleanup levels). In many cases the permittee may have proposed, in the Corrective Measure Study, sampling and other analytic methods that would be appropriate for the remedial alternative as part of an implementability or availability of needed services analysis. In such cases, the Regional Administrator may consider and adopt the proposed methods or other methods that he/she believes to be more appropriate for the environmental problem being addressed or may require the permittee to use methods he/she believes more reliable.

c. *Timing of Demonstration of Compliance.* The Agency is also proposing under § 264.525(e)(3) that the Regional Administrator specify in the remedy the length of time during which the permittee must demonstrate that concentrations of hazardous constituents have not exceeded specified concentrations in order to achieve compliance with media cleanup standards (or alternative cleanup levels). Under the existing subpart F regulations (§ 264.100), the Agency has required that facility owner/operators remediating ground-water contamination from regulated units continue corrective action until the designated ground-water protection standard has not been exceeded for a period of three years. The Agency has found that, given the variety of hydrogeologic settings of facilities and characteristics of the hazardous constituents, it is difficult to demonstrate reliably that the ground-water protection standard has been achieved by imposing a uniform time for demonstrating compliance.

The Agency is not proposing a specific time period under the subpart S regulations for achieving compliance with cleanup standards before discontinuing corrective action. Instead, the Agency is proposing that the Regional Administrator specify the length of time required to make such a demonstration as appropriate for a given media cleanup standard. As described under proposed § 264.525(e)(3) (i)-(v), the Regional Administrator may consider five factors in setting this timing requirement: (1) The extent and concentration of the release; (2) the behavior characteristics of the hazardous constituents in the affected medium; (3) the accuracy of the monitoring techniques; (4) characteristics of the affected media; and, (5) any seasonal, meteorological, or other environmental variables that may

affect the accuracy of the monitoring results. The Agency believes that consideration of these factors will allow the Regional Administrator to set an appropriate time period for demonstrating compliance with cleanup standards rather than relying on an arbitrary time period for all facilities or all situations at the same facility.

One example of how these considerations might affect a decision on the time a cleanup standard must not be exceeded to demonstrate compliance is given here. The Agency expects that pump and treat systems will be required at many facilities where hazardous wastes or hazardous constituents have migrated to ground water from SWMUs. Experience in the RCRA subpart F program (which addresses releases of hazardous constituents to ground water from regulated units) has shown that continuous operation of a pump and treat system may interfere with the owner/operator's ability to obtain accurate sampling data on constituent concentration levels. Allowing natural restoration of chemical equilibrium in the affected ground water after the pump and treat system is turned off will be necessary to obtain accurate readings of constituent concentrations. If the concentration(s) rise to unacceptable levels after the remedial technology is disconnected, reinitiation of treatment may be required. This process would have to be repeated until acceptable concentration levels are achieved after chemical equilibrium has been reached in the ground water with the treatment system suspended. In such cases it may be necessary to extend the life of the permit until required remedial results have been achieved even when waste management operations have ceased at all active hazardous waste units at the facility.

B. Conditional Remedies (§ 264.525(f)). Proposed § 264.525(f) would allow EPA to select a "conditional" remedy. A conditional remedy would allow, at EPA's or the authorized State's discretion, an owner/operator to phase-in a remedy over time, as long as certain conditions are met. EPA recognizes that in some cases completing cleanup will be sufficiently complex and costly to warrant a phased approach to cleanup. Generally, a conditional remedy would allow existing contamination (sometimes at existing levels) to remain within the facility boundary, provided that certain conditions are met. These conditions would include achieving media cleanup standards for any releases that have migrated beyond the facility boundary as soon as practicable, implementing source control measures

that will ensure that continued releases are effectively controlled, controlling the further migration of on-site contamination, and providing financial assurance for the ultimate completion of cleanup. The length of time that contamination could be allowed to remain within the facility boundary would be established on a site-specific basis, but could be for as long as the permit remains in effect. Nothing in this provision, of course, would prevent the transfer of property subject to a conditional remedy or other corrective action requirements. For a further discussion of the property transfer issue, see section VI.L.1. of this preamble.

This type of remedial approach may often be appropriate for RCRA facilities, for several reasons. First, permitted RCRA facilities will typically be actively managed properties, with viable owner/operators who can control and restrict access to the property. Typically, exposure at such facilities (which have permits to manage hazardous waste) will be significantly less than at sites where access is unrestricted. For example, actual drinking of ground water under the facility will not generally occur, nor would residences typically be found—as long as the site remained a RCRA permitted facility. Therefore, an appropriate remedy for such a site might be the cleanup of ground water contamination under the site to a level consistent with current exposures. Most RCRA facilities pose significantly lower environmental and human health risks than Superfund sites, and therefore the need to pursue complete cleanup at such facilities will often be less urgent. The use of conditional remedies in appropriate situations complements EPA's overall management goal of addressing the most significant and urgent environmental problems first.

The Agency anticipates that there may be a variety of facility-specific situations under which a conditional remedy would be appropriate, given the nature of the contamination problem at the facility, the capabilities of the owner/operator and other factors such as the level of risk and local public concerns. One example could be a large facility where the contaminant sources and releases are of no current threat, are relatively remote from any potential receptors and can be reliably controlled to prevent further significant degradation, and where the owner/operator can be reasonably expected to maintain an effective, long-term presence at the facility, and thus able to prevent exposure to contaminants during the conditional remedy. EPA

recognizes that decisions regarding the appropriateness of conditional remedies could often have important implications for owner/operators, as well as others who may be affected by or who have interest in the long-term environmental conditions of these facilities. Such decisions must be made in careful consideration of relevant, site-specific factors. The Agency specifically requests comment regarding which factors should be considered—and how—in determining the appropriateness of conditional remedies, and whether more formal criteria should be specified in the rule for making such decisions.

Conditional remedies would not be appropriate in situations where EPA or the authorized State lacks reasonable assurance that further environmental degradation will not occur. For example, a conditional remedy would not be appropriate in the case of a fast moving plume or in circumstances where the hydrogeology of the area suggests that additional vertical migration will likely occur despite the implementation of engineered systems or devices to control plume migration. Further, conditional remedies may not be appropriate in situations where a site with ground water contamination is located in close proximity to an environmentally sensitive area. In the case of Federal facilities, conditional remedies may be frequently used because of a combination of factors, including technical limitations on the ability to achieve complete cleanup at facilities which are often extremely large and complex, and the unique financial constraints placed on Federal facilities by the nature of the federal budget process.

The media cleanup standards, source control actions, or other actions required under a conditional remedy may or may not be sufficient for a final remedy. Today's rule recognizes that in some cases, there are technical limitations to achieving complete cleanup of ground water contamination. The proposal recognizes this and allows technical practicability to be factored into the decisionmaking process at a particular site both during the selection of remediation alternatives to be considered and in the final determination of appropriate remedies.

The Agency is particularly interested in comments on this issue from the States, who will ultimately be the implementing agencies for corrective action. Comments are solicited as to whether States support this approach, and whether they believe it reasonably

addresses corrective action problems at facilities operating under State permits.

Section 264.525(f)(2) outlines the seven specific requirements—or conditions—that conditional remedies must comply with. Should any of these conditions not be met during the term of a facility's permit, EPA would either impose new or additional conditions to ensure protection, or require the owner/operator to implement a "final" remedy; i.e., a remedy that fully meets the standards of § 264.525(a). In any event, such a final remedy would ultimately have to be implemented and completed at the facility before termination of the permit.

Under a conditional remedy the owner/operator would be required to achieve media cleanup standards for any releases that have migrated beyond the facility boundary as soon as practicable. In addition, the remedy would have to prevent against any further significant environmental degradation. This will typically involve implementing source control measures that will ensure that continued releases (e.g., leachate from a landfill to ground water) are effectively controlled. In order to achieve this standard of protection, substantial treatment of wastes or other containment measures will often be required. In addition to such source control measures, a conditional remedy would also be required to have implemented engineered systems or devices to control the further migration of on-site releases that have already occurred. For example, in the case of a plume of "on-site" contamination (i.e., that had not yet reached the facility boundary), that would continue to migrate and further contaminate the aquifer if left unchecked, the owner/operator would be required to install, at a minimum, some type of ground-water interception system or barrier system that would reliably halt such continued migration.

The source control actions or other actions required under a conditional remedy to prevent further environmental degradation may or may not be sufficient for a final remedy. In some cases, further treatment of wastes or extra engineered features might be required to achieve final remedial goals, consistent with the provisions for remedies under § 264.525 (a) and (b). Likewise, the final remedy would also require compliance with standards for attaining media cleanup standards within the facility boundary, as well as outside the facility.

Under a conditional remedy, any treatment, storage or disposal of wastes required by the remedy would have to be done in accordance with the

requirements for management of wastes, as specified in proposed §§ 264.550–264.559.

Today's proposal would require that financial assurance for the remedy be demonstrated. The Agency recognizes that financial assurance may often be very important in ensuring the effectiveness of a conditional remedy, as well as ensuring that final cleanup of the facility will be achieved. Comment is solicited as to the types of financial assurance requirements that should be imposed on conditional remedies.

Since a conditional remedy may allow some contaminated media to remain on the facility during the course of the remedy, a critical feature of the remedy will be ensuring adequate controls to prevent against exposure to such contamination. Controls could be engineered features, such as fences or other physical barriers to restrict access to those areas of the facility. Other non-engineered controls, such as prohibitions against use of on-site ground water for drinking water, could also be required and written into the permit.

EPA solicits comments on the overall concept of conditional remedies, and on the specific conditions and requirements that should be imposed in implementing such remedies.

G. Permit Modification for Selection of Remedy (Section 264.526)

After a preliminary selection of remedy, the Agency will need to revise the permit to incorporate the remedy. This decision (selection of remedy) is a major one in the corrective action process, and the public is entitled to review and comment on the Agency's preliminary decision concerning appropriate remedial activities at the facility. Moreover, this modification provides an opportunity for the public to comment on activities (e.g., the remedial investigations and the CMS) that have led up to the identification and selection of the remedy. As a result, the Agency believes that a major modification of the permit is appropriate. Therefore, the Agency is proposing today in § 264.526(a) to require a major permit modification for the purpose of specifying the selected corrective measures and imposing a schedule of compliance for implementing the remedy.

The regulatory authority for a major permit modification is found in 40 CFR 270.41, as amended by proposed § 270.41(a)(5)(ix) of today's regulation. No changes are being proposed in today's rule for the major modification process, which requires a 45-day notice and comment period, a response to

comments, and a public hearing if such a hearing is requested. (Regulations concerning standards for major modifications are located at 40 CFR 270.41; governing procedures are found in 40 CFR part 124.)

Opportunities for public involvement in the corrective action process beyond the modification for selection of remedy are discussed in Section VIII of today's preamble.

Proposed § 264.526(b) specifies seven elements that would be included in the modified permit. The proposed modification and its accompanying statement of basis would provide a framework for the facility owner/operator's and the public's understanding of the remedial activities selected for the facility. First, the proposed modification would have to include a description of the technical features of the remedy necessary to achieve standards for remedies as stated in proposed § 264.525(a). This description must be complete enough to enable a reviewer to determine that it complies with the standards for protectiveness, attainment of media cleanup standards, source control, and waste management practices imposed on all RCRA remedies under § 264.525(a). For instance, if an incinerator is to be constructed to incinerate waste at the facility, the description would generally indicate the type of incinerator proposed, the part 264 performance standards the incinerator would meet, the capacity, etc. The remedy description might also need to specify equipment or design features needed to address air releases from the treatment process (e.g., air strippers used to remove volatile organics will generally be required to have a control device such as a carbon adsorption unit). The technical features required should be provided in sufficient detail to allow meaningful comment and to provide the facility owner/operator clear guidance in developing a remedial design. (See discussion of remedy design under section VI.H of today's preamble.) At the same time, EPA believes that many details of the remedy—for example, the operating conditions of the incinerator needed to meet the performance standards or the exact nature of emissions control devices on tanks—might not be available at this stage and would be addressed during approval of the remedy design.

Second, today's proposal would require in § 264.526(b)(2) that media cleanup standards established during remedy selection be included in the modified permit.

Third, proposed § 264.526(b)(3) would require that the modified permit describe conditions the permittee must fulfill to demonstrate compliance with the media cleanup standards established in the remedy selection process under § 264.525(e). For example, the modified permit might require the owner/operator to continue monitoring ground water over a certain period of time after a cleanup standard has been achieved to ensure that the level is not subsequently exceeded. In addition, the permit might specify where ground water would be monitored to measure compliance. Again, specific details on compliance measurements might not be available at remedy selection, but would be addressed through remedy design.

Proposed § 264.526(b)(4) would require the Regional Administrator to specify standards applicable to the management of corrective action wastes in the permit. For example, if the remedy selected specifies use of a temporary tank at the facility for the purpose of waste treatment, any design, operating or performance standard deemed applicable to the operation of the unit would be included in the modified permit by the Regional Administrator.

Fifth, any procedures the permittee must follow to remove, decontaminate, or close units or structures used during remedy implementation would be specified in the permit, as well as any post-closure care required. In the example of the temporary unit used above, the Regional Administrator would specify any closure standards that applied to the temporary unit if the unit was employed to treat hazardous waste.

Proposed § 264.526(b)(6) would require that the modified permit include a schedule for initiating and completing all major technical features and milestones of the remedy.

Finally, the modified permit must include (under § 264.526(b)(7)) any requirements for submission of program reports or other information deemed necessary by the Regional Administrator for the purpose of overseeing remedy implementation and progress. For further discussion of the remedy selection process and components of the decision-making process, see section VI.F of today's preamble.

The Agency believes that these minimum requirements—a description of the remedy's technical features, the cleanup standards that must be achieved, the standards that must be met to demonstrate compliance with the media cleanup standards, standards applicable to the management of corrective action wastes, requirements

for removal, decontamination, closure, or post-closure of units or devices employed during remedy implementation, a schedule of compliance, and requirements for reporting—are the most important decisions the modified permit must reflect. Further, they are essential to inform the public fully of the Agency's preliminary decision when the draft permit modification is issued for notice and comment.

In addition to the draft permit modification itself, EPA would also be required to publish, under the permit modification requirements, a statement of basis. This statement, which would be roughly analogous to the Superfund Record of Decision (ROD), would generally describe the basis for EPA's tentative remedy selection or approval and an explanation for the cleanup levels chosen. In addition, EPA would generally make the remedial investigation and the CMS reports available to the public for review. The scope and content of the statements of basis will vary widely, of course, depending on the complexity of the site, the nature of the proposed remedy, the level of public interest, and other relevant factors. In any case, they should be sufficiently detailed for the public and the facility owner/operator to understand and comment on the Agency's tentative decision, and the studies and conclusions leading up to the decision.

The permittee, based on the remedy selected and approved in the final modified permit, will be required under proposed § 264.526(c) to demonstrate financial assurance for completing all required remedial actions specified in the modified permit. The proposed regulations for financial assurance for corrective action (FACA) (51 FR 37854), as discussed in sections IV.D and VII.C.5 of today's preamble, may be used as guidelines by owner/operators for demonstrating the required financial assurance.

Today's proposed § 264.526(c) would require the permittee to demonstrate financial assurance no later than 120 days after the modified permit becomes effective. The Agency believes that this approach is needed since the remedy proposed for the facility in the draft permit modification may be altered in response to comments, and since final detailed remedy design, construction, operation, and maintenance plans which will provide significantly improved cost estimates may not be submitted until after the modified permit is in effect. The Agency chose 120 days to promote consistency with other RCRA financial assurance provisions. Experience in

implementing the financial assurance provisions under 40 CFR part 264, subpart H, has shown that 120 days is a reasonable period of time for owners or operators to obtain financial assurance mechanisms. The Agency is specifically soliciting comment on this proposed provision today, and whether 120 days after the final remedy decision is imposed is an appropriate length of time for demonstrating financial assurance.

In addition, proposed § 264.525(c)(2) would allow the Regional Administrator in certain circumstances to release the facility owner/operator's mechanisms establishing financial responsibility for closure and post-closure financial assurance at the time financial assurance for corrective action is established. This amendment is necessary to address situations where corrective action is conducted at regulated units—particularly under the subpart F requirements of § 264.100—and the corrective action schedule of compliance replaces the unit's closure plan. In these cases, it will generally be appropriate for the Regional Administrator to release the facility's financial assurance for closure and post-closure for that unit and allow the facility to apply the mechanisms to financial assurance for corrective action. In addition, at the point where the unit subject to corrective action is effectively closed in accordance with the corrective action schedule of compliance, the Regional Administrator would have the authority under today's proposal to release the owner/operator from third-party liability requirements with respect to that unit. This proposed requirement is consistent with the current provisions of subpart H, which generally provide for the release of third-party liability mechanisms at the time an owner/operator certifies final closure.

Section 264.526(d) provides for phased remedies when considered appropriate by the Regional Administrator. The concept of phased remedies is similar to the designation of "operable units" in CERCLA. Remedial actions at CERCLA sites are often managed in stages called operable units since it is often not feasible, for a variety of reasons, to clean up an entire site in one action. Operable units under CERCLA, or remedial phases under RCRA, may consist of any logically connected set of actions performed sequentially over time, or concurrently at different parts of a site.

One example of a situation where a phased remedial approach would be useful is where treatment of waste is desirable, but where a suitable

treatment technology or adequate treatment capacity is not currently available, although it is expected to be available in the foreseeable future. In such cases, remedial phases might consist initially of limited measures to stabilize the wastes, to be followed by a complete response action when an appropriate treatment technology or capacity becomes available.

Another example of a phased approach would be a requirement to install a ground-water pump and treat system to control further movement of a contaminant plume and begin the cleanup process, prior to specifying the source control measures necessary for the releasing unit(s). Conversely, source controls at a SWMU (or SWMUs) might be required prior to installing the pump and treat system. This kind of approach would be desirable, in many cases, where the disintegration of the engineered structure of the unit(s) is resulting in continued significant releases, but the concentration of the hazardous constituents in the ground water had not reached levels or locations that threaten exposure of humans or sensitive environmental receptors to hazardous constituents at harmful levels in the near term.

Any initial remedy phases should be consistent with, and complementary to, the final remedy that is selected according to § 264.523. The separation of a remedy into phases should in no way impede future cleanups; rather, this approach should often be useful in taking early action to prevent further degradation while other problems are still in a study phase.

The Agency has determined that the use of phased remedies for managing corrective action at RCRA facilities is appropriate for many of the same reasons the concept is used at Superfund sites. Using remedial phases at RCRA sites will provide the Agency with more flexibility to require remedies tailored to site-specific considerations. It may be advantageous at a particular RCRA facility to address releases from an individual SWMU or group of SWMUs in stages, focusing first on those releases that pose the greatest risk to human health and the environment, while allowing releases posing less risk to be addressed later.

H. Implementation of Remedy (Sections 264.527-264.531)

1. *Remedy Design (§ 264.527).* After EPA has approved the remedy through the permit modification process, the facility owner/operator will often be required in the modified permit to develop a remedy design. Proposed § 264.527 would require the permittee to

prepare detailed construction plans and specifications for implementing the remedy. The schedule for submission of the plans would be included in a schedule of compliance detailed in the permit. This proposed requirement is analogous to the Superfund program's adoption of design standards following the Record of Decision on remedy selection. The Agency would approve or modify the design and incorporate it into the schedule of compliance.

Designs required under § 264.527 must include specifications that demonstrate compliance with the applicable standards for management of hazardous and/or solid wastes during implementation of the remedy, as determined by §§ 264.550 through 264.552 of today's proposal. The information required would be similar to the information typically required about units and processes at facilities in part B applications.

The permittee would also be required under proposed § 264.527 to submit implementation and long-term operation, monitoring, and maintenance plans, a project schedule, and a program to assure quality assurance during the construction phase (if any) of remedy implementation. Such information would include specific dates for major milestones and project completion as well as other significant events.

Proposed § 264.527(b) would require the permittee to implement the remedy according to the plans and schedules approved by the Regional Administrator and in a manner consistent with the objectives specified for the corrective measures during remedy selection. Section 264.527(a) will provide that the approved schedule and specifications become an enforceable part of the permit.

Proposed § 264.527(b)(2) would require the permittee to place a copy of the approved design plans and specifications in the information repository if the facility is required by the Regional Administrator to maintain such a repository under the authority of § 270.38. All permittees would be required, under proposed § 264.527(b)(3), to provide written notice of approval of remedy design to those persons on the facility mailing list. This notice would provide individuals on the facility mailing list a notice of the location of the approved remedy design and specifications and provide information on the availability of those documents for public review.

Additionally, proposed § 264.527(b)(4) would require the permittee to amend the corrective action cost estimate and adjust the amount of financial assurance demonstrated, if necessary, after

approval of the remedy construction plans and specifications. These plans will provide improved cost estimates compared to those developed during modification of the permit. Therefore, to ensure that adequate amounts of funds are available to cover corrective action costs, the amount of financial assurance demonstrated must reflect the revised cost estimate derived from the final construction plans and specifications.

2. *Progress Reports (§ 264.528).* Since implementation of remedies will often take place over extended time periods, § 264.528 of today's proposal provides that the Regional Administrator may require periodic progress reports from the permittee. These progress reports may contain information on construction, operation, and maintenance of the selected remedy. The Regional Administrator would specify the frequency and format of such reports in the permit schedule of compliance, when s/he approved the remedy design. Such reports would be designed to summarize the progress of remedy implementation, discuss changes or problems with the remedy, and provide data obtained during remedy implementation.

The timing and content of progress reports will vary from site to site. Factors that may be used by the Regional Administrator in determining what progress reports are necessary for a given site include complexity of the waste mixture, complexity of the remedy, hydrogeologic and climatic conditions, and potential for exposure. These factors are qualitative measures of the risks posed by contamination at a specific site. The Agency intends to monitor closely those sites at which the risk to human health and the environment is greatest. For example, the frequency of progress reports may be greater at sites where there are complex remedies and/or a high potential for exposure to contamination than at sites where remedies are simple and the potential for exposure is low.

Reports required by the Regional Administrator will be tailored to meet site-specific conditions. Where necessary, progress reports may be required to contain detailed information on remedy implementation. In other cases, such as where the remedy is simple, the progress reports may be less detailed.

The Agency considered several alternatives to today's proposal for allowing discretion to the Regional Administrator in requiring progress reports. These included: Not requiring progress reports from any facility; requiring submission of reports on a

routine basis from all facilities implementing remedies; and requiring development of progress reports which would be kept on file at the facility and available for inspection by EPA. The Agency has tentatively rejected these alternatives, because it believes that the variation among sites will require that reporting (including frequency of reporting) be tailored to the specific site.

All raw data and information developed or submitted during remedy implementation (including design, laboratory reports, etc.) must be maintained in the operating record of the facility as long as the facility operates under a RCRA permit, including any reissued permit following initiation of corrective action. This requirement is proposed in § 264.528(b) and is necessary to ensure that periodic reviews at the site will have all data available for inspection.

3. Review of Remedy Implementation (§ 264.529). Under the regulatory authority proposed in § 264.529, EPA would review remediation activities on a periodic basis. Such reviews will take place throughout the design, construction, operation, and maintenance of the corrective measure(s). The Agency's review of remediation activities will consist both of a review of progress reports submitted by the permittee and, where necessary, on-site inspections and oversight of remedy design, construction, operation, and maintenance. The Agency intends to focus on-site inspections on areas identified for oversight in progress reports or prior Agency reviews.

The Agency believes that the authority to perform close reviews of remediation activities is an essential element of the corrective action program. Experience in the HSWA corrective action program and the CERCLA remedial program has demonstrated that timely and close oversight of cleanup activities is essential in many cases to ensure that remedies are effectively implemented. For example, oversight of the remedy may indicate that the technology originally called for in the design plans is not in fact successfully meeting the media cleanup standards. Proposed § 264.529 provides EPA with the authority to take steps to remedy such implementation problems.

The Agency intends to work closely with permittees by overseeing remedy implementation and addressing problems in a timely manner. Where problems arise during implementation of the selected remedy, the Agency will attempt to settle such problems informally with permittees to ensure

prompt completion of the remedy in a manner which adequately protects human health and the environment. In some cases, the Agency may determine that an enforcement action under section 3008(a) is necessary to compel compliance with the permit. In other cases, where no resolution of disagreements appears possible, or where the contemplated change is one that warrants additional public participation, proposed § 264.529 would allow the Regional Administrator to initiate a permit modification using the procedures laid out in 40 CFR 270.41 or those proposed today under § 270.34(c). If the Regional Administrator believes that a disagreement over a proposed provision is suited to alternative dispute resolution, she/he may seek resolution using the procedures described in section VI.L.7 of today's preamble. A more detailed discussion of circumstances which may require permit modifications may be found in section VII.4 of today's preamble.

The Agency also considered, but rejected, requiring a specific number of facility inspections during remedy implementation. Because the variety of problems to be addressed under today's proposed regulation is extensive (as is the range of proven reliability of technologies which may be employed to address the problems, complexity of the site, and potential for exposure), the Agency has concluded that frequency of site reviews must be a case-by-case decision.

4. Completion of Remedies (§ 264.530). Proposed § 264.530 would establish criteria by which the owner/operator would demonstrate the completion of remedies.

Section 264.530 would specify that corrective measures required in the permit are complete when three conditions have been met. First, under proposed § 264.530(a)(1), the requirements for compliance with all media cleanup standards (or alternative cleanup levels) as specified in the permit would have to be met. For example, if both a ground-water and soil cleanup standard are specified in the permit, the cleanup standard must have been achieved for each medium before the facility meets the criterion of compliance with all media cleanup standards. In addition, after initially achieving the cleanup standard the permittee generally would be required to monitor the medium for an additional period of time to ensure that the remedy was in fact complete and that contaminant levels did not subsequently exceed the cleanup standards under the provisions of proposed § 264.525(e). This

requirement is discussed in section VI.F.7.c of this preamble.

Second, under proposed § 264.530(a)(2), all actions required in the permit to address the source or sources of contamination must have been satisfied. This provision is designed to prevent continued contamination in the future. One type of source control which may be required is construction of a structurally sound cap on an inactive SWMU to prevent future contaminant migration to surface water which could potentially result from rainfall runoff from an uncovered SWMU.

Third, under proposed § 264.530(a)(3), the permittee would have to comply with procedures specified in the permit for removal or decontamination of units, equipment, devices, or structures required to implement the remedy. In other words, temporary structures or equipment necessary to conduct the remedy must be removed or decontaminated to complete the remedy. For example, liners or the contents of temporary waste piles would have to be disposed of according to appropriate waste management practices. Units employed during the remedial activities to manage hazardous waste will be required to meet the closure performance standards for the appropriate type of unit. (Closure would not be required, of course, if the owner/operator wished to continue use of the unit to manage waste and continued use was allowed in the permit.)

Proposed § 264.530(b) would establish procedures that permittees must follow to document that corrective measures have been completed in accordance with the requirements of § 264.530(a). Upon completion of the remedy, the permittee would be required to submit a written certification to the Regional Administrator by registered mail stating that the remedy has been completed in accordance with the requirements of the permit. The certification must be signed by the permittee and by an independent professional skilled in the appropriate technical discipline. The Agency believes that a certification by an independent professional is necessary because the permittee may lack the expertise and the incentive to judge adequately the compliance of the remedy with the applicable requirements specified in the permit.

The Agency is not proposing to specify the types of independent professionals who must certify completion of the remedy. The Agency proposes to require certification by an appropriate independent professional in recognition that different certifications

may require different skills (e.g., an engineer may be appropriate in some cases whereas a hydrogeologist might be more appropriate in another).

The Agency considered, but is not proposing, a requirement that all supporting documentation be submitted along with the certificate of completion. Since, in most cases, the Regional Administrator would have required submission of periodic progress reports on remedial activities and since the supporting information must be available at the facility for inspection, the Agency believes that submission of all documentation will not be necessary.

Upon receipt of the certificate of completion, the Regional Administrator would determine whether the remedy has been completed in accordance with the requirements of proposed § 264.530. If the Regional Administrator determines that the applicable requirements for remedy completion established in the permit schedule of compliance have not been met, the Regional Administrator would generally notify the permittee of such a decision and of the steps that must be taken to complete the remedy. After such steps have been taken, the permittee should submit a new certificate of completion in accordance with the requirements of this section.

When the Regional Administrator has determined that the remedy is complete, the permittee will be released from the financial assurance requirements for corrective action under §§ 264.500(c) and 264.528(c).

The Agency is proposing, in § 264.530(c)(1), that the permit will be modified according to the Class III procedures for owner/operator-initiated modifications (§ 270.42), to terminate the permit schedule of compliance when all required corrective action is determined to be complete.

Generally, remedies required under subpart S will be considered complete only when all measures at a facility have been completed. Thus, if separate remedies are implemented for several units at a facility, all remedies must be completed before the Agency considers corrective action at the facility to be complete. For example, if a remedy for releases from two units at a facility is complete, but a different remedy for releases from three other units at the facility is incomplete, the Agency will not consider corrective action for the facility complete.

In some situations, however (e.g., where essentially separate remedial activities addressing releases widely separated in location and affecting different environmental media), it may be possible for the owner/operator to

demonstrate that some portion of the remediation required has been successfully completed though other required actions are still underway. This will usually be the case where the remedy chosen for a facility is a phased remedy divided under proposed § 264.528(d). In such cases, the Regional Administrator may allow submission of certifications of partial completion of remedies by the owner/operator. Certifications of partial completion will be handled in a manner analogous to certifications of partial closure and are provided today in proposed § 264.530(d), which includes a provision for partial release of the financial assurance mechanism as well. However, until all corrective action activities required in the permit are complete the owner/operator must continue to comply with all implementation and reporting requirements specified in the permit which have not been specifically satisfied to date.

5. *Determination of Technical Impracticability (§ 264.531).* This proposed section is intended to address situations where a performance requirement set for a selected remedy in the permit cannot technically be achieved after reasonable efforts to do so have been made by the permittee. An example of such a situation might be where hydrogeologic and geochemical factors that were not fully understood at the time of remedy selection prevent the attainment of a media cleanup standard for ground water.

EPA will require owner/operators to put forth active efforts to achieve all requirements of the selected remedy. If the selected remedial technology proves not to be capable of attaining a media cleanup standard or other remedy requirement (such as a source control measure), EPA may require the owner/operator to examine alternative technologies that are available and that may be able to achieve the requirement. If such an alternative technology is identified, and is compatible with the overall remedial objectives (e.g., would not create unacceptable cross-media impacts), the permit will be modified to require implementation of the technology. (See discussion of review of remedy implementation under § 264.529.)

EPA will examine, on a case-by-case basis, the owner/operator's efforts to achieve remedy requirements. Comments are solicited as to what objective factors may be examined in making these judgments.

If the Regional Administrator determines that attainment of a remedy requirement is not technically practicable and no practicable

alternative technologies are available, it will be necessary to determine what alternative, or additional, requirements, if any, will be needed to ensure that the remedy adequately protects human health and the environment. If, for example, attainment of a cleanup standard for ground water is determined to be technically impracticable, additional measures (e.g., facility access controls) to control long-term exposure to the ground water may be needed if the ground water is not drinkable. Likewise, if treatment of contaminated soils to specified levels were not technically feasible, the soils may need to be covered or disposed of in a unit with upgraded engineering controls for release prevention. In some cases, the Regional Administrator may determine that no alternative or additional requirements are necessary. For example, the total risk from the site may be acceptable, although some carcinogenic constituents may exceed the desired risk level established by the media cleanup standard.

If attainment of a media cleanup standard is determined to be technically impracticable, it is not the intention of EPA to modify the standard to a less stringent level. Media cleanup standards represent levels that are determined to be protective of human health and the environment; a finding that such standards cannot be met does not affect the desirability of achieving those levels. A determination of technical impracticability thus represents a finding that remediation to protective levels cannot be accomplished from a technical standpoint, and that the owner/operator will not be required to continue to expend resources to meet the standard.

A determination of technical impracticability does not relieve the owner/operator of his ultimate responsibility to achieve the specific remedy requirement. If such a determination is made, but subsequent advances in remedial technology or changes in site conditions make achievement of the requirement technically practicable, EPA reserves the authority to modify the permit (if the permit is still in force) or take other appropriate action to require attainment of the standard or other requirement.

I. Interim Measures (Section 264.540)

This section would establish the Agency's regulatory authority to compel permittees to conduct interim measures. As part of its overall strategy for implementing the corrective action program, EPA intends to place strong emphasis on using this interim measure

authority to expeditiously initiate cleanup actions, especially in situations where it is clear that such a measure will be a necessary component of the final remedy. The need for interim measures should be assessed early in the corrective action process, as well as in subsequent phases as more information on releases and potential remedial solutions become known.

Under proposed § 264.540(a), the Agency could require the permittee to conduct interim measures at a facility whenever the Agency determines that a release from a SWMU (or, based on site-specific circumstances, a threatened release) poses a threat to human health or the environment. Interim measures will be specified in the schedule of compliance, and will generally serve to mitigate actual threats and prevent imminent threats from being realized while a long-term comprehensive response can be developed.

Interim measures may encompass a broad range of possible actions. In some cases, such measures will involve control of the source of the release, while in other cases, control of the contaminated medium, or other exposure controls, will be necessary. For example, a permittee responsible for contamination of a public drinking water supply may be required to make available an alternate supply of drinking water as an interim measure, until the contaminated surface or ground water can be remediated. A permittee could also be required, as an interim measure, to initiate a ground-water pump and treat system to control the further migration of contamination, if it were determined that further significant degradation of the aquifer would occur while options for the ultimate remedy for the facility are being studied. Other examples of interim measures include fencing off an area of contaminated soils to prevent public access, or overpacking of drums that are in poor condition to prevent possible leakage.

The Regional Administrator will consider the immediacy and magnitude of the threat to human health or the environment as primary factors in determining whether an interim measure(s) is required. Proposed § 264.540(b)(1)-(9) lists factors which the Regional Administrator may consider in determining whether an interim measure is required. These factors include: (1) The time required to develop and implement a final remedy; (2) actual or potential exposures of nearby populations or animals to hazardous constituents; (3) actual or potential contamination of drinking water supplies or sensitive ecosystems; (4)

further degradation of the medium which may occur if remedial action is not initiated expeditiously; (5) presence of hazardous wastes or hazardous constituents in drums, barrels, or other bulk storage containers that may pose a threat of release; (6) presence of high levels of hazardous constituents in soils at or near the surface which may migrate; (7) weather conditions which may cause releases of hazardous constituents or migration of existing contamination; (8) risks of fire or explosion or the potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and, finally, (9) any other situations that may pose threats to human health or the environment. For example, consideration of high levels of hazardous constituents in surficial soils at a facility located adjacent to a surface water body (see § 264.540(b)(6)) used as a drinking water source may lead the Regional Administrator to conclude that immediate excavation of the contaminated soil or other containment measures are needed to prevent a threat to the surface water which could result from runoff after a heavy rain.

Proposed § 264.540(c) would require the Regional Administrator to notify the permittee in writing of required interim measures, and would require the permittee to initiate the interim measures as soon as practicable. In some situations, such as an actual emergency situation, the Regional Administrator might require the interim measure to be initiated immediately, with little if any formal procedures. More typically, however, the Regional Administrator will initiate a permit modification under either § 270.34 or § 270.41 as appropriate, to specify the required interim measure. Section 270.41 modification might be used, for example, if installation of an extensive ground-water pump and treat system were required. This would be appropriate since such a requirement would be resource-intensive for the owner/operator, would likely serve as the basis for a final remedial action at the facility during a later decision-making process conducted by the Agency, and would indicate a serious concern for concentrations of contaminants in the ground water about which the public should receive the extensive notice and comment opportunities provided by that procedure. Conversely, if the interim measure were designed to address problems of lesser magnitude, the procedural requirements of the permit modification proposed today in § 270.34 may be sufficient.

The proposed regulations in this subsection are similar to those in the removal section of the NCP under CERCLA (see 40 CFR 300.415). In many cases, the Agency expects that needed interim measures will be undertaken voluntarily by the owner/operator without the need for permit modification. In some cases, however, the use of CERCLA removal authorities or Section 7003 of RCRA may be appropriate; as in a situation where the permittee is unwilling to respond quickly to an exposure problem that merits an immediate response; and where a permit modification to compel the response would cause unacceptable delay. For example, this would be the case if high levels of constituents had migrated from the facility and were affecting nearby drinking water supplies and the owner/operator was unwilling to voluntarily make available an alternate source of drinking water to affected populations. The Agency would first act to protect against potential exposures, then act to compel the permittee to comply with other conditions necessary to protect human health and the environment.

Section 264.540(d) indicates the Agency's intent for interim measures taken at a facility to be consistent with any further remedy that will be implemented at the facility after full characterizations of the contamination under the RFI and selection of the final remedy under proposed § 264.525.

The Agency has developed guidance for imposing interim measures under RCRA, Interim Final RCRA Corrective Action Interim Measures, OSWER Directive 9902.4, May, 1988. Contact: Tracy Back (202) 382-3122.

As the discussion above indicates interim measures are one type of corrective measure which may be required under the authority of section 3004(u) of RCRA. In considering the statutory requirements for a demonstration of financial assurance by owner/operators for taking corrective action, the Agency evaluated several approaches to financial assurance for interim measures.

In many cases, a requirement to demonstrate financial assurance for interim measures may serve no useful purpose and may actually contribute to delays in facility cleanups. For example, where an interim measure is imposed requiring removal of barrels containing hazardous constituents (similar to a removal action under CERCLA) it would be unnecessary to require a demonstration of financial assurance since compliance would be relatively inexpensive and could be quickly completed.

In other cases, interim measures could be relatively extensive and could be conducted over a period of several years. This could be the case, for example, where a well system must be installed to stop a plume of contamination from further migration at a highly complex site until a final remedy could be implemented, or where a soil treatment system is installed which would require several years to achieve required contaminant concentration levels. In these kinds of cases, a demonstration of financial assurance for interim measures will not substantially impact the implementation of the interim measures and would promote the Congressional intent of ensuring that adequate funds are available to complete the required actions. In such a case, requiring a demonstration of financial assurance for an interim measure within 120 days of the imposition of the interim measure may be reasonable.

Another option for addressing the question of financial assurance that was considered by the Agency, but was rejected, would have interpreted the requirement for financial assurance to apply only to final remedial actions required by the Agency. Still another possible reading of the statute might lead to the conclusion that imposition of any type of corrective action would require a full demonstration of financial assurance. The Agency has concluded that the objective of the corrective action provisions, which is to remediate environmental problems in an expeditious manner and the financial assurance objective of ensuring adequate funding for remediation, should be balanced on a case-by-case basis for interim measures. The Agency specifically solicits comments on this approach.

J. Management of Wastes (Sections 264.550-264.552)

1. Overview. In the course of corrective action, facility owner/operators will manage a wide range of wastes, including both wastes that meet the RCRA definition of hazardous waste and those that do not. Sections 264.550-264.552 of the proposed regulations would establish standards for the management of these wastes during corrective action. Under these sections, wastes that meet the RCRA regulatory definition of hazardous waste must be managed in accordance with the applicable standards of 40 CFR parts 262, 264, 263, and 269, with certain exceptions (see following discussion of temporary units). In addition, statutory land disposal restrictions will be triggered when restricted hazardous

wastes are placed into a land disposal unit, and minimum technology requirements will apply to new or replacement units and lateral expansions of existing units. Finally, non-hazardous solid waste must be handled according to applicable subtitle D standards, except where the Regional Administrator determines that additional controls are necessary to protect human health and the environment.

In general, owner/operators will also have to comply with all other applicable Federal, state, and local regulations. The basic responsibility for complying with any applicable permits and requirements will be the owner/operator's; however, the EPA or State permit writer will consider these requirements in selecting a remedy and will take steps to ensure that remedies selected are consistent with other Federal or State standards.

2. General Performance Standard (§ 264.550). Section 264.550 proposes a general performance standard for management of all wastes during corrective action. Under this standard, the Regional Administrator may impose any requirements on the management of corrective action waste that s/he deems necessary to protect human health and the environment. This standard applies both to solid and to hazardous waste managed as part of RCRA corrective action requirements. This general standard derives from the statutory mandate of section 3004(u) to require corrective action; as a corollary to this authority, the Agency is authorized to ensure that actions taken to implement corrective actions do not themselves pose unacceptable threats. EPA is therefore obligated to impose controls on management of wastes, pursuant to remedial activities, as necessary to protect human health and the environment.

EPA believes this general performance standard is necessary because current regulations governing treatment, storage, and disposal of solid or hazardous wastes may not be adequate in all situations involving corrective action. In particular, many cleanup activities that do not involve treatment, storage, or disposal of hazardous waste require special care to prevent release of hazardous constituents. For example, dredging of surface impoundments or excavation of soils containing volatile organics can lead to significant releases of hazardous constituents to the air, potentially endangering workers or neighboring populations. When such situations have arisen in Superfund actions, EPA has

imposed controls on cleanup activities, such as prohibiting cleanup when the wind was blowing in a certain direction or requiring air monitoring and the cessation of activity when a specific level was exceeded. Requirements to control air emissions from RCRA permitted units, when promulgated, may not be strictly applicable to certain SWMUs. Proposed § 264.550 would give EPA the authority to impose such conditions, or other controls, as part of correction action under section 3004(u).

Section 264.550 proposes general performance standards for management of all wastes during corrective action. Under proposed § 264.550(a), wastes must be managed in a way that is protective of human health and the environment and that complies with applicable Federal, State, and local regulations. Facility owner/operators will be required to comply with all applicable regulations in carrying out corrective action; proposed § 264.550(a)(2) codifies this requirement as a reminder to owner/operators that RCRA corrective action permit conditions do not absolve them of other legal responsibilities.

However, there may be cases where a State or local law stands as an obstacle to the accomplishment of Congress' purpose in enacting section 3004(u), or directly conflicts with regulations developed under section 3004(u). EPA believes that in such rare cases where State or local laws could be said to frustrate the purposes of the statute, a court might find such laws to be preempted by RCRA. See, e.g., *ENSCO, Inc. vs. Dumas*, 807 F.2d 745 (8th Cir. 1988). Alternatively, in the case of a State requirement that could jeopardize implementation of a remedy, it may be possible for the State to waive that requirement.

3. Management of Hazardous Wastes (§ 264.551(a)). In many cases, waste subject to corrective action will meet the regulatory definition of RCRA hazardous waste. A facility owner/operator would be handling hazardous waste at a SWMU, for example, if it contains listed wastes disposed of before November 19, 1980, or the wastes fail the characteristic test. Also, releases from hazardous waste management units exempted from permitting requirements, such as wastewater treatment units or 90-day accumulation tanks, may be hazardous waste even though the units in which they are managed are exempt from permitting. Similarly, soils and ground water contaminated with releases of listed hazardous waste will generally be subject to subtitle C standards. Under

current rules, a contaminated medium that exhibits any of the characteristics identified in subpart C of part 261 or contains a listed hazardous waste, including (with certain exceptions) any constituent generated by a listed waste (e.g., leachate), must be managed as hazardous waste until it no longer contains any of the waste, is delisted, or for characteristic wastes, until it no longer exhibits any of the characteristics. Where wastes meeting the RCRA regulatory definition of "hazardous" are treated, stored, or disposed of during corrective action, they will be subject (with certain exceptions: see discussion below) to the standards of 40 CFR parts 262, 264, and 268 (or, in the case of air emissions, part 269 or the Clean Air Act). Proposed § 264.551(a) clarifies this point.

Proposed § 264.551(a), however, would also allow the Regional Administrator discretion to waive most procedural requirements associated with closure of hazardous waste management units (subpart G of 40 CFR part 264) for units created for the purpose of managing corrective action wastes. Procedural requirements that may be waived include submission and approval of closure plans, and specific time frames for submission and review of the plan and other activities associated with closure.

EPA believes that the process for developing and reviewing remedies as outlined in today's proposal, coupled with the procedures that will be followed in modifying permits to specify remedies, provides an equivalent and equally effective means of ensuring that the applicable closure and post-closure technical requirements are required of units that are created and operated for the purpose of implementing remedies. Were the subpart G procedural requirements to remain applicable to those units, the result would be to have two parallel, and essentially redundant (and sometimes inconsistent), processes for establishing technical requirements for remedial units. It should be understood, however, that the general performance standard for closure (see § 264.111), and the unit-specific technical closure standards could not be waived, and will be applied to new units created during the remedy.

Waiver of the subpart G procedures is at the discretion of the Regional Administrator. In some situations it would be appropriate to require the owner/operator to follow the subpart G process for closure/post-closure for a unit used in remediation activities. An example could be where a unit (such as a tank) is constructed and operated for

the purpose of implementing the remedy for the facility, but the owner/operator subsequently chooses to continue to use the tank after the remedial activity is completed, for other hazardous waste management purposes. Since the tank would no longer be part of the remedy, the owner/operator would have the obligation to follow the normal administrative procedures for closure of the tank.

a. *Temporary Units (§ 264.551(b)).* EPA is concerned that some technical requirements for units prescribed in the current 40 CFR part 264 regulations may be inappropriate for management of hazardous waste during corrective action, and may in fact discourage prompt cleanup. The Superfund program has frequently found it necessary to build temporary units to store wastes for short periods of time before treatment or final disposal. In many cases, the Agency has found that full RCRA 40 CFR part 264 regulatory standards may not be necessary for such short-term storage taking place during the course of remedy implementation, and that full compliance with these standards could in fact delay cleanup. For example, for some remedies it will be necessary to excavate soils contaminated with hazardous wastes and store them in a pile for a short time (e.g., a few days or weeks), prior to treatment. Under current RCRA regulations, the pile would have to comply with the part 264 requirements applicable to waste piles, such as minimum technology liner requirements, ground-water monitoring, and other operating and maintenance requirements. As another example, tanks will often be used for short-term storage of hazardous wastes in the course of a remedy; such tanks would accordingly be required to have full secondary containment. EPA believes that in many cases applying these stringent part 264 standards, which are designed to ensure adequate protection for long-term management of hazardous wastes in such units, would be unnecessary from a technical standpoint, as well as counterproductive in many cases. In the above example of the temporary pile, a single liner might be adequate, with some limited monitoring, depending on the nature of the wastes, the environmental setting, and other factors. Requiring the pile to meet full part 264 standards would result in delays in constructing the pile, and increased expense to the owner/operator which could otherwise be directed to other remedial work, without appreciably increased environmental benefits. Note that adjustments to minimum technology standards

applicable to the pile would have to be done in accordance with certain statutory requirements (see following discussion).

Proposed § 264.551(b)(1) provides EPA authority to modify 40 CFR part 264 regulatory design, operating, or closure standards for temporary units, as long as alternative standards that are protective of human health and the environment and comply with statutory requirements are imposed. In the case of temporary tanks, for example, the Regional Administrator would be making a determination generally analogous to risk-based variances from secondary containment requirements for tanks in §§ 264.193(g) and 265.193(g).

The Agency believes that this approach to temporary units; that is, adjusting design and operating standards for such units on a site-specific basis, is sensible and practical within the context of the corrective action process. The process of examining and selecting corrective action remedies will involve a high degree of Agency oversight, and remedial decisions will be made in consideration of a number of site-specific factors. Since remedies can be tailored to site-specific conditions, a degree of protection of human health and the environment equivalent to the generic national standards can be achieved, while facilitating the timeliness and implementability of the remedies.

This provision for temporary units could apply to any unit used during corrective action, except incinerators and non-tank thermal treatment units (e.g., pyrolysis units). EPA believes that modifications of 40 CFR part 264 design standards should not be allowed for incinerators and non-tank thermal treatment units because of the complexity of these devices and the high level of public concern about their operation. Furthermore, the Regional Administrator would be authorized to modify only technical standards for temporary units under this authority, not performance standards. For example, secondary containment for tanks might be modified in specific situations; however, basic performance standards relating to releases to the environment—such as performance standards in the 40 CFR part 269 air emissions regulations—could not be modified.

It should be understood that under this provision for temporary units, only requirements applied solely by regulation, and not directly by statute, may be modified. Statutory requirements may be modified only to the extent authorized by statute.

Two statutory requirements in particular may often be applicable to temporary units, specifically, the land disposal restriction requirements of RCRA section 3004(d)-(g) and 40 CFR part 268, and the minimum technology requirements of section 3004(o). However, the Agency expects that temporary units may often be able to meet the statutory provisions for waivers from these requirements under section 3004(g)(5) (for the land disposal restrictions), and section 3004(o)(2) (for minimum technology requirements). The major permit modification associated with the selection of remedy would provide the public notice and comment usually associated with a petition submitted by the owner/operator (a waiver of land disposal restriction requirements would, however, also be published in the *Federal Register*, as required by RCRA section 3004(i)). In addition, the statement of basis associated with the permit modification will summarize, and the supporting Administrative Record will provide, the documentation of the Agency's finding that the statutory requirements for granting the waiver have been met.

The Agency believes that waivers from these statutory requirements will often be appropriate for temporary units, and in some cases may also be essential to the prompt implementation of corrective action. For example, in many cases it will be necessary to place wastes temporarily on the land beside a hazardous waste unit when that unit is being excavated; this placement would be an interim step before incineration or other treatment. It has been EPA's experience in Superfund that full compliance with minimum technology requirements (i.e., double liners, leachate collection systems, and ground-water monitoring) in such cases may often be unnecessarily restrictive and could delay cleanup. Instead, in cases of short-term storage, something less than minimum technology—for example, a single rather than double liner—could frequently be fully protective of human health and the environment. The Regional Administrator could require design standards less stringent than the full minimum technology requirements, so long as they would ensure (consistent with the waiver provision of section 3004(o)(2)) that the controls will be of an equivalent level of protection for the life of the unit.

Similarly, the application of land disposal restrictions to the temporary placement of waste could impede corrective action in some cases. If the restrictions applied it would be impossible to store wastes on the

ground while they awaited treatment, because placement on the ground could not occur before the treatment. The only alternative would be to leave the waste untreated in place, or to store it in tanks or containers, which in some cases might cause a delay and add to the complexity of the remedy without serving public health or the environment. In such cases, it would be necessary to demonstrate that the petition standards for the land disposal ban have been met, so that such temporary placement on the land would be allowed.

In modifying 40 CFR part 264 and part 269 design or operating regulatory standards, and in establishing alternative standards, the Regional Administrator would be required to consider a range of factors, which are listed in proposed § 264.551(b)(2). These include the length of time the unit will be in operation, the type of unit, the potential for releases from the unit, the type of waste, hydrogeological and other conditions at the facility, and the potential for human and environmental exposure to releases if they did occur. The Regional Administrator would specify in the permit design and operating requirements that would apply to the temporary unit and the length of time it could remain in operation, and requirements associated with its closure. These conditions would be subject to public notice and comment as part of the process for approval of remedy selection.

Today's proposal specifies a time limit of 180 days for temporary units. This time period is consistent with the closure period for a hazardous waste unit and the "temporary authorization" period in the new permit modification rule. It is expected that many temporary units will be needed for much shorter periods of time; however, EPA also recognizes that in some cases a temporary unit might have to remain in service beyond the 180-day limit, due to unexpected circumstances. For example, if wastes being stored in a temporary unit were to be taken to an off-site facility, and that facility no longer had the capacity or was unwilling to accept the waste, it might be advisable to continue storing the waste in the temporary unit for a limited amount of time (e.g., 30 days). In such cases, the facility owner/operator could request an extension. Requests for such extensions would typically be processed as a Class I modification, with Regional Administrator approval, under permit modification procedures of § 270.42. Such time extensions for temporary units would only be approved where it

is necessary because of unforeseen, temporary, and uncontrolled circumstances, and when the owner/operator is actively seeking alternatives to continued use of the unit(s). If the owner/operator failed to move expeditiously to remove the unit, the Agency would deny further extensions and require the owner/operator to retrofit the unit to meet all applicable Subtitle C design and operating standards, or remove the waste and close the unit.

EPA considered several alternatives in specifying time limits for temporary units. One alternative would have been to not specify a generic time limit for temporary units in the rule, and allow the Regional Administrator to set permit conditions limiting the active life of a temporary unit on a case-specific basis. This approach would allow more flexibility in designating such units, recognizing that the amount of time a temporary unit could safely remain in service may vary significantly, depending on the type of unit, type of waste, unit location and other factors. Another approach could have been to specify a shorter time limit, such as 90 days, which would be consistent with the provision for on-site accumulation of wastes by generators (§ 262.34). Alternatively, a specified time period longer than 180 days (e.g., one year) for temporary units might also be appropriate. EPA specifically requests comments on its approach to temporary units, including suggestions for how "temporary" should be defined.

Today's proposal (§ 264.551(b)(2)(ii)) also clarifies that off-site units (i.e., that are located outside the facility property) will not be treated as "temporary units" for the purpose of managing hazardous wastes generated as part of a remedy or interim measure.

In addition, proposed § 264.551(b)(2)(iii) specifies that temporary units may only be used for treatment or storage of wastes that originate within the facility boundary. This would preclude, for example, wastes from a different facility from being brought to a temporary unit at another facility for storage or treatment. However, wastes that were released from solid waste management units at the facility, and that subsequently migrated beyond the facility property, could be recovered and managed in a temporary unit in the context of implementing a remedy. Comment is solicited on these limitations to the temporary unit concept.

b. *Corrective Action Management Units* (§ 264.551(c); § 264.501). In many cases, corrective action at RCRA

facilities will address broad areas of contamination, which may or may not themselves contain discrete waste management units. For example, soils surrounding one or more leaking surface impoundments, landfills, or tanks may be contaminated. In devising a remedy to address this situation the facility owner/operator, at the direction of EPA, could consider the contaminated area as a whole and select a remedy that best addressed the entire area of contamination. In these situations, EPA believes that the entire area of contamination can properly be considered a waste management "unit" under the RCRA regulatory structure. Consequently, proposed § 264.551(c) gives the Regional Administrator the authority to designate such areas as corrective action management units (CAMUs).

As indicated in proposed §§ 264.551(c) (1) and (2), designation of such an area as a waste management unit will have important implications for the management of hazardous waste within that area. Specifically, movement or consolidation of hazardous wastes within these areas will not automatically trigger the statutory land disposal restrictions (sections 3004(d)-(g)) or minimum technology requirements (section 3004(o)). Land disposal restrictions are triggered by placement of a restricted waste in a waste management unit (section 3004(k)); minimum technology requirements are triggered by the creation of new or replacement surface impoundments or landfills, or lateral expansions of existing surface impoundments or landfills (section 3004(o)(1)). Consequently, if an area of contamination is designated as a unit by EPA during corrective action, hazardous waste moved within the unit would not be subject to land disposal restrictions. Similarly, moving hazardous wastes around inside the unit will not constitute either creation of a new or replacement unit, or a lateral expansion of an existing unit; therefore the minimum technology standards would not apply.

EPA believes that this approach to defining "unit" in the context of corrective action is essential to the implementation of sections 3004(u) and 3008(h) of RCRA, and that it accurately reflects the realities of cleanup activities. In addressing a broad area of contamination, EPA or a facility owner/operator requires the flexibility to move hazardous waste around and consolidate it without automatically triggering minimum technology or treatment requirements at every turn. For example, a typical remedy at a

corrective action site might consist of treatment of the most highly contaminated soil at an off-site incinerator, together with on-site consolidation and capping of remaining soil containing hazardous constituents at low concentrations. Incineration or other treatment of the less contaminated soil might yield few, if any, benefits, and it might in some cases delay cleanup and increase risk; for example, risk resulting from transportation of wastes. However, in moving the soils for consolidation, a narrow application of land disposal restrictions might require incineration (or other treatment) of the soil and prohibit the most straightforward, implementable, and, in some cases, most effective remedy. Similarly, imposition of minimum technology requirements will add to the cost of cleanups and may, in some cases, cause delays in implementation, without providing any significant environmental benefit.

EPA believes that its general approach to the definition of unit makes sense not only within the context of section 3004(u) but also for other remedial action involving waste already in place—such as source control taken in the course of a final cleanup of a unit which will not receive waste in the future. Where remedial action is taking place within an area that has already been contaminated, there should be sufficient flexibility to select effective remedies that can be safely and reliably implemented. In cleaning up existing contamination problems, EPA believes that it will often be unnecessary and counterproductive to strictly apply to cleanup activities standards that were designed to prevent future risks at operating facilities that will continue to receive and manage hazardous waste.

In § 264.501, EPA is today proposing a definition of "corrective action management unit," which is intended to clarify the nature and scope of the areas which may be given this designation. The definition is as follows:

... an area within a facility as designated by the Regional Administrator for the purpose of implementing corrective action requirements of this subpart, which is broadly contaminated by hazardous wastes (including hazardous constituents), and which may contain discrete, engineered land based sub-units."

This definition is intended to place several important restrictions on how CAMUs are designated, and on how hazardous wastes must be managed within CAMUs. It should first be recognized that it will be the Agency's (or State's) role to define the areal configuration of any CAMU at a facility.

This decision should be made based upon careful assessment of the extent of the contamination of soils, location of existing solid waste management units, the remedial objectives for the facility, and other relevant factors. Although owner/operators may wish to propose a specific area as a CAMU, the decision as to whether designating a CAMU is necessary and appropriate to implementing a remedy, and if so, the boundaries of the unit, must rest with the Agency or the State.

In designating CAMUs, only areas where contaminated soils or concentrated wastes already exist will be included. Uncontaminated or "virgin" areas of a facility cannot be included within a CAMU. Likewise, two separate areas of contamination could not be combined into one CAMU, since they could not be considered a single unit.

In some cases, remedial solutions may involve creating new "sub-units," or enlarging existing ones within a CAMU. For example, dispersed, low-level contaminated soils might be consolidated into a smaller, discrete landfill which would then be capped. Similarly, in some cases an effective remedial approach could be to remove wastes from several small landfills within a broad area of contamination, stage them in a waste pile prior to treatment, and dispose of the residuals in a newly engineered "sub-unit." Thus, it is intended that CAMUs may include one or more land based sub-units created or expanded as part of the cleanup action, as well as pre-existing solid waste management units.

In specifying that a CAMU may contain land-based sub-units, the proposed definition is meant to clarify that non-land based units, such as a tank or an incinerator, would not be considered part of the CAMU. Thus, while a remedy might involve constructing a tank treatment system for contaminated materials within the area defined as the CAMU, the tanks would be subject to all applicable part 264 standards for tanks, and the residuals from the treatment systems would also be subject to any regulatory or statutory requirements that would apply had the CAMU not been designated.

The Agency believes that allowing the creation of land based sub-units within a CAMU is reasonable and necessary to realizing the basic objective of the CAMU concept; i.e., allowing sensible cleanup solutions for existing contamination problems. In essence, a CAMU can be considered to be a large, land-based unit. Remedial actions such as treating or consolidating wastes, or creating new land-based units within

the CAMU, serve in effect to enhance the environmental performance and integrity of the unit.

In developing the concept of the CAMU as articulated in today's proposal, the Agency considered several alternative approaches. One option would have been to only allow movement of wastes into existing landfill areas within the CAMU; new land-based units would not be considered as part of the CAMU. This option could have caused land disposal ban and minimum technology requirements to be triggered relatively frequently, thus restricting decision makers' flexibility to upgrade these areas of the CAMU, and engineer more effective and protective waste management systems. In addition, the option would likely create substantial difficulties in defining what constituted new units within the area of existing contamination.

EPA also considered options that would have significantly broadened the CAMU concept. Once such option would have allowed wastes to be excavated, treated in a non land-based unit (e.g., a tank) within the CAMU, and the residuals redeposited on the land without triggering the land disposal ban. A variation of this approach would also allow an incineration or other thermal treatment system to be considered as part of the CAMU. Yet another option considered would have allowed CAMUs to include land areas at the facility that were not already contaminated; such areas might thus be used as sites for locating new landfills. Although these options would have offered more flexibility in designing remedies, the Agency has chosen not to propose such broader interpretations of the CAMU concept, for several reasons. Allowing uncontaminated land to be included as part of a CAMU (and thus potentially allowing it to become contaminated) would have contradicted the overall intent of the CAMU; that is achieving reasonable cleanup solutions for existing contamination problems. In addition, allowing non land-based units to be considered part of the CAMU would, in effect, contradict the notion of the CAMU as a type of land-based unit (albeit one that is contaminated and needs to be upgraded to improve its protectiveness), and could have complicated the ability to impose the stringent part 264 standards for treatment units such as incinerators.

It should be understood that, given today's proposed definition or any of the alternative approaches described above, several fundamental requirements will apply to CAMUs. Firstly, land disposal

restrictions will apply whenever hazardous waste is placed into a CAMU from outside its defined area. In addition, all waste management activities conducted within the CAMU will be protective of human health and the environment, will conform to the standards for remedies proposed in § 264.525(a), be evaluated in terms of the remedy selection factors of proposed § 264.525(b), and comply with the cleanup standards of proposed § 264.525(d). Finally, all decisions regarding the scope of CAMUs and the nature of remedial activities that will be conducted within them will be subject to public review and comment during the remedy selection and permit modification process.

EPA specifically invites comment on today's proposed approach to defining CAMUs, and any alternative approaches which may be viable in achieving the remedial goals for which it is intended.

Proposed § 264.551(c)(4) lists the factors which the Regional Administrator will consider in specifying closure requirements for CAMUs. As with other units created for the purpose of implementing corrective action remedies, EPA proposes to not apply part 264 subpart G procedural requirements for closure to CAMUs (see previous discussion on closure of remedial units), in favor of using the remedy selection and permit modification process that will serve to establish comprehensively the technical requirements for the remedy. In addition, under today's proposal, the specific technical standards for closure and post-closure (e.g., type of cap, scope of post-closure ground-water monitoring) of CAMUs would be determined through the corrective action process rather than the unit-specific technical closure standards of part 264.

Technical requirements for closure and post-closure of CAMUs, therefore, will be established on a site-specific basis. The specific requirements for CAMU closure/post-closure must be designed to achieve the general performance standard of § 264.551(c)(5). This standard is essentially the same as the performance standard for closure in subpart G (see § 264.111). In addition to this general standard, the Regional Administrator will use the decision factors specified in § 264.551(c)(4) in determining the specific closure and post-closure requirements that are appropriate for the CAMU to ensure that the general performance standard is met. These decision factors will include considerations of waste and unit and environmental characteristics, as well

as the potential for exposure to contaminants should future releases occur.

This approach to determining closure/post-closure requirements for CAMUs is intended to provide flexibility for the regulatory Agency in setting appropriate standards specific to the site conditions, while also ensuring that adequate long-term controls are imposed for any wastes remaining within the CAMU. This approach is also consistent with the general process for defining remedies and for management of wastes as established in proposed §§ 264.525 and 264.550-552.

EPA considered other approaches for prescribing closure/post-closure requirements for CAMUs. One approach would have been to adopt a set of more specific requirements that would be applied generically to all CAMUs. This approach would have been similar to the current RCRA regulations for closure/post-closure of conventional hazardous waste units (e.g., tanks or waste piles). This approach was rejected, however, for two reasons. First, the closure requirements for hazardous waste units are designed to apply to discrete, engineered units that must also comply with specific design and operating standards under RCRA. In contrast, CAMUs will typically be broad, contaminated areas that may contain discrete or non-discrete "sub units" of varying types and configurations. It would therefore be impractical to specify generic national standards for a class of units that will be of such diversity, and within which it will make sense to apply different closure techniques to different areas or sub-units of the CAMU.

The second reason for not applying generic national standard to closure of CAMUs relates to the nature of the corrective action process. Under corrective action, the Agency has considerable control over the technical decision-making process, and cleanup problems at facilities are typically subjected to direct Agency review and oversight. In contrast, the closure process under RCRA typically involves review and approval of owner/operator plans against established regulatory standards. EPA believes that the greater control over technical decisions that is provided under corrective action allows a more site-specific tailoring of closure requirements based on a thorough knowledge of site conditions.

4. Management of Non-Hazardous Solid Wastes (§ 264.552). In other cases, wastes addressed under corrective action will not meet the specific RCRA definition of hazardous waste. Many

wastes that do not meet the RCRA regulatory definition of hazardous wastes contain varying concentrations of hazardous constituents that, if the waste is improperly disposed of, could be released to ground water, surface water, soil, or air. The goal of corrective action is to protect human health and the environment by removing these contaminants from the environment, and controlling the source of the release—even if the waste from which the release originated does not meet the regulatory definition of hazardous.

Proposed § 264.552 states that non-hazardous wastes handled during corrective action must be handled in accordance with any applicable subtitle D standards. The Agency is in the process of developing more comprehensive regulations under subtitle D, and will continue to examine in that context issues relating to the applicability of those regulations to the management of solid wastes undertaken as part of subtitle C corrective actions.

In addition, the proposal provides the Regional Administrator authority, under certain circumstances, to impose more stringent standards than subtitle D. For example, a specific waste might not be listed as hazardous, but it might have a high concentration of specific hazardous constituents, or it might be similar in composition to a listed waste. In such cases, the Regional Administrator could impose subtitle C standards or standards that were protective given the circumstances at the site and characteristics of the waste where necessary to protect human health and the environment even though the waste did not technically meet the definition of hazardous waste.

K. Required Notices (Section 264.560)

1. *Notification of Ground-Water Contamination.* Proposed § 264.560(a) would require the permittee to notify EPA and any persons who own or reside on land adjacent to the facility in writing within 15 days when s/he discovers that hazardous constituents originating from a SWMU at the facility have migrated beyond the facility boundary in concentrations that exceed action levels.

Action levels are defined in proposed § 264.521 of today's proposal, and are discussed in detail in section VI.E of this preamble; therefore, they are not discussed in detail here. However, the reader should note that action levels are established using conservative assumptions to protect human health and the environment. Concentrations exceeding action levels will not necessarily result in adverse effects. Short term exposures to releases above

action levels may often not represent a threat to human health or the environment since action levels are derived using long-term exposure assumptions. In fact, in some cases constituents at or above action levels will not ultimately require active remediation.

This notification requirement is limited to situations in which the adjacent land can reasonably be determined to overlie the contaminated ground water given current knowledge of the direction and rate of the ground-water flow.

EPA believes that it is appropriate to require such notification in order to provide adequate awareness for persons who are, or who could potentially be exposed to the contaminated ground water. It is possible that residents near a facility could be using water from wells that have become contaminated from the facility; in such cases, prompt notice to the individual would be an essential part of the response action.

The Agency may require the permittee to initiate an interim measure to address off-site ground-water releases virtually immediately, including making available an alternative drinking water supply when drinking water supplies have become contaminated. On the other hand, the Agency may ultimately decide, based on further study, that no further action will be necessary. Such might be the case where the ground water is highly saline, and not usable for drinking. As explained earlier in this preamble, the actual response action that may be required when ground-water contamination is identified will be determined by a variety of site-specific factors. In any case, an early notification that an action level has been exceeded will alert the adjacent resident or owner to the potential problem and will allow their informed comment on further permitting actions taken at the facility if they have special concerns. EPA solicits comment as to what alternative mechanisms or approaches could or should be required to alert potential users of ground water that contamination has occurred from a facility.

2. *Notification of Air Contamination.* Proposed § 264.560(b) would require the permittee to notify, in writing, EPA and any residents or other individuals who may be exposed to air emissions from SWMUs above action levels. This proposed notification requirement would apply when there is exposure in a residential setting, or other situation where long-term exposure to the air emissions from the facility can reasonably be assumed. This is consistent with the overall approach to

corrective action for air releases (as discussed in section VI.E of this preamble).

This notification requirement for air would also be triggered when residences or activities that could result in long-term exposures become established near the facility after the initial release investigations have been conducted and are within an area where air emissions have been found to exceed action levels. Permittees whose remedial investigations have confirmed substantial air emissions migrating beyond their property limits have a continuing responsibility to identify and provide notice whenever such exposure situations occur. If concentrations of hazardous constituents in air beyond the facility boundary are found to be causing actual exposure problems of concern, the Regional Administrator may require the permittee, in addition to the notice requirement, to institute an interim measure to reduce the threat. For example, s/he could require the installation of a floating cover on a surface impoundment for the purpose of reducing the surface area of the impoundment available to allow the escape of hazardous constituents to air. In many cases the release to air will be reduced or eliminated during the course of remedial activities at the facility. For example, a permittee may be required to excavate and treat wastes contained in the SWMU or to cover the SWMU with a cap.

EPA solicits comments on what alternative mechanisms or approaches could or should be required to alert persons who may be exposed by releases of hazardous constituents into the air from RCRA facilities.

3. *Notification of Residual Contamination.* Under the regulatory authority proposed in § 264.560(c), the Regional Administrator may require the permittee to provide notice whenever hazardous wastes (including hazardous constituents) are left in place in the subsurface at the facility. This requirement would apply whether hazardous wastes or hazardous constituents left in the subsurface are contained in a discrete unit or diffused throughout subsurface soils. The notice would consist of a notation in the deed to the facility property; or a notification via some other instrument used by the State if the instrument is routinely searched during the course of transferring ownership of property. When such a notice is required, the notice must clearly indicate the types, concentrations, and locations of hazardous wastes or hazardous constituents that remain at the property.

EPA believes that the Agency's authority to allow owner/operators to certify completion of their corrective action responsibilities and, in some cases, close or transfer ownership of the property while hazardous wastes remain in place in the subsurface is accompanied by a responsibility to ensure that future owners of the property do not inadvertently act in a way that could result in harmful exposures to the residual contamination. This could occur, for example, when a facility in an area where mixed land uses are common (e.g., residential and light industrial uses) is closed in accordance with applicable regulations and ownership of the property is transferred several times over the course of a few years. If notice is not provided in the property deed, a new owner could be unaware of its previous use for hazardous waste management. Inadvertently, the new owner could then initiate construction or other activities in a manner or at a location where disturbance of the subsurface could result in potentially harmful exposures. For example, by digging a foundation in a certain location, the owner might unearth an old solid waste management unit, and in doing so damage any engineering controls designed to prevent releases from the unit. One of the most likely situations in which residual contamination would remain at the property is where facilities have large areas of contaminated soils deep in the subsurface.

The residual contamination notice requirement proposed today is analogous to the existing requirement contained in 40 CFR 264.119 that facility owner/operators place a notice in the deed (or other instrument normally examined in title searches) within 60 days after the first and the last hazardous waste units at the facility are certified closed in conformance with the approved closure plan, in compliance with subpart G standards. This notice is required in recognition that post-closure care may need to be instituted for some units (or, in the case of corrective action, areas of contamination) where hazardous wastes remain in place. Until the term of the final facility permit expires (i.e., all closure, post-closure, and corrective action responsibilities at the facility have been fulfilled), the permit responsibilities shift to any new owner or operator who assumes control of the property. After the final permit has expired, the Agency believes that prospective purchasers of the property should be made aware of the past use of the property, legal restrictions imposed on its future use, and the location and

details of any residual contamination on the property which could influence decisions of the new owner concerning allowable future uses.

In some cases it may be appropriate to require the owner/operator to place the deed notice well before expiration of the permit. For example, a selected remedy may involve capping (thus, leaving in place) units or contaminated soils in an area of the facility. This part of the remedy could be implemented well before all other corrective action requirements at the facility are completed. In this situation, it may be appropriate to require the deed notice as part of the remedy selection permit modification, thus providing notice to prospective purchasers if ownership of that portion of the facility were to be transferred at some point before the permit is terminated.

L. Permit Requirements (Sections 270.1(c)-270.60(c)(3))

1. *Requirement to Maintain a Permit (§ 270.1(c)).* Today's proposal would require an owner/operator to operate under a valid RCRA permit for the entire length of time required to comply with requirements of part 264, subpart S or F corrective action. This requirement would be established by adding to the existing language of 40 CFR 270.1(c), which defines the period during which owner/operators of RCRA treatment, storage, or disposal facilities must maintain a permit. Where corrective action is required under a permit, a permit will be necessary for the duration of the activities regardless of whether other waste management activities are continued at the facility. For example, at a storage or treatment facility not required to have a post-closure permit, the permittee may decide to cease operation prior to or at the end of the term of his/her permit and close the facility according to applicable regulations, rather than reapply for another permit term. If that owner/operator had any remaining corrective action responsibilities at the facility, today's proposal would require that the permit be maintained even after the hazardous waste units are closed, until all subpart S or F requirements have been terminated.

This provision is also likely to have important implications in situations involving transfer of property for which corrective action obligations under subpart S have not been fully discharged. An example would be a facility with a solid waste management unit causing a release to ground water that had been issued a permit with a schedule of compliance requiring the owner/operator to investigate the

release and ultimately implement a remedy, where the owner/operator subsequently sold the portion of the facility property upon which the solid waste management unit was located. In this and other situations, EPA believes that transfer of corrective action responsibilities to new property owners is critical to ensuring that RCRA facility owner/operators are not able to evade cleanup requirements by simply selling the contaminated portions of their facilities. If such a transfer of ownership did not also involve a transfer of legal responsibility for complying with corrective action permit conditions, the effect could be a substantial number of new Superfund sites that could no longer be addressed under RCRA. EPA does not believe that Congress intended, in enacting section 3004(u), to create or to allow such an evasion of cleanup responsibilities. The Agency, therefore, intends to require new owners of property at which corrective action responsibilities have been identified in the permit, to obtain a permit and comply with the corrective action requirements specified in the permit. Those corrective action requirements could, alternatively, be specified and enforced through an administrative order (e.g., under section 7003).

EPA specifically solicits comment on cleanup responsibilities following transfer of property. As an alternative to the approach outlined above (under which the new owner/operator becomes responsible for cleanup) EPA considered a provision that would require the former owner/operator to maintain corrective action responsibility. Under such an approach, it is likely that the former owner/operator's responsibilities would be limited to those off-site activities (i.e., activities on the transferred property) that the new owner/operator allowed him to undertake. The former or new owner/operator's responsibility to undertake corrective action on transferred property may also be dependent upon the status of corrective action activities at the time of transfer. For example, a transfer of property before permit issuance would probably not implicate section 3004(u) responsibilities. Transfers occurring after the permit is issued but before remedy implementation or interim measures have begun (e.g., some transfers during the RFI and CMS stages) should perhaps be subject to different rules than transfers occurring after remedial activities have begun.

After consideration of public comment on these questions, the Agency intends to develop a provision governing

corrective action responsibilities upon property transfer for the final rule.

2. *Schedules of Compliance for Corrective Action (§ 270.34).* Section 3004(u) of RCRA specifies that "Permits issued under section 3005 shall contain schedules of compliance (where such corrective action cannot be completed prior to issuance of the permit) * * *." Section 270.34 of today's proposal would codify this requirement and provides a regulatory framework for its implementation.

Schedules of compliance will be a major tool for imposing corrective action requirements because, in most cases, the complex and sequential nature of the corrective action process will not allow its completion prior to permit issuance. The provisions of today's proposed regulation, including plans and reports for remedial investigations and Corrective Measure Study and remedies, will, for the most part, be implemented through a schedule. Consequently, the quality and detail of the permit schedule of compliance are extremely important if the objectives of the corrective action program are to be achieved.

In addition to codifying a statutory requirement, proposed § 270.34(a) states that a corrective action schedule of compliance shall " * * * contain terms and conditions deemed by the Director to be necessary to protect human health and the environment." This provision is derived from the basic statutory objective of RCRA (protection of human health and the environment; see section 1003 of RCRA), and is a logical extension of statutory language found in section 3004(u) which allows cleanup to be implemented through a schedule of compliance specified in the permit where corrective action cannot be completed prior to permit issuance. The Agency believes that inclusion of this language in proposed § 270.34 is desirable to clearly assert the authority of the Region or State to include requirements in the corrective action schedule of compliance to address contingencies that arise during the corrective action process and that are not specifically contemplated by today's proposed regulation, but that must be dealt with in order to protect human health and the environment.

Proposed § 270.34(b) would require the permittee to comply with the schedule imposed in the permit, and provides a time frame for notifying the Agency when s/he finds that such compliance will not be possible. When the permittee will not be able to meet the schedule, s/he must initiate a permit modification under provisions of the recently issued permit modification rule (September 28, 1988, 53 FR 37912,

discussed below). Section 270.42(f) of this rule establishes procedures for owner/operators who wish to initiate permit modifications where the desired modification has not been specifically listed as either a Class I, II, or III modification. These procedures are discussed in detail in the permit modification rule and its preamble. In addition, a brief explanation of the provisions of the proposed rule is included later in this discussion.

In § 270.34(c) the Agency proposes a specific procedure for modifying corrective action schedules of compliance for the purpose of implementing subpart S requirements. The proposed § 270.34(c) mechanism is important for two reasons. First, since permits containing corrective action schedules of compliance will often be issued before complete information has been gathered as to the extent and nature of any releases at the facility, and, therefore, the corrective action necessary to address such releases, it will generally not be possible to adequately predict (and thus specifically provide for in the schedule) all requirements and contingencies necessary to develop and implement such corrective action at the facility. Therefore, it may often be necessary for the Agency to modify the schedule of compliance to provide for new actions or to make mid-course changes to provisions specified in the original schedule. Secondly, this modification provides a mechanism to resolve disputes which may arise between the permittee and the Agency concerning the scope or meaning of conditions in the schedule of compliance when those disagreements cannot be resolved through less formal means. (The potential use of this modification procedure for dispute resolution is discussed in more detail later in this section of the preamble.)

It should be understood that the § 270.34(c) procedure will be applied only in modifying corrective action schedules of compliance; it will not be used to modify terms or conditions of the permit that are outside the scope of the schedule. Given this narrower application, a modification made according to § 270.34(c) would not constitute reissuance of the permit.

It is the Agency's objective in creating this modification process for corrective action schedules of compliance to ensure that such actions are implemented expeditiously, while preserving the permittee's due process rights, and ensuring adequate public participation.

The procedures proposed for modifying schedules of compliance

using this proposed authority are found in § 270.34(c) (1)-(5); there are fewer procedural requirements for this modification than for a major modification initiated under the current authority of 40 CFR 270.41. Under proposed § 270.34(c)(1), the Director would notify the permittee in writing of the proposed permit modification. This notification would include a description of the exact change(s) to be made to the permit and an explanation of why the change is needed; it would also indicate the date by which the Director would have to receive any comments on the proposed modification. In addition, the notification would indicate whether any supporting documentation is available for review. Further, the notification would include the name of the Agency contact designated to receive comments. At the same time, the Director would publish a notice of the proposed modification in a locally distributed newspaper (§ 270.34(c)(2)), provide notification to individuals on the facility mailing list, and place a notice in the information repository being maintained for the facility. If the permit required that a repository be established. Each of these notifications would contain all of the information included in the notice to the permittee. The comment period provided would extend for no fewer than twenty days after publication of the newspaper notice (or, for the permittee, twenty days after receiving the written notification if the notice were received later than the date of the newspaper notice publication).

If the Director does not receive written comments on the proposed modification, the modification will become effective five days after the close of the comment period. S/he will then notify the permittee and individuals on the facility mailing list that the modified permit is in effect, and will place a copy of the modified permit in the facility's information repository where such a repository is maintained.

If written comments on the proposed modification are received, as provided in § 270.34(c)(4), the Director will make a final determination as to what, if any, changes should be made to the modification. This determination should generally be made within 30 days after the end of the comment period. In some cases, however, it may not be practicable for the Director to make the determination within that time frame; this would not affect the legal validity of the modification. When the determination has been made, the Director will provide notice to the permittee in writing and to the public through a notice in a local newspaper, of

the final decision on the modification. The notice will include an explanation of how comments received were considered in the final decision, an indication of the effective date of the modification (no later than fifteen days following the notification), and a copy of the final modification. EPA believes that the abbreviated § 270.34(c) modification procedures will strike an appropriate balance in most cases between the public and government's interest in ensuring expeditious remediation of harmful situations, and the permittee's due process rights.

It should be understood that the procedure outlined above is a minimum process, and does not preclude providing additional steps or opportunities for review and comment. For example, the Director could conduct a public meeting during the comment period, if it was determined to be appropriate in addressing concerns of the permittee or the public, or both. In other cases, the comment period might be extended for some period to allow for more thorough review or comment. Moreover, as noted later, the burden imposed by some changes may warrant the more extensive process provided for in § 270.41.

Section 270.34(c)(5), as proposed, does not provide for administrative appeals of modifications to corrective action schedules of compliance that are made under the procedures of § 270.34. The administrative appeal process can be quite lengthy; experience with RCRA permit appeals has been that appeal decisions may often take one year or more. If an owner/operator's appeal is denied, s/he then has some recourse through judicial appeal proceedings. Thus, the proposed § 270.34(c) modification process may be advantageous in situations where disputes between the Agency and the owner/operator will be most effectively resolved by reaching a final Agency action expeditiously (see discussion below on dispute resolution). The absence of an administrative appeal procedure will not affect the owner/operator's right to judicial appeal of modification decisions.

When initiating modifications to corrective action schedules of compliance, the Director will decide on a case-by-case basis which modification procedure—§ 270.34(c), or a major modification under § 270.41—is appropriate. A number of factors may influence this decision. Since the § 270.34(c) procedure is less complex administratively and should take substantially less time to make modifications effective, it is anticipated

that the process will be used for modifications that are relatively routine and do not include very large additions or changes to the requirements already specified in the schedule. An example might be a requirement to increase the frequency or methods used for groundwater sampling. On the other hand, some Director-initiated modifications, because of the nature, scope, or anticipated resource burden of complying with the new requirement, may be more appropriately handled as a major modification under § 270.41. One example of such a situation is the permit modification for specifying the remedy (see proposed § 264.526); the rule explicitly requires the major modification under § 270.41 in these situations.

In addition to the relative magnitude of the requirement(s) being imposed through a modification, other factors such as timing and public participation considerations may affect decisions as to which type of permit modification should be used. For time-critical actions, such as might be the case for one of several types of interim measures, the § 270.34(c) modification would likely be most appropriate, since the § 270.41 process can take a number of months before the modification requirements are effective. Likewise, for imposing requirements that are especially sensitive or controversial from the community's perspective, major modification procedures, which allow maximum public input into the substance of the permit modification, could be most fitting.

The two types of modifications discussed above also have different legal conclusions, which will also be a factor in the decision as to which one may be more appropriate. The proposed modification under § 270.41 is subject to administrative appeal. It is subject to judicial review only after the appeal process has been completed. (Permit appeal procedures are described in 40 CFR part 124.) As discussed earlier, the § 270.34(c) modification would not be subject to administrative appeal. When it is apparent that a disagreement between the permittee and the Agency over corrective action requirements cannot be resolved outside the judicial process (such as might be the case in dealing with a recalcitrant owner/operator), this type of modification would likely be the most direct and timely means of reaching such resolution.

The need for flexibility in procedural requirements for initiation of modifications to corrective action schedules of compliance is supported by

an analysis completed for owner/operator initiated permit modifications. EPA issued a rule on September 28, 1988, concerning owner/operator-initiated permit modifications, which was the result of a regulatory negotiation effort involving EPA, industry, States, and public interest groups (see § 270.34 schedules of compliance for corrective action). In this rule, the Agency recognized that situations in which permittees request permit modifications represent a continuum of potential impacts on the permittee, the public, and the environment, which, in turn, warrant a continuum of procedural requirements. The rule does not alter major permit modifications under § 270.41. However, for permittee-requested permit modifications (under a new § 270.42), the rule establishes a permit modification classification system, with each modification defined as either Class I, II, or III. Proposed Class III permit modification procedures are similar to the existing procedural requirements for a major modification initiated by the Director under § 270.41 (additional public meetings are required in the Class III procedures). Class II procedures are somewhat less extensive; and Class I modifications, which are of a limited nature, generally do not require formal Agency approval.

Today's proposal in § 270.34(c) for modifying corrective action schedules of compliance reflects a balance between reasonable public participation and the Agency's need for flexibility in procedural requirements for permit modifications similar to that afforded owner/operators in the recent permit modification rule. The relatively streamlined process associated with proposed § 270.34(c) will not only reduce the administrative requirements imposed on the Agency, but will also minimize delays in implementation of necessary corrective action requirements in appropriate circumstances.

It is important to note that for the purposes of this provision (as well as all other provisions of the regulation proposed today), any plan submitted by the permittee pursuant to a schedule of compliance and approved by the Director becomes an enforceable part of the schedule. Accordingly, modifications to such plans will be required to follow the appropriate procedures of § 270.41, 270.42, or 270.34(c). In addition, such plans are subject to enforcement under RCRA section 3008(a).

As indicated earlier in this discussion, the Agency believes that the proposed § 270.34(c) modification procedure will

be used in the case of disputes which may arise between the permittee and the Agency. In practice, the Agency presumes that the permittee and the Director will be able to resolve most issues that arise during the course of corrective action without resorting to the procedures of § 270.34(c). For example, disputes may arise over the scope of a remedial investigation and how many monitoring wells may need to be installed, or the appropriate soil sampling procedure. The permit modification proposed in § 270.34(c) might be used in this case, although generally such issues can be resolved informally by technical staff from both sides, or through the use of an alternate dispute resolution process (described in section VII of this preamble). However, in recognition that cases may arise in which no agreement is possible, the Agency is persuaded that it needs the regulatory authority to modify the permit, as necessary, to specify requirements the permittee must fulfill, and to offer both the public and the permittee an opportunity for formal comment on the proposed changes.

Where situations identified by the Director are determined by him/her to require immediate action to protect human health and the environment, there may be insufficient time to undertake a permit modification even under the relatively streamlined procedures proposed in § 270.34(c). In such cases, the Director may take action under the removal authority provided in CERCLA section 104 or require action under CERCLA section 106 or RCRA section 7003.

3. Conditions Applicable to All Permits (§ 270.30(l)(12)). Under §§ 270.30(l)(1)–(11) of 40 CFR part 270, subpart C, the Agency has promulgated regulations that specify reporting requirements applicable to all RCRA permittees. These permit conditions fall into two broad categories. The first category covers those situations in which a permittee must give notice to the Director of changes affecting the permit conditions (e.g., planned physical alterations or additions to a permitted facility). The second includes those reports typically required of all permittees (e.g., manifest discrepancy reports, biennial reports, etc.). Reporting requirements contained in § 270.30 may be incorporated into the permit either expressly or by reference.

Today, EPA is proposing to add a new reporting requirement under § 270.30(l) relevant to the submittal of information pertinent to subpart S corrective action requirements. Specifically, proposed § 270.30(l)(12)(i) would require the

permittee to submit information on any additional solid waste management unit(s) (SWMU) discovered at any time during the term of the permit within 30 days of the discovery of this unit. Further, it would require the permittee to submit information on newly discovered releases of hazardous wastes or hazardous constituents from previously identified or newly discovered SWMUs at the facility within 20 days of discovery of the release(s).

Currently, EPA or an authorized State identifies all SWMUs at RCRA facilities during the RCRA Facility Assessment (RFA) prior to permit issuance. In addition, § 270.14(d) requires the owner/operator to identify SWMUs as part of the facility's part B application. The Agency realizes, however, that additional SWMUs and releases may be discovered at any time following permit issuance. Therefore, today's proposal requires the facility owner/operator to provide new data relating to SWMUs and releases from SWMUs during the life of the permit.

Under § 270.30(l)(12)(i)(A), the permittee would be required to submit the following information on each newly identified SWMU within 30 days of identifying the SWMU: (1) Location; (2) type (e.g., landfill, storage tank); (3) general dimensions; (4) operating history; (5) specification of all hazardous and/or solid wastes that have been managed in the unit (if available); and (6) all available data pertaining to any release of hazardous waste (including hazardous constituents) to any media from the unit. The location of the unit may be indicated on the topographic map submitted by the facility on its part B permit application in accordance with § 270.14(b)(19) of 40 CFR, or may be submitted on a topographic map of comparable scale that clearly indicates the location of the unit in relation to other SWMUs at the facility. These data are the same as those now required in the part B application under 40 CFR 270.14(d). (See Second Codification Rule of December 1, 1987, 52 FR 45788.)

Based on the information supplied by the permittee under § 270.30(l)(12)(i)(A), EPA would require, as necessary (under proposed § 270.30(l)(12)(i)(B)) sampling and analysis data for the purpose of determining whether releases warranting further investigations have occurred. Further investigations or corrective measures as necessary would be imposed by amending the existing schedule of compliance or by initiating a permit modification as provided in § 270.34, depending upon the extent of the change needed to cover necessary corrective action.

Proposed § 270.30(l)(12)(i)(C) would require the permittee to identify newly discovered releases from newly discovered SWMUs or from SWMUs where no release had occurred at the time of permit issuance. Information submitted would include the following: (1) The type of unit and its location, clearly identified on a facility map; and (2) available data pertaining to the release, including potential exposure pathways, controls already imposed to address the release, and action planned for further cleanup. The permittee would be required to submit this information within 20 days of discovery.

EPA is persuaded that these requirements are necessary to ensure that both the statutory requirements of section 3004(u) and Congressional intent are satisfied. (See e.g., S. Rep. No. 96-284, 96th Cong. 1st Sess., 32 (1983).) The requirement for corrective action is a continuing one, applying not just to releases that have occurred prior to permit issuance, but also to any releases that occur after permit issuance. Without such requirements, the Agency might have to wait until the time of permit review or reissuance (in some cases as long as ten years) before newly discovered units or releases could be addressed in the permit. Including these requirements in today's proposal will allow the Director to learn of a release requiring remediation in a timely manner.

4. Information Repository (§ 270.36). Proposed § 270.36 would provide the Director authority to require in the permit that the permittee establish an information repository. The repository would allow interested parties access to reports, findings and other informative material relevant to ongoing corrective action activities at the facility. A repository would generally be required where the RCRA site is similar to sites listed on the NPL under CERCLA in terms of the magnitude of contamination and potential for exposure to hazardous wastes.

As provided by § 270.36(b), the information repository would contain all public information that the Director determines to be relevant to public understanding of corrective action activities at the facility (i.e., material determined to be confidential business information would not be included). For example, copies of RFI plans and reports and CMS plans and reports would generally be included in the repository. Background material that would also typically be maintained in the repository would include copies of relevant RCRA regulations and press releases.

The repository would be located at a local public library, town hall, public health office, EPA Regional or State office, or another public location within reasonable distance of the facility. In instances where this is not feasible due to the remote location of the facility, for example, the Director would require that the repository be established and maintained at the facility. Regardless of the location, however, interested persons must be allowed reasonable access to the repository. For example, it may be appropriate to require a facility to provide additional hours of access (e.g., beyond normal business hours), depending, among other things, on the degree of public interest in corrective action activities at the facility and the timing of public meetings or hearings. The Agency solicits comment on where and when the information repository should be required.

The Director would specify requirements that the permittee must satisfy in informing the public of the existence of the information repository in the permit schedule of compliance. (See proposed § 270.38(d).) At a minimum, the Director would require the facility owner/operator to notify individuals on the mailing list of the repository's establishment. S/he might also be required to provide public notice in a local newspaper. An EPA contact person to whom comments can be submitted will be identified.

The information repository proposed today is similar to the repository established at CERCLA sites. Experience under CERCLA has shown that the public is frequently concerned about nearby remedial activities and that this interest is effectively served by a repository. Without such a repository, the burden would be on citizens to locate and contact the appropriate officials knowledgeable about the site in Regional EPA or State offices.

There are two major differences between the information repositories in today's proposal and the repositories included in the CERCLA program. First, information repositories are required for all CERCLA sites whereas they will be required for RCRA sites only as determined to be appropriate by the Director. In making such a determination, the Director would consider the extent of contamination, the scope and complexity of the remedial action, and the degree of public interest. Second, designated information repositories under CERCLA generally house the administrative record for CERCLA actions. Under the RCRA permitting program, administrative records, which provide

documentation for the basis of EPA's decisions and other parts of the record, are maintained by EPA Regional offices (or authorized States) at the location of the Regional office. Because the RCRA record is kept elsewhere, where it is available for public inspection, the Agency does not believe it is necessary to duplicate the entire administrative record for RCRA sites at information repositories.

5. Major Permit Modifications (§ 270.41(a)(5)(ix)). Section 270.41(a)(5)(ix) of today's proposal would add a new provision to the major permit modification requirements allowing the Agency to reopen a permit for good cause to modify a permit for reasons arising from corrective action requirements under subpart S of 40 CFR part 264. The Agency would use this authority to modify permits after a remedy has been selected under proposed § 264.525, or to recommence corrective action after a no-action decision had been made under § 264.514. In addition, the Agency might use this authority to begin corrective action after notification of a new SWMU or a new release under § 270.30(1)(12). The Agency believes that it already has the authority to modify permits in this situation under § 270.41(a)(2), which allows it to modify permits when new information justifies the application of different permit conditions. However, the Agency is proposing to amend these regulations to clarify its authority.

Modifications under proposed § 270.41(a)(5)(ix) would undergo the full permit modification procedures of 40 CFR part 124—that is, there would be public notice, a 45-day comment period, and a public hearing, if requested. In addition, the modification could be appealed through EPA's administrative appeal procedures.

The introductory paragraph of § 270.41 has also been amended to make it clear that EPA-initiated modifications may be made pursuant to § 270.34(c), as well as § 270.41. This paragraph has been reprinted in full for purposes of clarity. EPA is seeking to change, and is seeking comments only, on those references to new § 270.34(c) and the balance of the paragraph.

6. Conforming Changes to Requirements for Permits-by-Rule (§ 270.60(b)(3); § 270.60(c)(3)(viii)). The subpart S regulations also apply to RCRA "permits-by-rule" for Class I hazardous waste injection wells, and publicly owned treatment works (POTWs) that receive hazardous waste by truck, rail or dedicated pipeline (see 40 CFR 270.60 and conforming changes in today's proposal). Today's proposal

provides conforming changes to § 270.60 to reflect the deletion of § 264.101 from the current subpart F requirements. The current "permit-by-rule" requirements for Class I hazardous waste injection wells (§ 270.60(b)(3)) and POTWs that have a National Pollutant Discharge Elimination System (NPDES) permit and that receive hazardous waste by truck, rail or dedicated pipeline (§ 270.60(c)(3)(vii)) stipulate that owners and operators of these facilities must comply with the § 264.101 requirements in order to obtain a RCRA "permit-by-rule". The references to § 264.101 in these two sections have been replaced with references to the requirements of today's proposed subpart S, reflecting that these facilities will be subject to all requirements in this new subpart. Further information on how EPA plans to implement corrective action at these types of permit-by-rule facilities can be found in the preamble to the December 1, 1987, Codification Rule (52 FR 45788) for underground injection control (UIC) wells and in "Guidance for Implementing RCRA Permit-by-Rule Requirements at POTWs," issued on July 21, 1987 (contact Permits Division, Office of Water Enforcement and Permits, at (202) 475-9545).

7. Alternative Dispute Resolution. During the process of investigating releases and studying remedies for RCRA facilities, EPA anticipates that some disagreements between the Agency and the owner/operator may arise regarding various technical or procedural issues. For example, in defining the technical scope of a work plan for remedial investigations, the Agency's technical judgment as to the numbers or placement of ground-water monitoring wells may differ from the permittee's.

In most cases, the Agency anticipates that such disagreements can and will be resolved through continuing communications between the owner/operator and the Agency. However, EPA recognizes that there will inevitably be some disagreements which cannot be resolved by such means. In these cases, there are several options the Agency may employ to resolve the dispute and prevent unacceptable delays in implementation of corrective action requirements. Such options include the use of a more formal type of dispute resolution process: enforcement action under RCRA section 3008(a); or a modification of the permit. The choice of options will depend on the specific issues under dispute and the circumstances at the facility. For situations where the requirements at issue are clearly defined in the permit

schedule of compliance, but where the permittee refuses, or otherwise demonstrates an unwillingness to comply with the requirements, EPA would intend to utilize enforcement options (e.g., section 3008(a)) to compel appropriate action by the permittee. Alternatively, a modification to the permit schedule of compliance (such as the process defined in today's proposed § 270.34(c)) may often be chosen as the appropriate mechanism for resolving disputes in situations where the requirement at issue is less specifically defined and when the Agency and the permittee are unable to negotiate an acceptable agreement.

The use of enforcement authorities for corrective action, and the permit modification process proposed today at § 270.34(c) are discussed elsewhere in today's preamble. The remainder of this discussion focuses, therefore, on the potential use of alternative dispute resolution techniques to resolve disagreements.

On August 14, 1987, EPA's "Final Guidance on Use of Alternative Dispute Resolution (ADR) Techniques in Enforcement Actions" discussing multiple ADR techniques was issued. In this guidance document, the Agency articulated its intention of encouraging the use of alternative dispute resolution techniques where there is reason to believe that one or more of the techniques discussed in the guidance may lead to expeditious final compliance agreements. The Agency believes that some of the techniques discussed in this guidance may be useful in resolving disputes which arise in the corrective action process under RCRA permits. A copy of this guidance is included in the docket established for today's rulemaking.

In particular, EPA is examining the use of a neutral, third-party mediator in the context of a time-limited, non-binding negotiation process to resolve corrective action disputes. The Agency is not prescribing the use of such a process as a provision of today's proposed regulation, however, or any other process. Given the Agency's limited experience with ADR to date it is premature to include any specific ADR technique within a RCRA regulatory framework. EPA intends to encourage, when appropriate, the use of ADR in certain situations as the RCRA corrective action program evolves. The Agency is specifically seeking comment today on several issues associated with alternative dispute resolution in the context of corrective action. These issues are: (1) For what types of corrective action issues and disputes

would ADR techniques be most useful? (2) What techniques (e.g., mediation, fact-finding, mini-trials) are most suitable for this purpose? and (3) Who should bear the cost (e.g., of third-party mediators) of alternative dispute resolution?

M. Conforming Changes to Closure Regulations (Section 264.113, 265.112 and 265.113)

1. *General.* As discussed further in section VII.C. of today's preamble, corrective actions undertaken at a facility may affect closure of regulated units under applicable standards of 40 CFR parts 264 and 265, subpart G. For example, closure requirements for regulated units contain certain deadlines that may be impractical if corrective action is required at the facility and the closing unit is being used to receive corrective action wastes. EPA today is proposing to amend the closure regulations in §§ 264.113, 265.112, and 265.113 to simplify extension of these deadlines when doing so would assist in implementing corrective action. The Agency is also proposing to expand part 265 closure plan information requirements to include information on SWMUs.

It is important to note that the part 264 and part 265 subpart G closure regulations apply only to hazardous waste management units. Today's proposed changes to closure regulations are designed to address potential effects of subpart S or F corrective action on the closure of such hazardous waste management units. Corrective action at SWMUs that are not used for the management of hazardous waste is not subject to subpart G regulations.

In addition, as discussed earlier in this preamble, § 264.551(a) provides the Regional Administrator with the authority to waive subpart G requirements (except for § 264.111) for units created for the purpose of managing corrective action waste.

The reader should note that the proposed changes are for both permitted hazardous waste units (part 264 standards) and interim status hazardous waste units (part 265 standards). Although today's rule primarily addresses corrective action at permitted facilities, interim status facilities which close without an operating permit are potentially subject to corrective action under orders issued pursuant to Section 3008(h) of RCRA, or they may wish to conduct corrective action voluntarily. Therefore, conforming changes are being proposed for both permitted and interim status units.

2. *Clarifications.* The following discussion clarifies several points

relating to corrective action and the closure of hazardous waste management units, and explains how existing regulations and authorities can be used to address potential conflicting interests.

a. Extension of Closure Deadlines—

(1) *Notification of Closure.* Under current regulations, when a unit ceases to receive hazardous waste, the owner/operator is generally required to notify the Agency and initiate closure of the unit (§ 264.112(d) or § 265.112(d)). In order to perform needed corrective action without posing unnecessary implementation problems, the Regional Administrator may find it necessary to require suspension of the acceptance of wastes at the unit temporarily. For example, it may be necessary to drain liquids from a surface impoundment to allow reinforcement or repair of a berm to prevent migration to a nearby surface water body. However, closure of the unit may not be desirable at that time since available capacity in the unit, once it is repaired, could be beneficially used for the disposal of wastes generated in the course of corrective action. The Agency believes that the current requirements at §§ 264.112(d) and 265.112(d) provide sufficient flexibility to accommodate temporary suspension of waste receipts to facilitate corrective action without triggering the notice and closure initiation requirements. These regulations allow the Regional Administrator to grant an extension to the deadline for beginning partial or final closure if the acceptance of waste is suspended only temporarily and additional hazardous waste capacity remains in the unit. Thus, the Director may allow an extension of time for the initiation of closure activities when capacity in the unit could be beneficial for disposal of corrective action wastes from other SWMUs at the facility.

(2) *Time Allowed for Closure.* For hazardous waste management units that will be required to close, but where corrective action is required prior to or in conjunction with closure, the owner/operator may find it difficult to comply with the timing requirements of § 264.113 or § 265.113. These provisions currently require that within 90 days after receiving the final volume of hazardous waste at a unit, the owner or operator must treat, remove, or dispose of the waste off-site, and that closure of the unit be completed within 180 days after receiving the final volume of hazardous waste. However, extensions to these deadlines may be necessary because corrective action may interfere with the owner or operator's ability to comply with the deadlines for completing closure. Sections 264.113 and

285.113 currently contain provisions for extending closure deadlines under certain circumstances. EPA believes that the need to take corrective action at the unit, or to receive wastes from other SWMUs, is already included within the existing criteria for granting these extensions. However, to clarify this point, EPA is proposing today to amend §§ 264.113 and 265.113 explicitly to include corrective action among the criteria for granting an extension to the deadline for completing closure activities.

b. Modification of Closure Plans. Corrective actions may bring about changes in unit and facility design and operation that will require a resulting modification to the closure plan and closure cost estimate for a hazardous waste management unit. For example, a unit may be expanded to accept waste generated during corrective action at other SWMUs as part of the remedy for a facility. Under § 264.112(c) and § 265.112(c), amendments to closure plans are required when changes in operating plans or facility design affect the closure plan. When interim measures or the final remedy selected affect the closure plan for a hazardous waste management unit, both the plan and the associated cost estimate must be amended according to requirements of subparts G and H. For permitted units, the closure plan and cost estimate amendments may be included in the permit modification for remedy selection or in a separate permit modification, but both must be submitted at least 60 days prior to the proposed change in facility design or operation. For interim status facilities, amendments to the closure plan also must be made at least 60 days prior to the proposed change in facility design brought about by the corrective action, or within thirty days if the change occurs during closure.

3. Closure Plan Information Requirements. The Agency is also proposing to add § 265.112(b)(8) in this rulemaking to require owners and operators to include information about SWMUs at interim status facilities when they submit an interim status closure plan. This addition is consistent with the second HSWA Codification Rule. This codification rule added § 270.14(d) to require owners and operators to submit information about all SWMUs at a facility as part of the Part B permit application (December 1, 1987, 52 FR 45788). Today's proposed change would address the need to coordinate corrective action and closure activities at closing interim status units and facilities. Since the facility owner/operator is not required to automatically

submit a part B application for a unit closing under interim status, the Agency will need a mechanism for obtaining information to assess the need for corrective action at the facility. Today's proposed addition to interim status closure plan information requirements is intended to provide that mechanism.

N. Conforming Change to Section 264.1(g)

As a conforming change, today's proposal includes an amendment to § 264.1(g) that specifies certain explicit exemptions from the requirements of part 264. However, certain units that are exempted under § 264.1(g) are, nevertheless, considered to be solid waste management units according to the definition proposed in § 264.501. Such units would include on-site accumulation tanks and container units, recycling units, totally enclosed treatment units, elementary neutralization units, wastewater treatment units, and transfer units. Thus, today's proposed amendment clarifies that subpart S requirements of part 264 would apply to these units, although the exemption would continue to apply to all other part 264 requirements.

VII. Relationship to Other Programs

A. Superfund

1. General. One of the Agency's primary objectives in development of the RCRA corrective action regulations is to achieve substantive consistency with the policies and procedures of the remedial action program under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. The fund, which may be used for certain cleanup actions under CERCLA, is called the Hazardous Substances Trust Fund, but is commonly known and referred to as Superfund. Sections 104 and 106 of CERCLA authorize EPA to take response actions, including removal or remedial measures, when a release or threat of a release of a hazardous substance which may threaten human health or the environment is discovered. Generally, these authorities are used in situations where contamination has occurred at sites that are not under the active control of a RCRA owner or operator. Where contamination is related to activities at hazardous waste management facilities that are currently operating or have conducted treatment, storage or disposal of hazardous waste at any time since November 19, 1980, both RCRA and CERCLA potentially apply.

Because the most comprehensive set of standards applicable to remediation of hazardous waste sites under the control of private owners and operators will, when promulgated, be the Section 3004(u) regulation, RCRA corrective action standards will be an important potentially applicable or relevant and appropriate requirement for the CERCLA program. As such, a primary goal in development of the RCRA regulations will be to establish a consistent approach between the RCRA and CERCLA programs. Consistency will help to ensure that the regulated industry can gain no advantage by proceeding under one program rather than the other, since the Agency anticipates that similar remedies would be selected under both.

The corrective action process under RCRA will parallel the process established for CERCLA remedial actions. This process includes preliminary assessments and site investigations to evaluate the need for remediation at specific sites, selection of remedies where needed to protect human health and the environment, remedial design and implementation of remedial action, and operation and maintenance to ensure continued effectiveness of the remedy. Procedurally, the activities under the two statutes may differ somewhat, since the permittee implements corrective action under RCRA, whereas the regulatory Agency, for the most part, does so under CERCLA. (In some cases CERCLA cleanups are conducted by responsible parties according to the terms of an order or consent decree and with Agency oversight.) Nonetheless, EPA anticipates that the two programs will arrive at similar solutions to similar environmental problems, and that actions undertaken by one program will be adopted by the other program in cases where the programmatic responsibility for a site shifts from one to the other. Specifically, the Agency anticipates that there may be a number of facilities at which substantial CERCLA remedial studies and/or actual remediation will have been already conducted at the time a RCRA permit is issued (thereby triggering the Subpart S corrective action requirements). This situation is likely to be most common at Federal facilities. In such cases, if the remedial work has been conducted according to the CERCLA NCP, EPA would consider that work to be consistent with the requirements of subpart S, and therefore additional or different studies or cleanup requirements would be unnecessary if, however, the remedial activities

conducted pursuant to the NCP at a RCRA facility addressed only a portion of the units or releases at the facility requiring remediation, the permit would address any such remaining corrective action requirements pursuant to subpart S.

2. Listing RCRA Sites on the National Priorities List (NPL). EPA is emphasizing coordinated implementation of the RCRA and CERCLA programs. Of particular importance is the Agency's policy for listing RCRA facilities on the National Priorities List (NPL). Section 105(a)(8)(B) of CERCLA requires EPA to establish the NPL list to set national priorities among sites with known or threatened releases where action under CERCLA may be warranted. A site must be listed on the NPL before a remedial action can be financed by the Hazardous Substances Trust Fund established under CERCLA.

The Agency's policy regarding the listing of RCRA facilities on the NPL was outlined in a November 23, 1985, Federal Register notice (50 FR 47912). The policy states that sites that can be addressed by RCRA subtitle C corrective action authorities generally will be deferred from placement unless they fall within certain exceptions. For a more detailed discussion of these exceptions, see 54 FR 41004-8 (October 4, 1989).

The proposed RCRA listing policy, however, does not apply to Federal facilities. These are listed on the NPL as required under CERCLA § 120, as amended under SARA (52 FR 17991, May 13, 1987).

3. Use of CERCLA to Supplement RCRA Authorities. EPA intends to clean up hazardous waste sites by selecting the most appropriate response and/or enforcement authorities from among all of those available. Accordingly, several CERCLA authorities may be used at RCRA facilities. For example, fund-financed removal actions under CERCLA section 104 can be taken at RCRA sites when necessary to respond promptly to a release. Although removals may be conducted whether or not the site is listed on the NPL, such actions must be undertaken in response to a release or substantial threat of a release and must be consistent with the criteria outlined in the National Contingency Plan and CERCLA. EPA may seek reimbursement of costs of these actions from generators, transporters, or owner/operators of treatment, storage, or disposal facilities pursuant to CERCLA section 107.

Where an "imminent and substantial endangerment" may be posed by a release at a RCRA facility, the Agency

may employ either a CERCLA section 106 or RCRA section 7003 order. As noted earlier, these authorities will be particularly useful in addressing contamination from SWMUs that requires prompt action.

The Agency may also use CERCLA or joint efforts with States in conjunction with RCRA to address situations of "area-wide" contamination. Preliminary investigations have shown that at some RCRA facilities substantial portions of on-site contamination is contributed by adjacent facilities not under RCRA jurisdiction. Corrective action at a single RCRA facility alone, therefore, might do little to restore overall environmental quality. In these cases, it may be appropriate to apply both RCRA and CERCLA authorities or other Agency authorities in a comprehensive program to address all sources of the release and provide complete remediation of the area. This would allow a comprehensive cleanup of an area (CERCLA trust funds would be used only where the site scored 28.5 or higher under the HRS) that has become contaminated as a result of activities at multiple facilities, including both operating and abandoned facilities.

In situations where CERCLA section 104 or section 106 remedial activities have been initiated, and where a RCRA permit is to be issued to the facility, the Agency may choose to continue these remedial actions under CERCLA authority. In such cases, the CERCLA cleanup would be referenced in the RCRA permit, and the Agency would take steps to ensure that further cleanup under RCRA section 3004(u) would not be required at the affected portion of the facility. At the same time, RCRA may be used to address other cleanup needs at the facility that are not addressed by the CERCLA action underway. Alternatively, the cleanup may be shifted to RCRA and the selected remedy incorporated into the permit through a permit modification.

B. PCB Spill Policy Under TSCA

EPA regulations under the Toxic Substances Control Act (TSCA) controlling the disposal of PCBs, published in the Federal Register of February 17, 1978 (43 FR 7150) and May 31, 1979 (44 FR 31574), define the term disposal to encompass accidental as well as intentional releases to the environment. When PCBs in concentrations of 50 parts per million (ppm) or greater are improperly disposed (or when material at less than 50 ppm got that way through dilution), EPA has the authority under section 17 of TSCA to compel persons to take actions to rectify damage or clean up

contamination resulting from the spill. Before May 4, 1987, standards for the cleanup of spilled PCBs were set by EPA Regions on a case-by-case basis.

However, EPA believed that uniform, predictable, nationwide requirements for the majority of spills would reduce risks to PCB spill sites by encouraging rapid and effective cleanup and restoration of the sites; accordingly, EPA established a nationwide policy for PCB spill cleanup. On April 2, 1987, EPA published the TSCA policy for the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. (See 52 FR 10688.)

The policy requires cleanup of PCBs to different levels depending on spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of the PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. The policy imposes the most stringent requirements on areas where there is the greatest potential of direct human exposures, and less stringent requirements where there is little potential for any direct human exposure.

While the policy is expected to apply to the majority of spill situations, the policy does provide for exceptional situations that may require additional cleanup or less cleanup at the direction of the EPA Regional offices. Further, some spills are outside the scope of the policy. Such spills include: Spills directly into surface water, drinking water, sewers, grazing lands, and vegetable gardens. Final cleanup standards for these types of spills are established by the EPA Regional offices on a site-specific basis.

RCRA corrective action authority under section 3004(u) applies to PCBs because PCBs are listed as an Appendix VIII constituent in 40 CFR part 261. PCB releases from solid waste management units at permitted RCRA facilities are addressed in accordance with TSCA PCB spill cleanup policy. These solid waste management units would often technically be considered "old spills" under the spill policy. It is the Agency's belief that the cleanup levels and practices discussed in the policy will be appropriate in many situations, and that when necessary, site-by-site evaluations should still be required.

C. Other Elements of RCRA Subtitle C Program

1. Relationship to Subpart F Ground-Water Corrective Action. Existing RCRA regulations for ground-water corrective action (40 CFR Part 264, subpart F) prescribe a specific approach

for detection, characterization, and cleanup of contaminated ground water from regulated land disposal units which received waste after July 26, 1982. Subpart F is a "prospective" program requiring that monitoring be established to detect contamination, and that if detected, contaminated ground water be removed or treated in place if or when a ground-water protection standard has been exceeded. There is additional discussion of current Subpart F corrective action in section IV of today's preamble.

Achieving a coordinated, facility-wide approach to cleanup of releases from both regulated units and other solid waste management units is a basic objective of the Agency. However, the universe of units and contamination being addressed by subpart S corrective action regulation is somewhat broader in scope.

To ensure consistency in implementing corrective action at both regulated units (a subset of SWMUs) and other solid waste management units, and to achieve environmental results as rapidly and effectively as possible, the Agency is developing a proposal that would restructure the current subpart F regulations to make them consistent with the key features of subpart S. These proposed revisions to subpart F are expected to be issued relatively soon. It is expected that these revisions will reference a number of specific sections of today's subpart S proposed regulations; likewise, for the sake of clarity and consistency, the final subpart S rule may also contain cross-references (that do not appear in today's proposal) to certain subpart F provisions.

2. Land Disposal Restrictions Program. As enacted on November 8, 1984, the Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) impose restrictions on the land disposal of hazardous wastes. In HSWA, Congress specified dates when particular groups of hazardous wastes not meeting treatment standards are prohibited from land disposal unless it can be demonstrated that "no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous" will occur (RCRA section 3004(d)(1), (e)(1), and (g)(5)). The dates specified by Congress for triggering the land disposal restrictions are listed below:

- Solvents and dioxins by November 8, 1986;
- California list wastes by July 8, 1987; and

- Scheduled wastes by August 8, 1988 (First Third), June 8, 1989 (Second Third), and May 8, 1990 (Third Third).

Note: A separate schedule was established for hazardous wastes disposed of by deep well underground injection.

HSWA required the Agency to set "levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized" (RCRA section 3004(m)(1)). To date, EPA has developed treatment standards based on the performance of best demonstrated available technologies (BDAT) in a series of five rulemakings. After the appropriate effective date, wastes for which treatment standards have been promulgated must meet those standards before the wastes may be land disposed.

Where adequate treatment capacity was not immediately available on the statutory effective date, the Agency granted a national capacity variance. This established an alternative prohibition effective date for the waste of up to two years. During a variance, wastes not treated in compliance with applicable treatment standards may be disposed of in surface impoundments or landfills only if they meet the minimum technological requirements (RCRA section 3004(o)). Furthermore, wastes granted this variance must be in compliance with the California list prohibitions if they are applicable, and are subject to the paperwork requirements of 40 CFR 268.7.

The rules promulgated to date are summarized below:

- *Solvents and Dioxins.* On November 7, 1986, regulations were promulgated establishing the implementation framework of the LDR program (51 FR 40572). In this rulemaking, EPA promulgated treatment standards and effective dates for spent solvents and dioxin-containing hazardous wastes identified as EPA Hazardous Waste numbers F001-F005, F021-F023, and F026-F028 (40 CFR 268.30 and 268.31).

- *California List Wastes.* On July 8, 1987, regulations were promulgated restricting land disposal of the California list hazardous wastes (52 FR 25780). Treatment standards were established for liquid and nonliquid hazardous waste containing halogenated organic compounds (HOCs), and for liquid hazardous wastes containing polychlorinated biphenyls (PCBs). The statutory prohibitions on land disposal of corrosive wastes and liquid wastes containing certain metals were codified and became effective immediately.

- *The Scheduled Wastes.* On August 8, 1988, the Agency promulgated regulations for certain scheduled wastes (40 CFR 268.10), referred to as First Third wastes. Treatment

standards were established for most of the wastes identified by EPA Hazardous Waste numbers "F" and "K." Wastes scheduled in the First Third for which treatment standards were not set were subject to the "soft hammer" provisions of § 268.8. On June 8, 1989, the Agency promulgated regulations for the Second Third of the scheduled wastes (40 CFR 268.11). In the Second Third final rule, the Agency also set standards for certain First Third soft hammer wastes, Third Third wastes, and newly listed wastes. This rule also set effective dates for underground injected wastes. On May 8, 1990, the Agency promulgated treatment standards and effective dates for the remaining soft hammer wastes, wastes listed in the Third Third of the scheduled wastes (40 CFR 268.12), wastes that were rescheduled to the Third Third, and five newly listed wastes.

Separate rulemakings for the underground injection control (UIC) program established hazardous waste disposal injection restrictions and requirements and set effective dates for underground injected solvents, dioxins, California list wastes, and First Third scheduled wastes (40 CFR parts 124, 144, 146, and 148).

Corrective action taken under today's rule must comply with the land disposal restriction requirements of 40 CFR part 268. The prohibitions do not apply to hazardous wastes placed into land disposal prior to the effective date of an applicable land disposal restriction, if such wastes do not have to be removed or exhumed for treatment. Furthermore, as explained in the preamble to the NCP revisions (published on March 8, 1990), the Agency has determined that placement, and thus land disposal, of hazardous wastes does not occur when waste is moved or treated in-situ within a unit. This is particularly important for RCRA corrective action since many remedial actions are likely to involve treatment, consolidation, and capping of wastes within existing units. Wastes moved or treated within such units would not be subject to the land disposal restrictions. Placement does occur, and the land disposal restrictions apply, when waste is removed from the unit for treatment or other purposes and the waste or residuals are returned to the unit, or to a different unit.

3. Relationship to section 3004(n) Standards. RCRA section 3004(n) requires the Agency to promulgate standards for the control and monitoring of air emissions from hazardous waste management units subject to permitting standards other than subpart S at treatment, storage, and disposal facilities (TSDFs). The goal of these standards is to protect human health and the environment as necessary from air emissions associated with

management of hazardous wastes. Currently, the Agency is developing standards under section 3004(n) that will apply to certain hazardous waste management units covered by today's proposal under section 3004(u). Section 3004(n) standards for air emissions associated with equipment leaks and certain process vents at TSDFs were proposed in February 5, 1987 (52 FR 3748) and are expected to be finalized in June, 1990; standards for volatile organic emissions from certain other TSDF emission sources will be proposed at a later date.

The standards being developed under section 3004(n) will require engineering controls at units that manage hazardous waste. Air emissions will be controlled through, among other things, some combination of covers and add-on control technologies which capture the air emissions for recovery or destruction.

Although standards developed under section 3004(n) will only address air emissions from hazardous waste management units at TSDFs (a subset of all SWMUs), they are expected to provide valuable guidance for addressing air emissions from other SWMUs used for management of non-hazardous solid waste. In addition to the standards being developed under section 3004(n) of RCRA, the Agency is examining technical approaches and policy options for regulating, under the Clean Air Act, air emissions from SWMUs in which non-hazardous solid wastes are managed.

The Agency is today proposing a specific approach to imposing corrective action requirements on certain air releases from SWMUs in today's proposal. The proposed approach is designed to be flexible enough to be used in conjunction with the section 3004(n) standards being developed. When the section 3004(u) standards are developed, EPA will make any adjustments to the subpart S standards necessary to ensure a consistent and complementary approach.

4. Administrative Orders Under RCRA section 3008(h). The section 3008(h) authority for interim status corrective action orders provides a sister authority to section 3004(u) for requiring corrective action at non-permitted RCRA facilities.

Corrective action may be required under section 3008(h) whether the facility is operating (prior to receiving a permit) under interim status, is closing or is closed under interim status, has lost interim status, or failed to properly obtain interim status. Corrective action orders under section 3008(h) may be issued unilaterally by the Agency or

they may be issued as consent agreements between the owner/operator and the Agency.

In many cases, the entire corrective action process for a facility will be implemented under a section 3008(h) order. However, in some cases a facility that has been issued a section 3008(h) order will be issued a permit prior to completion of the activities specified in the order. In such cases, the Agency may require the owner/operator to continue all or some of the activities under the order, or may incorporate the requirements of the order into the RCRA permit.

In any case, EPA intends that equivalent environmental results will be achieved whether corrective action requirements are imposed in an order under section 3008(h) or a permit. Accordingly, EPA expects that orders issued under section 3008(h) generally should follow the substantive requirements of today's proposal (e.g., remedy selection factors to be considered), as well as procedural elements (e.g., triggers for moving from one phase of corrective action to the next). There will, however, be some procedural differences between orders and permits in implementing corrective action. On April 13, 1988, EPA promulgated rules for administrative procedures for issuing orders under section 3008(h). (See 53 FR 12256.)

The section 3008(h) enforcement authority will not be delegated to States. States which desire enforcement authorities equivalent to section 3008(h) and do not already have such authorities in existing legislation will need to enact parallel statutory enforcement authorities. While procedural aspects of issuance of section 3008(h) orders do not duplicate the procedural aspects of today's proposed rule for corrective action under permits, the procedures for both are designed to ensure equivalent results and to provide adequate participation in the process for all interested parties.

5. Financial Assurance for Corrective Action. As discussed in section IV of this preamble, EPA proposed financial assurance requirements for corrective action (FACA) on October 24, 1986 (51 FR 37854). The fourteen commenters on the FACA proposal generally supported the flexibility of the Agency's approach. The procedures presented in FACA and today's regulatory changes to these procedures are summarized below.

a. Timing. In today's rule, EPA is proposing specific language that will clarify when financial assurance for corrective action must be demonstrated. Section 284.526(c) requires that, after

selection of the remedy, the Director shall modify the facility permit and schedule of compliance to require a demonstration of financial assurance within 120 days of the effective date of the permit modification. This requirement, which is a clarification of the requirement proposed in the 1986 FACA proposal, is discussed further in sections VI.F and VI.G of today's preamble.

In addition to this approach, EPA requested comment in the FACA proposal on a second, more complicated, approach. In this approach, the facility would be required to demonstrate financial assurance once corrective action is determined to be necessary, but before the corrective action measures and cost estimate are specified in the permit. Adjustments to the amount of financial assurance would be required after specification of the corrective measures and cost estimate in the permit.

Most commenters on the FACA proposal supported the proposed approach. However, some commenters argued that financial responsibility demonstrations should be made not at the time the cost estimate is completed, but rather prior to permitting. The Agency disagrees, since unnecessarily early demonstration of financial assurance may increase the number of bankruptcies, increase the amount of unfunded corrective actions, and thus result in less environmental protection.

b. Cost Estimation. The 1986 FACA proposal required facility owners or operators to submit a cost estimate for corrective action, consisting of two parts: (1) A year-by-year current cost estimate of required corrective action in undiscounted current dollars; and (2) the sum of these year-by-year estimates of corrective action costs. The Agency proposed that third-party costs, rather than first-party costs, be used to estimate yearly and total corrective action costs (i.e., costs of contractor labor rather than the owner's or operator's own labor). The corrective action cost estimate must be revised if changes in corrective measures alter the cost or expected duration of corrective action. The proposal also would require the owner or operator to adjust the cost estimate annually to account for inflation, using either recalculations in current dollars or an inflation factor derived from the most recent annual Implicit Price Deflator for the Gross National Product published by the Department of Commerce.

In addition to the annual inflation adjustment required under the FACA proposal, EPA is today proposing in

§ 264.527(c) to require that cost estimates be revised, if necessary, upon approval of the remedy design. The financial assurance mechanisms must be adjusted to reflect any changes in the cost estimate. This requirement is discussed further in section VI.H of today's preamble.

c. *Allowable Mechanisms.* Under the October 24, 1988, FACA proposal, owners or operators who are responsible for performing corrective action would be required to demonstrate financial assurance through one or more of the following mechanisms: trust fund, surety bond guaranteeing performance, letter of credit, financial test, or corporate guarantee. A letter of credit and a trust fund may be combined to demonstrate financial responsibility and a single mechanism may be used to demonstrate financial responsibility for multiple facilities. The rationale for authorizing the use of these mechanisms and for the regulatory framework for financial assurance for corrective action is similar to that for the financial assurance requirements for closure and post-closure care under part 264, subpart H (47 FR 15032, April 7, 1982). The key differences between the FACA proposal and Subpart H are that insurance and surety bonds guaranteeing payment into a standby trust fund were not deemed appropriate mechanisms for corrective action situations and are not allowed. Additionally, the proposed fund includes a pay-in period and pay-in formula which accounts for the costs of corrective action (see 51 FR 37854 *et seq.*).

Commenters on the FACA proposal generally supported the range of allowable mechanisms, but offered specific suggestions for altering the requirements of particular mechanisms (e.g., shorten the pay-in period for the trust fund). The Agency will address the commenters suggestions when the final FACA requirements are promulgated. In the interim, EPA intends to rely on the FACA proposal as a guide. The Agency expects that in most cases financial assurance will be demonstrated by use of instruments that are consistent with the proposed regulatory language of FACA. However, other instruments may be permissible if the owner or operator demonstrates, to the satisfaction of the Agency, that such instruments provide an acceptable level of financial assurance.

The fundamental criteria the Agency will use in evaluating the acceptability of other instruments are: (1) the certainty of the availability of funds, and (2) the amount of funds assured. The certainty of the availability of funds

from alternate mechanisms should be equivalent to the certainty provided by existing financial assurance mechanisms under 40 CFR part 264, subparts G and H. For example, the alternative mechanisms should provide that the Regional Administrator or State Director has the sole authority to direct the payment or use of funds or must provide for prompt notification of intent to cancel the mechanism. To be deemed equivalent in terms of the amount of funds, the alternative mechanisms should meet several criteria, such as providing that the funds cannot be used for other purposes, and providing that the amount of funds are equal to the current cost estimate.

D. RCRA Subtitle D: Solid Waste Disposal

Today's proposal is for corrective action at facilities subject to RCRA permits issued under the authority of section 3005 of RCRA (*i.e.*, those which treat, store, or dispose of hazardous waste as defined under RCRA). The disposal of non-hazardous solid waste falls under the authority of subtitle D of RCRA. EPA has two major roles under subtitle D. The first is to establish minimum national performance standards (under the authority of section 4004) for the protection of human health and the environment from solid waste disposal facilities. The second is to help the States make appropriate solid waste management decisions by offering up-to-date technical assistance.

Some of the subtitle D standards for protection of human health and the environment from solid waste disposal facilities could apply or be relevant to subtitle C facilities. For example, §§ 257.3-257.8 provides safety limits for the concentration of explosive gases generated by a facility (defined under § 257.2 as any land and appurtenances thereto used for the disposal of solid wastes). It may be appropriate to apply this requirement to subtitle C facilities with solid waste management units that could generate methane (e.g., landfills used for disposal of municipal-type wastes). Thus, the Agency could require compliance with the part 257 requirements for explosive gases if such situations were encountered at a subtitle C facility undergoing corrective action according to subpart S.

Passage of HSWA added section 4010(c) to subtitle D. Section 4010(c) required EPA to revise criteria promulgated under section 4004(a) for facilities that may receive household hazardous wastes or small quantity generator hazardous wastes. The statute indicated that these criteria must include, at a minimum, ground-water

monitoring necessary to detect contamination, location standards, and corrective action, as appropriate. The statute also indicated that the criteria should take into account the practicable capability of such facilities.

On August 30, 1988, EPA proposed these revised criteria for municipal solid waste landfills (see 53 FR 33313). The criteria for subtitle D municipal solid waste landfills most relevant to today's proposal are the criteria proposed for ground-water monitoring and corrective action under subpart G of 40 CFR part 258.

The part 258 subpart G proposal would require the owner/operator of a municipal solid waste landfill to establish a two-phase ground-water monitoring program. If parameters established for Phase I monitoring are detected at a statistically significant level above background, the owner/operator must initiate a phase II monitoring program which includes an initial test for all constituents listed in appendix IX of 40 CFR part 264. If the concentration of any appendix IX constituent exceeds the established trigger level, as discussed below, then the owner/operator must initiate an assessment of the nature and extent of the contamination.

Like the subpart F program under subtitle C, the corrective action program proposed in 40 CFR part 258, subpart G, for municipal solid waste landfills would be limited to releases to ground water. The corrective action program, as described in subpart G, would have to be designed to delineate the areal extent of the plume of contamination and to clean up to maximum allowable constituent concentrations throughout the plume. Ground-water protection standards would be set using the same health and environmental based criteria as those employed in today's proposal for subtitle C corrective action for solid waste management units. The requirements for ground-water cleanup in the corrective action program described in the revised subtitle D criteria are thus very similar to those described in today's subtitle C corrective action proposal. The subtitle D revised criteria will not, however, address procedural requirements; procedures for implementing the criteria will be established by the States.

E. RCRA Subtitle I: Underground Storage Tanks

Section 9003 of subtitle I of the Resource Conservation and Recovery Act (RCRA) directs EPA to promulgate regulations applicable to owners and operators of underground storage tank

(UST) systems to protect human health and the environment. Section 9003(c) specifically requires EPA to promulgate regulations applicable to owner/operators of UST systems which require corrective action in response to releases from USTs and, further, requires the owner/operator to report the actions taken.

Section 9003(h) was added to RCRA by section 205 of the Superfund Amendments and Reauthorization Act (SARA) of 1986, which established a Leaking Underground Storage Tank trust fund that can be used by EPA to clean up releases of petroleum from UST systems. Alternatively, EPA can order UST owners and operators to undertake such cleanup. Under the corrective action requirements of section 9003(c), all petroleum UST cleanups will have to be conducted in accordance with the requirements in the regulations. The approach to UST corrective action adopts the same basic steps as the NCP requirements for CERCLA actions and those contained within today's proposed RCRA section 3004 regulation: control the release source, determine the extent of the contamination, determine the extent of the remediation required, and take the necessary cleanup actions. Specific differences in the programs reflect the different scope and nature of implementation under the different programs.

EPA issued final technical standards governing petroleum and CERCLA hazardous substance UST systems on September 23, 1988 (— FR —). Approximately two million USTs will be affected by the regulations, and a wide variety of release situations and hydrogeologic settings are expected. These standards would require owners and operators of leaking UST systems to take certain actions upon confirmation of a release. Owners and operators must report confirmed releases to the appropriate regulatory authority and begin immediate cleanup steps. Immediate measures required under the proposed standards include mitigation of safety and fire hazards; initiation of free product recovery, if applicable; and assembling of information on the nature and quantity of the release and site characteristics. The owner/operator must submit, to the implementing agency, reports describing these immediate steps, as well as the design and implementation of free product recovery systems. A corrective action plan would be required for longer-term cleanups addressing soil and ground-water contamination. Cleanup levels would be established on a site-by-site basis as approved by the implementing

agency (typically the State) that would oversee the cleanup by the owner or operator.

The first stage of the UST corrective action process requires immediate steps to abate imminent safety and health hazards whenever a release from a petroleum UST is confirmed. The owners and operators must investigate the presence of free product and, if present, begin free product recovery. The owner/operator must also submit information characterizing the site and the nature of the release. If, after reviewing this preliminary information, the implementing agency determines that the product may have reached ground water or that contaminated soil is in contact with ground water, the owner/operator must characterize the extent and location of soil and ground-water contamination. The implementing agency will use this information as the basis for determining, through a site-specific risk assessment, whether the owners and operators will be required to undertake a longer-term correction action.

This second stage of the corrective action process addresses soil and ground-water cleanup. The site-specific analysis is the basis for prescribing the extent and timing of cleanup that would be required for longer-term corrective action. The assessment would be based on analysis of site-specific conditions and problems posed by the release. Factors to be considered include: the quantity of material released; the mobility, persistence, and toxicity of the material; the exposure pathways; its relationship to present and potential ground-water well locations and uses; and any relevant standards. Technology-based cleanup requirements would also be possible under this approach if: (1) The cleanup level set during the UST corrective action process is found to be unattainable with current technology; (2) It is shown that the remaining contamination does not pose a substantial present or potential hazard to human health and the environment; and (3) monitoring procedures are instituted to ensure that the conditions remain stable or improve.

EPA's approach to corrective action at underground storage tanks is largely shaped by the enormous size of the regulated universe. These factors, as well as the absence of permitting requirements for USTs, explain the procedural differences between corrective action for USTs and today's proposal.

EPA estimates that there are approximately two million petroleum USTs at about 700,000 facilities as well

as 50,000 hazardous substance USTs at 30,000 facilities potentially subject to subtitle I. Because of the size of this universe, EPA believes that the program is best implemented at the State and local level, and that it should be, to the extent possible, self-implementing. Thus, the UST rule would require that certain automatic actions be taken at the determination of a release: mitigation of fire and safety hazards, recovery of free product, and repair of the leak or removal of the tank. These are all straightforward actions particularly relevant to the UST universe and are amenable to self-implementing standards. At RCRA permitted facilities, contingency plans and tank standards would require comparable action for hazardous waste units. However, the Agency did not adopt comparable self-implementing provisions—beyond the regular facility subtitle C standards—in today's rule because of the much wider variety of units that would be subject to subtitle C corrective action and the close Federal or State oversight afforded by the permit process.

The UST rule would also require long-term remedial action for ground-water and soil contamination, based upon a site-specific assessment, after immediate action had been taken. Because of the large size of the regulated universe, the absence of a national permitting system under which to carry out cleanup, and the necessity of local implementation, EPA believes a procedurally less prescriptive approach to selecting cleanup strategies and cleanup levels is necessary for USTs.

Some USTs are potentially subject to corrective action requirements under both subtitle I and today's rule. Specifically, releases from an UST containing solid wastes at a RCRA permitted facility may be subject to corrective action requirements under both programs. In order to avoid confusion and because USTs located at RCRA facilities will be subject to the oversight provided by a site-specific permitting process, today's regulations, when promulgated, will be the applicable corrective action requirements for USTs subject to section 3004(u). The final UST rules also clarify the applicability of the subtitle I corrective action requirements to USTs located at RCRA permitted facilities by excluding them from coverage under subtitle I.

F. Federal Facilities

Many Federal agencies have facilities which require RCRA permits. Some of these agencies have developed remedial programs which apply at their facilities

in addition to EPA programs under the RCRA and CERCLA statutes. Regardless of any self-imposed remedial programs, federally-owned or operated facilities must comply with all RCRA and CERCLA requirements (with certain limited exceptions) in the same manner and to the same extent as most non-governmental entities. The objective of the RCRA corrective action program at Federal facilities, as at all RCRA facilities, is to ensure protection of human health and the environment.

Section 6001 of RCRA requires any agency of the Federal Government engaged in the management or disposal of hazardous waste to comply with both substantive and procedural requirements under RCRA as well as with any other applicable requirements for the management of hazardous waste, including Federal, State, interstate and local requirements. CERCLA section 120(a) makes Federal facilities subject to CERCLA in the same manner and to the same extent as private facilities. Section 120(i) also makes it clear that the special provisions for Federal facilities in Section 120 do not impair any obligations they have to comply with RCRA requirements, including corrective action. In accordance with section 120 (c) and (d), EPA has established a comprehensive Federal agency hazardous waste compliance docket and will list Federal facilities on the CERCLA National Priorities List (NPL) if they meet the NPL listing criteria.

Many Federal facilities at which hazardous wastes are managed will be subject to both CERCLA remedial action and RCRA corrective action authorities. In many such cases, EPA intends to coordinate the application of RCRA and CERCLA authorities through the use of interagency agreements (IAGs), as provided under the authority of section 120(e) of CERCLA. The IAG will provide the vehicle for explicitly defining the procedural and technical requirements for corrective action, in satisfaction of the statutory and regulatory authorities of both RCRA and CERCLA.

While it is the responsibility of Federal facilities to comply with the requirements of both the RCRA and CERCLA programs, the Agency plans to continue its efforts to coordinate the activities required under both programs with those under already-established Federal facility remedial programs. For example, the Department of Defense (DOD) has developed the Installation Restoration Program (IRP) to identify and cleanup contamination resulting from past waste management practices at DOD facilities. IRP conducted

activities will often serve to satisfy RCRA and CERCLA requirements. Furthermore, the Agency is aware that in some cases an Environmental Impact Study (EIS) will be conducted at a Federal facility during the same time frame as the RCRA Corrective Action investigations and studies are undertaken. To the extent that the information generated by the EIS is deemed relevant by EPA to the needs of Corrective Action, EPA would not intend to require duplicative information to be generated to satisfy corrective action requirements. In fact, it may be possible in some cases to merge the two studies into one integrated document. EPA intends, however, to oversee and, if necessary, direct the scope and substance of investigations and cleanup activities at DOD and other Federal facilities. In addition, EPA anticipates that many States will exercise oversight authority under State laws to review and participate in corrective action decisions at Federal facilities.

VIII. Public Involvement

Effective public involvement efforts within the corrective action program will enable the interested public to receive accurate and timely information about remedial plans and progress and to comment on proposed actions at significant decision points. The statutory public involvement requirements for permitting contained in RCRA section 7004 are elaborated in regulatory requirements at 40 CFR parts 124 and 270. Today's proposal includes additional requirements intended to promote active and effective communication between the interested public, the regulatory agency responsible for implementation of the corrective action program, and the permittee.

The first required public involvement occurs before a draft RCRA permit is developed. At the time the permit application is submitted, a mailing list must be assembled by EPA or the State for the community in which the facility is located. (See 40 CFR 124.10(c)(1)(viii).) The list serves as an important communications tool to allow the regulatory agency to reach interested members of the public with announcements of meetings, hearings, events, and available reports and documents. Guidance on developing a comprehensive mailing list is available in the January 1986 Guidance on Public Involvement in the RCRA Permitting Program.

After developing a draft permit, the regulatory agency is required to provide public notice that a draft permit has been prepared and is available for

public review. (See 40 CFR 124.6.) The notice must be published in a major newspaper and broadcast over local radio stations. A 45-day public comment period on the draft permit must follow the public notice. If a written request is received, EPA or the State is required to hold an informal public hearing. A 30-day advance notice containing the time and place of the hearing is required. In addition, a fact sheet is developed to accompany every draft permit. It includes the significant factual and legal bases used in preparing the draft permit. The comment period for the draft permit will provide the public an opportunity to comment on corrective action conditions contained in the permit. In most cases, requirements for the RCRA Facility Investigation (where necessary) will be included in the schedule of compliance in the draft permit.

When a final decision is reached on whether to issue or deny a permit, EPA regulations require that a notice of the decision be sent to each person who submitted written comments on the draft decision or who requested such a notice. In addition, a response to all significant comments must be issued by the Agency or the State. The response to comments must include a summary of substantive comments received and an explanation of either how they were incorporated or addressed in the final permit condition or why they were rejected.

In addition to the established public involvement activities required during the permitting process, today's regulation proposes in § 270.38 to provide the Director with the authority to require an additional effort to keep the interested public informed of activities at the site. Proposed § 270.38 would allow the Director to require the establishment of an information repository that would house documents pertinent to the corrective action activities near the facility. The details of the proposed repository are discussed in section VII.L of today's preamble. In addition, today's proposal would require the permittee to mail a summary of the final report of the RCRA Facility Investigation to all individuals on the facility's mailing list to keep interested persons informed of findings at the site.

Today's proposal would also require a major permit modification to incorporate remedy selection. The modification would provide an additional opportunity for public involvement. This modification would follow established public participation procedures under part 124 for major modifications. In addition, today's proposal provides that additional permit modifications initiated by the Agency or the permittee will be

classified on the basis of their potential effect on the permittee, the affected public, and the environmental impact of proposed changes. Those that are classified as major modifications will follow the existing procedures for major modifications as described above. Those that have less significant impacts will follow the procedures described under today's proposed § 270.34(c) or those issued on September 28, 1988 (53 FR 37912) for owner/operator initiated modifications. In all cases there will be an opportunity for public review and comment. Section VI.L of today's preamble discusses the classification of permit modifications for corrective action and their related procedural requirements more fully.

There may be some actions taken during the course of a permit that are not reflected in the initial permit and are not the subject of a permit modification. For example, many of the detailed activities taken by the permittee in implementing the RFI or in designing the CMS plan may not be specified in the initial permit. In some cases, EPA and the permittee may reach a mutual agreement about the exact nature of the required activities (within the general scope of the permit), and the specifics of these activities may not be reflected in a permit modification. In such cases, the specific activities agreed to will be documented on the permit record and the public will have an opportunity to comment on them when the permit is modified at the time of remedy selection. This approach would be limited to activities that would not constitute a major change that might otherwise warrant application of the public participation requirements specified in § 7004 of RCRA.

EPA believes that the approach outlined above provides an appropriate balance between the need to involve the public in the remedial process and the need to proceed expeditiously to remedy releases to the environment. The public will have a full opportunity to comment on all remedial activities undertaken during the term of the permit, and not otherwise subject to public scrutiny, at the time of remedy selection. To the extent that public comment takes legitimate issue with such activities, EPA may need to revisit some of these activities or modify its decision regarding the remedy. Accordingly, EPA will be very sensitive to possible public reaction in specifying activities to be undertaken during the course of the permit without public involvement.

Public involvement activities required in the permitting process and proposed today for the corrective action program

are similar, though not identical, to those established under the Superfund Community Relations Program. Activities proposed today are in addition to public involvement activities conducted at RCRA facilities targeted by the Agency for expanded public involvement because of the high potential for exposure to the population or because of a high level of interest in the community. Public involvement efforts at RCRA sites listed on the National Priorities List and/or facilities which will accept Superfund wastes should be integrated with concurrent Superfund community relations efforts to the extent possible.

EPA and State offices, as a matter of policy, jointly issue permits. Where States are authorized to implement only some portions of the hazardous waste program, the State and EPA may also conduct public involvement activities jointly.

IX. State Authorization

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3008, 7003 and 3013 of RCRA, although authorized States have primary enforcement responsibility under section 7002.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program entirely in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in the State which the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under section 3006(g)(1) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out those requirements and prohibitions in authorized States, including the issuance of permits, until

the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, the HSWA requirements apply in authorized States in the interim.

B. Effect on State Authorizations

1. *Schedule and Requirements for Authorization.* Today's rule is proposed pursuant to section 3004(u), section 3004(v), and section 3005(c)(3) of RCRA, provisions added by HSWA. Therefore, the Agency is proposing to add the requirements to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of authorization status. States may apply for either interim or final authorization for the HSWA provisions identified in Table 1, as discussed in this section of the preamble.

EPA will implement today's rule in authorized States until (1) they modify their programs to adopt these rules and received final authorization for the modification or (2) they receive interim authorization as described below. Because this rule is proposed pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under section 3006(g)(2) or section 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire automatically on January 1, 1993 (see 40 CFR 271.24(c)); EPA invites comment on whether this deadline should be extended for cause.

EPA invites comment on an expedited process for granting interim authorization for today's rule, pursuant to RCRA section 3006(g)(2), to States already authorized for HSWA corrective action pursuant to the initial codification of section 3004(u) at 40 CFR 264.101 (50 FR 28747, July 15, 1985). An expedited process is needed if such States are to avoid losing their authority to issue corrective action permits upon the effective date of today's rule. This expedited process would not involve a detailed review of the State regulations. Rather, when determining whether the State's regulations are substantially equivalent to today's rules, EPA would consider the State's statutory authorities to impose similar corrective action requirements. Because today's rules clarify the scope of and are consistent

with the July 15, 1985, codification rule for which some States are authorized, these authorized States already should have statutory authority to implement today's rules.

To ensure that today's rules are uniformly applied by a State granted interim authorization under this approach, a State applying for interim authorization would be required to commit, in the State-EPA Memorandum of Agreement, to implementing its corrective action authorities according to the subpart S requirements. In particular, permits issued by the State must reflect subpart S requirements even prior to adoption by the State of regulations equivalent to and no less stringent than the subpart S requirements. The State interim authorization application under this approach, then, would consist of the revised Memorandum of Agreement (MOA), and a revised Attorney General's (AG) statement certifying that the State has the authority to enter into the Memorandum of Agreement and that permits issued with the conditions agreed to in the MOA would be enforceable under State law. EPA specifically invites comment on whether State law allows the State to make this MOA commitment.

EPA believes this expedited process will minimize disruptions to the State permit process. A State already authorized for corrective action which applies for interim authorization for today's rule shortly after its publication as a final rule should be able to receive interim authorization prior to the effective date and thus avoid the need for EPA to resume responsibility for issuing permits containing corrective action conditions in that State.

Although requirements imposed pursuant to section 3006(g)(1) of HSWA take effect in authorized States at the same time as in unauthorized States, EPA believes that this requirement applies only to the promulgation of the regulations identified in § 271.1(j) and only to the extent that these requirements put the HSWA program in place. In passing section 3006(g)(1), Congress was concerned that no delay occur before these requirements, once in place in the Federal program, became effective in authorized States. However, Congress clearly did not intend for the authorized State program's authority to return, in part, to EPA every time EPA were to promulgate a subsequent, more stringent modification or addition to these requirements promulgated under HSWA. Thus, once the basic framework for the HSWA provisions has been promulgated and is essentially complete,

subsequent regulations promulgated by EPA will be adopted by States according to the timelines for non-HSWA regulations in 40 CFR 271.21(e). In regard to today's rule, EPA is soliciting comment on whether the HSWA corrective action requirements should be considered essentially complete with the adoption of these requirements.

40 CFR 271.21(e)(2) requires that authorized States must modify their programs to reflect Federal program changes, and must subsequently submit the modifications to EPA for approval. The deadlines by which a State must modify its program to adopt this proposed regulation will be determined by the date of promulgation of the final rule, in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (40 CFR 271.21(e)(3)). Once EPA approves the modification, the State requirements become subtitle C RCRA requirements.

A State that submits its official application for final authorization less than 12 months after the effective date of these standards is not required to include standards equivalent to these standards in its application. However, the State must modify its program by the deadlines set forth in 40 CFR 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these standards must include standards equivalent to these standards in their applications. 40 CFR 271.3 sets forth the requirements a State must meet when submitting its final authorization application.

In addition to meeting the requirements in 40 CFR part 271, a State seeking authorization for today's rules must demonstrate the ability to capably implement the base RCRA program as well as the additional HSWA elements. EPA's assessment of a State's capability will reflect an evaluation of the State's entire authorized program. The assessment will examine not only whether a State is effectively implementing the base program, but also how that State may implement additional program areas.

2. States with Existing Corrective Action Programs. States that are authorized for RCRA, but not for corrective action may already have requirements under State law similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program

modification is approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under cooperative agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs, rather than take separate actions under Federal authority.

Additionally, some States have received authorization for HSWA corrective action pursuant to the initial codification of section 3004(u) at 40 CFR 284.101 (50 FR 28747, July 15, 1985). The July 15, 1985, Codification Rule explains at 50 FR 28730 that a State's authorization status may change in response to further implementation of HSWA, *i.e.*, when EPA publishes regulations that further define initially codified rules. A State that was authorized for corrective action under the July 15, 1985, Codification Rule will no longer be authorized when today's rules are promulgated unless the State applies for and receives interim or final authorization before the effective date of the final promulgation of today's rules. However, if such States have not obtained interim or final authorization by the effective date, cooperative agreements can be used so as to avoid interruption of ongoing State corrective action activities. See the above discussion of an expedited process for interim authorization of such States.

C. Corrective Action and Mixed Waste Authorization

On July 3, 1986, EPA published a notice that, to obtain and maintain authorization to administer and enforce a hazardous waste program pursuant to subtitle C of RCRA, States must have authority to regulate the hazardous component of radioactive mixed wastes (51 FR 24504). Radioactive mixed wastes are wastes that contain hazardous wastes subject to RCRA and radioactive wastes subject to the Atomic Energy Act (AEA). Radioactive mixed wastes (except for the component subject to AEA) are considered to be a "solid waste" for purposes of corrective action at solid waste management units. Therefore, in order to obtain authorization for corrective action, States must have previously obtained or must simultaneously obtain authorization for their definition of solid waste, which must not exclude the non-AEA components of radioactive mixed waste. This is because States must be able to apply their corrective action authorities to mixed waste units.

X. Regulatory Impact Analysis

A. Executive Order No. 12291 Regulatory Impact Analysis

1. *Background.* In conjunction with the development of today's proposed rule, EPA performed a regulatory impact analysis (RIA), as mandated by Executive Order 12291. These analyses are required for "major" regulations, defined as those likely to result in annual effects on the economy of \$100 million or more; a major increase in costs or prices for consumers or individual industries; or significant adverse effects on competition, employment, investment, productivity, innovation, or international trade. The results of the RIA prepared for today's rulemaking demonstrate that the rule is a "major" regulation.

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, the Agency is also required to assess the impact of a proposed or final rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). The results of this assessment, which was conducted as part of the RIA, are presented below in section K.B.

The complete regulatory impact analysis document is available in the docket established for this proposed rule. The following is a summary of the analytical methodology used in conducting the RIA, and the results of the analysis.

2. *Summary and Major Conclusions.* The analysis conducted by the Agency indicates that the corrective action rule may result in a wide range of costs, depending on the nature of the remedies selected in site-specific decisionmaking. Given the large, national scope of this rule, and the flexibility provided by the provisions outlined in this proposal, these uncertainties are expressed in the following discussion.

Overall, the analysis found that about 31 percent of facilities are projected to require corrective action for releases to ground water from solid waste management units (Media other than ground water were not analyzed due to data and modeling limitations.) The average annualized per facility costs for non-Federal facilities under today's proposed rule are estimated to range between \$1.8 million to \$0.4 million. The total present value national cost of the proposed rule, as an increment over the pre-HSWA corrective action program, is likely to range between \$7 billion and \$42 billion. The costs of cleaning up Federal facilities, presented separately, are much more uncertain and could range between \$3 billion to \$18 billion.

The above results reflect two of four regulatory alternatives that were analyzed which the Agency believes reflect the flexibility inherent in the proposed rule. These alternatives provide an upper and lower bound to the costs of the proposed rule and reflect the Agency's uncertainty about several of the data and assumptions used in estimating costs, such as the types of remedial measures that will be ultimately implemented. While both regulatory alternatives would require cleanup to health-based levels, the key distinction between them is in the choice of allowable corrective action remedies. The analysis assumed that the lower bound option would be more flexible than the upper bound (e.g., by allowing use of exposure controls in cases where certain remedies were technically infeasible or prohibitively expensive).

3. *Scope and Analytical Approach.* In developing the RIA for today's proposed rule, the Agency analyzed both qualitatively and quantitatively several basic alternatives which could have been adopted in structuring the corrective action rule. The alternatives studied cover a range, from a highly conservative "cleanup to background" approach with very little flexibility in adjusting remedies for site-specific conditions, to alternatives which trigger cleanup of releases in only limited circumstances, and would allow, in many cases, contamination to remain within a facility's property and beyond. The analysis indicates that these alternatives have quite different environmental results, as well as impacts on the regulated community.

In developing the RIA, EPA assembled data to estimate the potential scope of the RCRA corrective action program. The data used in generating these estimates was primarily obtained from the Agency's existing database on RCRA facilities (the "Hazardous Waste Data Management System," or HWDMSS), and an analysis conducted for the RIA which examined a sample set of 65 RCRA Facility Assessment (RFA) reports. These reports are typically prepared by EPA or the States prior to issuance of RCRA permits, and provide preliminary findings as to what releases have or may have occurred, and what investigations should be conducted to verify and/or characterize the releases. These preliminary RFA findings were extrapolated to provide estimates of the numbers and types of facilities that may require corrective action. Certain data from the reports were also used to support modeling for the quantitative analysis of the RIA. A summary of the RIA estimates as to the

size and distribution of RCRA facilities that may need corrective action are presented in the following section of this discussion.

4. *Potential Scope of the Corrective Action Program.* EPA estimates that there are approximately 5,700 facilities regulated under RCRA subtitle C that are potentially subject to the corrective action authorities of sections 3004(u) and 3008(h). Based on preliminary survey results from RFA reports, it is estimated that roughly 80,000 solid waste management units exist at these facilities; this number includes some 3,000 land-based hazardous waste management units (e.g., hazardous waste landfills and surface impoundments) that were subject to corrective action prior to the 1984 HSWA amendments. The number of solid waste management units at individual facilities varies widely, up to as many as 1,300. Federal facilities, because of their large size, typically contain many more solid waste management units—an average of 55 per facility, according to the RFA survey results. The survey indicated that there are an average of 12 solid waste management units (including hazardous waste management units) at non-Federal facilities.

The types of solid waste management units found at facilities are diverse. More than one-third (36 percent) are tanks used for storage or treatment of wastes. Landfills comprise 16 percent, and surface impoundments 15 percent. The remainder are units such as container storage areas, piles, land treatment units, incinerators and other miscellaneous units. The survey also found a wide diversity within unit categories in terms of size, age, general condition, types of wastes managed, and other factors.

The survey revealed that, on average, 62 percent of all facilities have indications of possible releases, based on RFA findings, sufficient to require follow-up remedial investigations (i.e., RFIs). Typically, facilities that have subtitle C land disposal units and incinerators are more likely to require follow-up investigations than are treatment/storage facilities (74 percent, 70 percent and 56 percent, respectively). The Agency's experience with the corrective action program to date (as confirmed by the RFA survey results) indicates that one-half of these facilities (or one-third of the total universe) will require some type of remedial action, based on the confirmation of a release in the RFI.

Potential releases of concern most often noted in RFA findings are releases

to ground water and soil; of all facilities, 30 percent have actual or suspected releases to ground water, 34 percent to soil. Facilities with confirmed or suspected releases to surface water and air are less common—17 percent and 7 percent respectively, based on the RFAs surveyed.

Based on the results of the models used in the quantitative analysis conducted for the RIA, approximately 31 percent (1,700 RCRA facilities) will have ground-water contamination requiring remediation.

5. Qualitative Analysis. EPA considered three strategies for implementing corrective action under the HSWA mandate that permits for all treatment, storage, or disposal facilities (TSDFs) address releases from SWMUs to all environmental media. The following is a summary of each alternative strategy.

Strategy 1—Cleanup to background levels as soon as practicable for all facilities. This strategy represented the most stringent and environmentally conservative option of the three. Regulations modeled after this approach would require complete restoration of all contamination back to the unit boundary, as quickly as could be practicably achieved. In order to ensure that solid waste management units would continue to meet what would amount to a "zero release" standard, extensive source controls would be required, perhaps often involving treatment or destruction of all wastes that could cause future contamination.

This strategy would, if implemented, at least theoretically achieve the highest degree of protection to human health and the environment. Realistically, however, current technologies cannot consistently achieve such a cleanup standard. In addition, the economic impacts of such a regulatory approach would obviously be much greater than the other options, and could be expected to cause substantially more owner/operators to become insolvent, thereby placing additional demands on other funding sources, such as State or Federal cleanup funds.

Strategy 2—Cleanup to health-based levels, with flexibility in timing. In broad terms, this strategy would require cleanup of releases to the unit boundary to concentration levels safe for lifetime human exposure. The timing for achieving these levels would vary depending on a number of site-specific factors, such as the extent and nature of the contamination, exposure potential, availability of technologies, and other factors. Source controls would be required in order to prevent further releases above health-based levels.

This strategy would also achieve a conservative level of protection. The economic impacts of this strategy, although substantial, would be considerably smaller than for Strategy 1.

Strategy 3—Cleanup to health-based standards only where actual or imminent exposure exists. Under Strategy 3, corrective actions would be required only if there was evidence of actual or imminent exposure to contaminated media (e.g., contaminated drinking water wells), above health-based standards. The extent of cleanup would be tied to alleviating that exposure; cleanup to the unit boundary would not be required unless exposure were actually of concern at that point. Required source control measures would be less extensive than under Strategy 1 or 2. Protection against future exposure to contamination would rely heavily on institutional controls.

This regulatory approach would achieve a minimum level of protection, as compared to the other two strategies. By allowing contaminated media to remain contaminated based on current exposure patterns, protection against future exposure could not be guaranteed. Thus, Strategy 3 is the least protective strategy. This strategy would, however, be substantially less costly to owner/operators, relative to Strategies 1 and 2.

Today's proposed rule adopts the Strategy 2 approach. The Agency believes that this regulatory strategy provides an optimum balance in ensuring a high degree of protection of human health and the environment, while not placing unnecessary burdens on facility owner/operators.

It should be understood that crafting a comprehensive rulemaking within the broad confines of any of the three alternatives listed above would, of necessity, require addressing a large number of specific policy questions. Thus, a variety of specific regulatory blueprints could be created under any one alternative. In this regard, as noted below, we have developed two alternatives for the purpose of quantitative analysis that we believe reflect the bounds of flexibility of implementation afforded by this rule. This is reflected in the rule proposed today, which is generally patterned after Strategy 2, but also contains certain regulatory requirements that could be considered in line with Strategies 1 and 3.

6. Description of Options Analyzed Quantitatively. In developing the quantitative analysis for the RIA, a similar range of regulatory options were assessed as in the qualitative analysis. For comparison purposes, however, the

analysis also examined a "baseline" option—in effect, the pre-HSWA corrective action program. In addition, the Agency developed four regulatory options, two of which were generally believed to reflect the flexibility inherent in the proposed rule. It should also be noted that in structuring the modeling logic for this analysis, it was necessary to make certain assumptions and use decision rules that vary slightly from those used in the qualitative analysis; however, the broad regulatory alternatives examined in the qualitative and quantitative analyses are generally the same.

The quantitative analysis examined each of the five regulatory options in terms of the following criteria: cost, protection of human health and the environment, flexibility in implementation, and technical practicability. This analysis evaluates the effects of each alternative only as it would address contamination of ground water.

Detailed information on the data used in this analysis, and how the models were constructed, are presented in the RIA document. The following is a summary of the options modeled, and the general assumptions used in constructing each.

Option 1: Baseline (Pre-HSWA). This option represents requirements under RCRA prior to enactment of the 1984 HSWA corrective action requirements and is used as the basis for comparison of costs and benefits of other options. Only land disposal units that received hazardous waste after July 26, 1982, and thus were regulated under part 264, subpart F, were examined. The corrective action trigger and target concentrations are the same, either the background concentration or a maximum contaminant level. (For modeling purposes, the baseline scenario assumed that cleanup targets would not be established at "alternate concentration limits" under subpart F.) Only onsite cleanup within the facility boundary is addressed. Ground-water removal and treatment, or capping, are the only corrective action remedies considered.

Option 2: Immediate Cleanup to Background. This option is the strictest of those evaluated. All SWMUs, in addition to regulated subtitle C land disposal units, were addressed. Any detectable release to ground water in excess of background levels would trigger corrective action, and both on-site and off-site contamination must be cleaned up to background levels as soon as practical. For purposes of this analysis, we assumed that background

contamination did not exist and, therefore, assumed that cleanup to background was equivalent to cleanup to detection limits. Source controls are required with a bias toward excavation.

Option 3: Immediate Cleanup to Health-Based Standards. This option is similar to the previous one in that all SWMUs are addressed, source control remedies such as excavation are required, and off-site contamination must be addressed as soon as detected. However, corrective action would be triggered only if concentrations were detected above a health-based standard, rather than above background concentrations. This option involves a strong preference towards source control remedies and towards cleanup of contamination as quickly as possible. Use of technical infeasibility waivers is very limited, even if remedies cannot reasonably be expected to achieve the target. In addition, unlike the previous option, cleanup of on-site contamination could be deferred until facility closure, at which point cleanup to health-based levels would be required.

Option 4: Flexible Cleanup to Health-Based Standards. This option also addresses SWMUs, and health-based standards are used as both trigger and target levels. As in the previous option, owners and operators may defer cleanup of on-site releases until facility closure. However, in this alternative owners and operators have considerable flexibility in identifying corrective action remedies. Here, remedies less costly than source control can be chosen if they achieve target within a reasonable time frame. As a decision rule to reflect the fact that the problems of scale and other technical difficulties will preclude certain remedies at complex sites, remedies that failed to achieve cleanup in a reasonable period of time (assumed to be about 130 years for this analysis) or that would be extraordinarily expensive (i.e., over \$150 million) were rejected as "impracticable." Instead, exposure

controls would be relied on to prevent risk in these cases. It is important to note that this approach is not intended to imply that remedies of this scope would never be undertaken, or to define the limits of technical practicability.

Option 5: Flexible Cleanup Based on Actual Exposure. This option is the least stringent of the five. It is similar to Option 4, except that cleanup of off-site exposure could be deferred if there is no actual human exposure to the release. If there is an off-site exposure, corrective action must address the exposure. Again, under this option, there is a

flexible approach towards remedy selection.

The Agency believes that options 3 and 4 provide an upper and lower bound on the range of outcomes that may result during implementation of the proposed rule. This range results from the flexible nature of the proposed rule and the uncertainty about the choice of remediation measures in the field and the performance of the remedies that are selected. EPA expects that the real effects of the rule are likely to lie somewhere between these two options.

7. Results of Quantitative Analysis. The analysis estimated that approximately 31 percent of all RCRA facilities will trigger corrective action in all the post-HSWA options analyzed, as compared to 14 percent that would trigger under the baseline pre-HSWA scenario. This reflects the requirement that all SWMUs, not just land disposal units, are subject to corrective action under post-HSWA options. Note that even in the post-HSWA options, approximately two-thirds of the facilities will not trigger corrective action for ground water.

It is important to note that differences in trigger levels did not result in significant differences in the number of facilities triggering corrective actions. However, differences in target levels for the various regulatory options made a significant difference in how many corrective actions were "successful" in achieving cleanup levels, as is discussed later in this section. In examining the potential benefits of the proposal (Options 3 and 4) as compared to other options, the Agency developed an "effectiveness" test which measures the degree to which a particular option is successful in achieving its cleanup level. The results of the test demonstrate that Options 3 and 4 are the most successful in achieving the cleanup target. This analysis supports the Agency's selection of Options 3 and 4 for the proposed rule. The effectiveness test should not, however, be viewed as a measure of all the potential benefits of remediation of contaminated ground water.

The point when corrective action is triggered was also analyzed. The analysis demonstrates that, for Option 2, in which corrective action must begin immediately, approximately 28 percent of all existing RCRA facilities would initiate corrective action in the first year of the program. In Options 3, 4, and 5, in which on-site corrective action can be deferred, only about 12 percent of all facilities would initiate corrective action in the first year. The ability of a facility to defer on-site corrective actions results in lower economic impacts.

For those facilities that trigger corrective action, the analysis estimated the length of time required for a corrective action to reduce contaminant concentrations below the target levels at all wells within 1,500 meters of the release. Under options requiring cleanup to health-based levels (i.e., options 3, 4, and 5), about 51 to 56 percent of the facilities reach cleanup targets at all well distances within 75 years of the initiation of corrective action. In contrast, under the two options requiring cleanup to background, only about 34 percent of facilities triggering corrective action are projected to achieve targets within 75 years. This further confirms the presumption that achieving cleanup to background concentrations may be difficult or impossible to achieve technically.

As part of the quantitative analysis, the Agency developed estimates of the costs of corrective action under different regulatory options on a per-facility basis, as well as on a national basis. Typical facility corrective action costs vary significantly depending upon the specific regulatory option. The cost analysis demonstrates that the most stringent post-HSWA regulatory option, (i.e., Option 2, or "Immediate Cleanup to Background") is by far the most costly option, with a mean present value cost of over \$281 million per facility, and an annualized per facility cost of about \$19 million (at a 3 percent discount rate).

The upper bound proposed rule option, "Immediate Cleanup to Health-Based Standards" option (i.e., Option 3), was estimated to have a mean present value per facility cost of \$26.9 million, and annualized per facility costs of \$1.8 million. The lower bound regulatory option (i.e., Option 4, or "Flexible Cleanup to Health-Based Standards") was estimated to have a mean present value cost per facility of \$6.3 million, and annualized per facility costs of \$0.4 million.

The baseline per-facility cost is the lowest of all the options at a mean present value cost of \$3.8 million, and an annualized per-facility cost of \$0.3 million. The "Flexible Cleanup Based on Actual Exposure" option (i.e., Option 5) was estimated to have a mean present value cost of \$4.8 million and annualized per facility costs of \$0.3 million.

The total national cost for EPA's corrective action program is influenced by three parameters: The average cost of each action, the number of facilities required to undertake corrective action, and the cost to facility owners and operators of undertaking required investigations. National costs discussed below are presented in incremental

terms (*i.e.*, after subtracting the costs of the baseline scenario).

The "Immediate Cleanup to Background" option is the most expensive, with an incremental total cost above the baseline pre-HSWA scenario of \$490 billion. This option was estimated to have an annualized cost of \$32.9 billion.

Among the other regulatory options, the differences in costs are primarily a result of differences in timing of cleanup and in the flexibility afforded in terms of choosing corrective action remedies. Option 3 (*i.e.*, "Immediate Cleanup to Health-Based Standards") was estimated at a total cost of \$41.8 billion, with an annualized cost of \$2.8 billion. This option is relatively costly, due in part to modeling assumptions as to the types of remedial technologies that would be employed to meet these standards.

Option 4 (*i.e.*, "Flexible Cleanup to Health-Based Standards") was among the least costly, with a total cost of \$7.4 billion, and an annualized cost of \$0.5 billion. The costs are lower because, in general, less expensive technologies are assumed and, for many facilities, final cleanup of contaminated ground water would be deferred for a number of years, thus reducing the present value costs.

Option 5 (*i.e.*, "Flexible Cleanup Based on Actual Exposure"), where both on-site and off-site cleanup of contamination could be deferred until closure if there was no actual exposure, was somewhat less expensive than the above option. This option had a total cost of \$5.0 billion, an annualized cost of \$0.3 billion.

Today's proposed regulation is most similar to Option 3 (*i.e.*, "Immediate Cleanup to Health-Based Levels") and Option 4 (*i.e.*, "Flexible Cleanup to Health-Based Standards"). These results illustrate that the total national costs of this rule are likely to range between \$7 and \$42 billion. The relatively wide range reflects the uncertainty in a number of areas, such as the timing of corrective action, the types of remedial measures that will be considered, and the nature and difficulty of remedial measures that are selected. Overall, the Agency believes that this range represents a reasonable bound of the potential effects of the rule, and that in all likelihood, the actual effects will fall somewhere within this range.

The Agency is committed to trying to refine these costs estimates before promulgation of the final rule. To help in this effort, the Agency requests that commenters provide any data or information relevant to the analysis described in the preamble or in the

accompanying Regulatory Impact Analysis.

8. *Economic Impacts.* With the cost information developed from the quantitative analysis, the RIA estimated the financial impacts of the proposed rule on affected firms. The results are expressed in terms of predictions of total costs that facility owners and operators would not be able to cover due to insolvency. The results provide an indication of the magnitude of costs that could ultimately be faced by entities other than the immediate owner or operator of the facility. Alternate funding sources might include the Superfund (provided that the facility would be eligible for Superfund funding), State remedial action funds, corporate parents of facility owners and operators, or, through price increases, the customers of the firm owning or operating the facility. The results of this analysis are presented in "undiscounted" numbers, since Superfund monies are generally described in undiscounted terms. For scenarios other than baseline, costs are presented on an incremental basis relative to the baseline.

Under the baseline scenario, it was estimated that 9 percent of all firms owning RCRA facilities would be adversely affected, creating total unfunded costs of \$97 million (undiscounted) over the next 50 years.

The "Immediate Cleanup to Background" scenario generated by far the highest level of unfunded costs, totaling \$74 billion over the next 50 years. The "Immediate Cleanup to Health-Based Standards" option results in unfunded costs of over \$5.1 billion over the next 50 years. The "Flexible Cleanup to Health-Based Standards" option results in unfunded costs of over \$0.5 billion over the next 50 years. The "Flexible Cleanup Based on Actual Exposure" option resulted in a total of \$0.2 billion unfunded costs, undiscounted, over the next 50 years.

Based on the RIA analysis, EPA anticipates that the ability to fund corrective action costs will vary between industries. Industries that may have a relatively low ability to pay for corrective actions include sanitary services; coating, engraving, and allied services; and miscellaneous wood products. These industries have relatively low net income levels. Industries that show a particularly high ability to pay include petroleum refining, motor vehicles and motor vehicle equipment, and aircraft and aircraft parts.

9. *Federal Facilities.* The RIA discusses Federal facilities as a separate entity because, although they only

constitute 6 percent of the total RCRA facility universe, they contain many more SWMUs per facility (on average, 55 per site) and therefore, may incur higher corrective action costs. These costs must be funded by public money.

Based on the RIA analysis, it is estimated that of the 352 Federal RCRA facilities, between 61 percent and 100 percent are likely to require ground-water corrective action under the proposed rule, compared to between 17 percent and 23 percent under the baseline. A rough approximation of the costs for these corrective actions, per facility, ranges from \$17 million for the baseline scenario to \$1.3 billion for the "Immediate Cleanup to Background" option. For the options most similar to the proposed rule (*i.e.*, "Immediate Cleanup to Health-Based Standards" and "Flexible Cleanup to Health-Based Standards") the mean per facility cost is estimated to range from \$123 to \$29 million, or in annualized costs, from about \$8 to \$2 million per facility.

The total Federal facility costs, incremental to the baseline, for the options most similar to the proposed range from \$3 to \$18 billion; the annualized costs range from \$0.2 to \$1.1 billion. Again, this range reflects the likely bounds on the ways in which the RCRA corrective action program will ultimately be implemented for Federal facilities. Incremental Federal facility costs for other regulatory approaches could be \$208 billion for the "Immediate Cleanup to Background" option, or \$2 billion for the "Flexible Cleanup Based on Actual Exposure" option. Baseline costs are estimated to be \$1 billion.

This analysis thus concludes that, although Federal facilities only comprise 6 percent of the population affected by the corrective action program, they could incur roughly 30 percent of the total cost of the rule.

10. *Further Regulatory Impact Analyses.* Given the scope and potential impacts of this rulemaking, EPA recognizes the need to continue to refine its estimates of the costs and benefits of the rule. The Agency intends to collect additional data and will conduct substantial new analyses prior to finalizing today's rule. In conducting these studies, the Agency believes that it will be of particular value to examine the experience gained in recent years in remediating Federal facilities. Large volumes of information and extensive technical experience have been accumulated specifically by the Department of Defense and the Department of Energy. EPA intends to form an interagency working group to

develop and conduct these further Regulatory Impact Analyses.

The new analyses will be conducted in accordance with the existing Agency guidance on Regulatory Impact Analysis and the draft Regulatory Impact Analysis Guidance published in the 1988 Regulatory Program of the United States. The analyses will explicitly examine the costs, health and environmental benefits, and technological limitations for the key regulatory requirements contained in the proposal—especially for the several alternative approaches to ground water remediation outlined in the proposed rule. This analysis will also estimate the aggregate impacts, identified above, for sites eligible for remediation under this rule and for those sites which are listed on the NPL and will, therefore, look to this rule as an ARAR, under the provisions of CERCLA. Upon completion of the revised analyses, EPA will solicit comment on the results of the analyses and the methodology used to derive them. The Agency will then assess these comments, along with comments which will have been received previously on the proposed rule. Through these actions EPA will ensure that the net social benefits (including environmental and health benefits) of the rule proposed today are maximized, taking into account costs, technological limitations, risks, and realistic assessments of both actual and reasonably expected uses of each site. If the revised RIA, together with the comments received, demonstrate that the rule proposed today does not achieve this outcome, the Agency will make appropriate

modifications to the final rule, or if necessary, will repropose the rule.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act requires Federal agencies to fully analyze the economic effects of regulations on small entities. The Agency analyzed the economic impacts for the regulatory options that are most similar to today's proposed rule (*i.e.*, "Immediate Cleanup to Health-Based Standards" and "Flexible Cleanup to Health-Based Standards").

The RIA assumes that a small business is significantly impacted if its excess of cash flow over ten percent of its total liabilities is insufficient to meet corrective action costs, or if its net income is insufficient to meet its corrective action costs.

For the alternative analyzed, it was found that small firms encounter more severe impacts from the corrective action requirements than large firms. The options most similar to the proposed rule result in incremental impacts (*i.e.*, relative to the baseline) on approximately 9 to 11 percent of small businesses owning RCRA facilities.

Based on the Agency's guidelines for implementing the Regulatory Feasibility Act, the results of the analysis as summarized above, suggest that the proposed rule does not impose significant impacts on small entities.

C. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget

(OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Reporting and recordkeeping burden on the public for this collection is estimated at 42,497 hours for the 674 respondents, with an average of 1.151 hours per response. (Burden estimates should include all aspects of the collection effort and may include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information, *etc.*)

If you wish to submit comments regarding any aspect of the collection of information, including suggestions for reducing the burden, or if you would like a copy of the information collection request (please reference ICR #1451), contact Rick Westlund, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460 (202-382-2745); and Tim Hunt, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

List of Subjects in 40 CFR Parts 264, 265, 270, and 271

Administrative practice and procedure, Corrective action, Hazardous waste, Insurance, Reporting and recordkeeping requirements.

Dated: July 5, 1990.

William Reilly,

Administrator.

XI. Supplementary Documents

APPENDIX A.—EXAMPLES OF CONCENTRATIONS MEETING CRITERIA FOR ACTION LEVELS

[Section 264.521(a)(2)(i)-(v)]

Constituent name	Class	Air (ug/ m ³)	Water (mg/L)	Soils (mg/ kg)
Acetone	D		4E-00	8E+03
Acetonitrile	D		2E-01	5E+02
Acetophenone	D	2E-01	4E-00	8E+03
Acrylamide	B2	8E-04	8E-06	2E-01
Acrylonitrile	B1	1E-02	6E-05	1E-00
Adicarb	D		5E-02	1E-02
Adrin	B2	2E-04	2E-06	4E-02
Allyl alcohol	D		2E-01	4E+02
Aluminum phosphide	D		1E-02	3E+01
Aniline	B2		6E-03	1E+02
Antimony	D		1E-02	3E+01
Arsenic	A	7E-05	(1)	8E+01
Asbestos (2)	A	2E-02		
Barium cyanide	D		2E-00	6E+03
Barium, toxic	D	4E-01	(1)	4E+03
Benzidine	A	2E-05	2E-07	3E-03
Benzylamine	B2	4E-04	8E-06	2E-01
Bis(2-ethylhexyl)phthalate	B2		3E-03	5E-01
Bis(chloroethyl)ether	B2	3E-03	3E-05	6E-01
Bromodichloromethane (3)	B2		3E-05	5E-01
Bromoform (3)	D		7E-01	2E+03
Bromomethane	D	3E+01	5E-02	1E+02
Butyl benzyl phthalate	C		7E-00	2E+04

APPENDIX A.—EXAMPLES OF CONCENTRATIONS MEETING CRITERIA FOR ACTION LEVELS—Continued

(Section 264.52(a)(2)(i-v))

Constituent name	Class	Air (ug/m ³)	Water (mg/L)	Soils (mg/kg)
Cadmium	B1	6E-04	(1)	4E+01
Calcium cyanide	D		1E-00	3E+03
Carbon disulfide	D		4E-00	6E+03
Carbon tetrachloride	B2	3E-02	3E-04	5E-00
Chloral	D		7E-02	2E+02
Chloroform	B2	3E-03	3E-06	5E-01
Chlorine cyanide	D		2E-00	4E+03
Chlorobenzene	D		7E-01	2E+03
Chloroform (3)	B2	2E+01	6E-03	1E+02
2-Chlorophenol	D	4E-02	2E-01	4E+02
Chromium (VI)	A	9E-05	(1)	4E+02
Copper cyanide	D		2E-01	4E+02
m-Cresol	D		2E-00	4E+03
o-Cresol	D		2E-00	4E+03
p-Cresol	D		2E-00	4E+03
Cyanide	D		2E-00	4E+03
Cyanogen	D		7E-01	2E+03
Cyanogen bromide	D		1E-00	3E+03
DDO	B2		3E-00	7E+03
DDE	B2		1E-04	3E-00
DDT	B2		1E-04	2E-00
Diethyl phthalate	B2	1E-02	1E-04	2E-00
Diethylenetriamine	D		4E-00	8E+03
3,3'-Dichlorobenzidine	B2	9E-04	9E-06	1E-01
Dichlorodifluoromethane	B2		6E-05	2E-00
1,2-Dichloroethane	D	2E+02	7E-00	2E+04
1,1-Dichloroethylene	B2	4E-02	(1)	8E-00
2,4-Dichlorophenol	C	3E-02	(1)	1E+01
2,4-Dichlorophenoxyacetic acid	D		1E-01	2E+02
1,3-Dichloropropene	D		4E-01	8E+02
Dieldrin	B2		1E-02	2E+01
Diethyl phthalate	B2	2E-04	2E-06	4E-02
Diethylenetriamine	D		3E+01	9E+04
Dimethoate	B2	2E-05	2E-07	5E-03
Dimethylenetriamine	D		7E-01	2E+03
m-Dinitrobenzene	B2	7E-05	7E-07	1E-02
2,4-Dinitrophenol	D		4E-03	8E-00
2,3-Dinitrotoluene (and 2,6-, mixture)	D		7E-02	2E+02
1,4-Dioxane	B2		5E-06	1E-00
Diphenylamine	B2		3E-03	8E+01
1,2-Diphenylhydrazine	D		9E-01	2E+03
Disulfoton	B2	4E-03	4E-05	9E-01
Endosulfan	D		1E-03	3E-00
Endothall	D		2E-03	4E-00
Endrin	D		7E-01	2E+03
Epichlorohydrin	D		(1)	2E+01
Ethylbenzene	B2	6E-01	4E-03	7E+01
Ethylene dibromide	D		4E-00	8E+03
Formaldehyde	B2	5E-03	4E-07	8E-03
Formic acid	B1	8E-02		
Glycidialdehyde	D		7E+01	2E+05
Heptachlor	D		1E-02	3E+01
Heptachlor epoxide	B2	8E-04	8E-06	2E-01
Hexachlorobenzene-p-dioxin	B2	4E-04	4E-06	8E-02
Hexachlorobutadiene	B2	6E-07	1E-08	1E-04
alpha-Hexachlorocyclohexane	C	4E-01	4E-03	9E+01
beta-Hexachlorocyclohexane	B2	6E-04	6E-06	1E-01
Hexachlorocyclopentadiene	C	2E-02	2E-04	4E-00
Hexachloroethane	D	7E-02	2E-01	6E+02
Hexachlorophene	C	3E-00	3E-02	8E+01
Hydrazine	D		1E-02	2E+01
Hydrogen cyanide	B2	2E-04	1E-05	2E-01
Hydrogen sulfite	D		7E-01	2E+03
Isobutyl alcohol	D		1E-01	2E+04
Isophorone	D		1E+01	2E+04
Lead	C		9E-02	2E+03
Lindane (gamma-hexachlorocyclohexane)	B2		(1)	
m-Phenylenediamine	B2/C		(1)	5E-01
Maleic anhydride	D		2E-01	5E+02
Maleic hydrazide	D		4E-00	8E+03
Mercury (inorganic)	D		2E+01	4E+04
Methacrylonitrile	D		(1)	2E+01
Methanone	D	7E-01	4E-03	8E-00
Methylamine	D		9E-01	2E+03
Methyl chloroformate	D			
Methyl ethyl ketone	D	3E+02	2E-00	4E+03
Methyl isobutyl ketone	D	7E+01	2E-00	4E+03
Methyl parathion	D		9E-03	2E+01

APPENDIX A.—EXAMPLES OF CONCENTRATIONS MEETING CRITERIA FOR ACTION LEVELS—Continued

(Section 264.521(a)(2)(i-iv))

Constituent name	Class	Air (ug/ m ³)	Water (mg/L)	Soils (mg/ kg)
Methylene chloride	B	3E-01	5E-03	9E+01
n-Nitroso-di-n-butylamine	B2	6E-04	6E-06	1E-01
n-Nitroso-n-ethylurea	B			
n-Nitroso-n-methylethylamine	B2		2E-06	3E-02
n-Nitrosodi-n-propylamine	B2		5E-06	1E-01
n-Nitrosodiethanolamine	B2		1E-05	3E-01
n-Nitrosodiphenylamine	B2		7E-03	1E+02
n-Nitrosopyrrolidine	B2	2E-03	2E-05	3E-01
Nickel	D		7E-01	2E+03
Nickel refinery dust	A	4E-03		
Nitric oxide	D		4E-00	8E+03
Nitrobenzene	D	2E-00	2E-02	4E+01
Nitrogen dioxide	D		4E+01	8E+04
Osmium tetroxide	D		4E-04	8E-01
Parathion	C		2E-01	5E+02
Pentachlorobenzene	D		3E-02	6E+01
Pentachloronitrobenzene	C	1E-01	1E-01	2E+02
Pentachlorophenol	D		1E-00	2E+03
Phenol	D		2E+01	5E+04
Phenyl mercuric acetate	D		3E-03	6E-00
Phosphene	D		1E-02	2E+01
Phthalic anhydride	D		7E+01	2E+05
Polychlorinated biphenyls	B2		5E-06	9E-02
Potassium cyanide	D		2E-00	4E+03
Potassium silver cyanide	D		7E-00	2E+04
Pronamide	D		3E-00	6E+03
Pyridine	D		4E-02	8E+01
Selenous acid	D		1E-01	2E+02
Selenourea	D		2E-01	4E+02
Silver	D		(1)	2E+02
Silver cyanide	D		4E-00	8E+03
Sodium cyanide	D		1E-00	3E+03
Strychnine	D		1E-02	2E+01
Styrene	C		7E-00	2E+04
1,1,1,2-Tetrachloroethane	C	1E-00	1E-02	3E+02
1,2,4,5-Tetrachlorobenzene	D		1E-02	2E+01
1,1,1,2-Tetrachloroethane	C	1E-00	1E-02	3E+02
1,1,2,2-Tetrachloroethane	C	2E-01	2E-03	4E+01
Tetrachloroethylene	B2	1E-00	7E-04	1E+01
2,3,4,6-Tetrachlorophenol	D		1E-00	2E+03
Tetraethyl lead	D		4E-06	8E-03
Tetraethyldithiopyrophosphate	D		2E-02	4E+01
Thalic oxide	D		2E-03	6E-00
Thallium acetate	D		3E-03	7E-00
Thallium carbonate	D		3E-03	6E-00
Thallium chloride	D		3E-03	6E-00
Thallium nitrate	D		3E-03	7E-00
Thallium sulfate	D		3E-03	6E-00
Thiosemicarbazide	D		2E-01	5E+02
Thiram	D		2E-01	4E+02
Toluene	D	7E+03	1E+01	2E+04
Toxaphene	B2	3E-03	(1)	6E-01
1,2,4-Trichlorobenzene	D	1E+01	7E-01	2E+03
1,1,1-Trichloroethane	D	1E+03	3E-00	7E+03
1,1,2-Trichloroethane	C	6E-01	6E-03	1E+02
Trichloroethylene	B2		(1)	6E+01
Trichloromono-fluoromethane	D	7E+02	1E+01	2E+04
2,4,5-Trichlorophenol	D		4E-00	8E+03
2,4,6-Trichlorophenol	B2	2E-01	2E-03	4E+01
2,4,5-Trichlorophenoxyacetic acid	D		(1)	8E+02
1,2,3-Trichloropropene	D		2E-01	5E+02
Vanadium pentoxide	D		3E-01	7E+02
Xylenes	D	1E+03	7E+01	2E+05
Zinc cyanide	D		2E-00	4E+03
Zinc phosphide	D		1E-02	2E+01

(1) MCL available; see appendix B.

(2) The air action level for asbestos is measured in units of fibers/mililiters.

(3) There is an MCL for total inhalomethanes, which includes four constituents: bromoform, bromodichloromethane, chloroform, and dibromochloromethane. Concentration derived using exposure assumptions in appendix D and reference doses for systemic toxicants and verified risk-specific doses at 10-6 for Class A and B carcinogens and 10-5 for Class C carcinogens (see section VI.F.2.6 for further discussion).

A, B and C represents class A, B and C carcinogens, respectively; D represents a systemic toxicant.

APPENDIX B—MAXIMUM CONTAMINANT LEVELS

Constituent	MCL (ppm)
Arsenic.....	0.05
Barium.....	1
Benzene.....	0.005
Cadmium.....	0.010
Carbon tetrachloride.....	0.005
Chromium VI.....	0.05
p-Dichlorobenzene.....	0.075
1,2-Dichloroethane.....	0.005
1,1-Dichloroethylene.....	0.007

APPENDIX B—MAXIMUM CONTAMINANT LEVELS—Continued

Constituent	MCL (ppm)
2,4-D.....	0.1
2,4,5-TP Silox.....	0.01
Endrin.....	0.0002
Fluoride.....	4.0
Lead.....	0.05
Lindane.....	0.004
Mercury.....	0.002
Methoxychlor.....	0.1
Nitrate.....	10

APPENDIX B—MAXIMUM CONTAMINANT LEVELS—Continued

Constituent	MCL (ppm)
Selenium.....	0.01
Silver.....	0.05
Toxaphene.....	0.005
1,1,1-Trichloroethane.....	0.2
Trichloroethylene.....	0.005
Trihalomethanes, total ¹	0.10
Vinyl chloride.....	0.002

¹ including chloroform, bromoform, bromodichloromethane, and dibromochloromethane

APPENDIX C—RANGE OF CONCENTRATIONS FOR ESTABLISHING MEDIA PROTECTION STANDARDS FOR CARCINOGENS

Constituent name	Class	MaxAir (ug/m ³)	MinAir (ug/m ³)	Max- Water (mg/L)	MinWater (mg/L)	MaxSoil (mg/kg)	MinSoil (mg/kg)
Acetone.....	O						
Acetonitrile.....	O						
Acetophenone.....	O						
Acrylamide.....	B2	8E-02	8E-04	8E-04	8E-06	2E+01	2E-01
Acrylonitrile.....	B1	1E-00	1E-02	6E-03	6E-06	1E+02	1E-00
Adicarb.....	O						
Alin.....	B2	2E-02	2E-04	2E-04	2E-06	4E-00	4E-02
Allyl alcohol.....	O						
Aluminum phosphide.....	O						
Asiline.....	B2			6E-01	6E-03	1E+04	1E-02
Antimony.....	O						
Arsenic.....	A	7E-03	7E-05				
Asbestos (2).....	A	2E-00	2E-02				
Barium cyanide.....	O						
Barium, toxic.....	O						
Benzidine.....	A	2E-03	2E-05	2E-05	2E-07	3E-01	3E-03
Beryllium.....	B2	4E-02	4E-04	8E-04	8E-06	2E+01	2E-01
Bis(2-ethylhexyl)phthalate.....	B2			3E-01	3E-03	5E+03	5E-01
Bis(chloroethyl)ether.....	B2	3E-01	3E-03	3E-03	3E-05	6E+01	6E-01
Bromo-chloromethane.....	B2			3E-03	3E-05	5E+01	5E-01
Bromoform.....	O						
Bromomethane.....	O						
Bromomethane.....	O						
Butyl benzyl phthalate.....	O						
Cadmium.....	B1	6E-02	6E-04				
Calcium cyanide.....	O						
Carbon disulfide.....	O						
Carbon tetrachloride.....	B2	3E-00	3E-02	3E-02	3E-04	5E+02	5E-00
Chloral.....	O						
Chlordane.....	B2	3E-01	3E-03	3E-03	3E-05	5E+01	5E-01
Chlorine cyanide.....	O						
Chlorobenzene.....	O						
Chloroform.....	B2	4E-00	4E-02	6E-01	6E-03	1E+04	1E-02
2-Chlorophenol.....	O						
Chromium (VI).....	A	9E-03	9E-05				
Copper cyanide.....	O						
m-Cresol.....	O						
o-Cresol.....	O						
p-Cresol.....	O						
Cyanide.....	O						
Cyanogen.....	O						
Cyanogen bromide.....	O						
DDO.....	B2			1E-02	1E-04	3E+02	3E-02
DDE.....	B2			1E-02	1E-04	2E+02	2E-00
DOT.....	B2	1E-00	1E-02	1E-02	1E-04	2E+02	2E-00
Diethyl phthalate.....	O						
Dihydropyrimidine.....	B2	6E-02	6E-04	6E-04	6E-06	1E+01	1E-01
3,3'-Dichlorobenzidine.....	B2			8E-03	8E-05	2E+02	2E-02
Dichlorodifluoromethane.....	O						
1,2-Dichloroethane.....	B2	4E-00	4E-02	4E-02	4E-04	8E+02	8E-02
1,1-Dichloroethylene.....	C	3E-01	3E-03	6E-03	6E-05	1E+02	1E-04
2,4-Dichlorophenol.....	O						
2,4-Dichlorophenoxyacetic acid.....	O						
1,3-Dichloropropane.....	B2						
Dieldrin.....	B2	2E-02	2E-04	2E-04	2E-06	4E-00	4E-02
Diethyl phthalate.....	O						

APPENDIX C—RANGE OF CONCENTRATIONS FOR ESTABLISHING MEDIA PROTECTION STANDARDS FOR CARCINOGENS—Continued

Constituent name	Class	MaxAir (ug/m ³)	MinAir (ug/m ³)	Max- Water (mg/L)	MinWater (mg/L)	MaxSol (mg/kg)	MinSol (mg/kg)
Diethylnitrosamine	B2	2E-03	2E-05	2E-05	2E-07	5E-01	5E-03
Dimethoate	D						
Dimethylnitrosamine	B2	7E-03	7E-05	7E-05	7E-07	1E-00	1E-02
m-Dinitrobenzene	D						
2,4-Dinitrophenol	B2			5E-03	5E-05	1E+02	1E-00
2,3-Dinitrotoluene (and 2,6, mixture)	B2			3E-01	3E-03	6E+03	6E+01
1,4-Dioxane	D						
Diphenylamine	B2	4E-01	4E-03	4E-03	4E-05	9E+01	9E-01
1,2-Diphenylhydrazine	D						
Disulfoton	D						
Endosulfan	D						
Endothal	D						
Endrin	B2	8E+01	8E-01	4E-01	4E-03	7E+03	7E+01
Epichlorohydrin	D						
Ethylbenzene	B2	5E-01	5E-03	4E-05	4E-07	8E-01	8E-03
Ethylene dibromide	B1	8E-00	8E-02				
Formaldehyde	D						
Formic acid	D						
Glycidyaldehyde	B2	8E-02	8E-04	8E-04	8E-06	2E+01	2E-01
Heptachlor	B2	4E-02	4E-04	4E-04	4E-06	8E-00	8E-02
Heptachlor epoxide	B2	6E-05	6E-07	6E-07	1E-08	1E-02	1E-04
Heptachlorobenzene-p-dioxin	C	4E-00	4E-02	4E-02	4E-04	9E+02	9E-00
Heptachlorobutadiene	B2	6E-02	6E-04	6E-04	6E-06	1E-01	1E-01
alpha-Hexachlorocyclohexane	C	2E-01	2E-03	2E-03	2E-05	4E+01	4E-01
beta-Hexachlorocyclohexane	D						
Hexachlorocyclopentadiene	C	3E+01	3E-01	3E-01	3E-03	5E+03	5E+01
Hexachloroethane	D						
Hexachlorophene	B2	2E-02	2E-04	1E-03	1E-05	2E+01	2E-01
Hydrazine	D						
Hydrogen cyanide	D						
Hydrogen sulfite	D						
Isobutyl alcohol	C			9E-01	9E-03	2E+04	2E+02
Isophorone	B2			3E-03	3E-05	5E+01	5E-01
Lead	B2/C						
Lindane (gamma-hexachlorocyclohexane)	D						
m-Phenylenediamine	D						
Maleic anhydride	D						
Maleic hydrazide	D						
Mercury (inorganic)	D						
Methacrylonitrile	D						
Methomyl	D						
Methyl chlorocarbonate	D						
Methyl ethyl ketone	D						
Methyl isobutyl ketone	D						
Methyl parathion	B	3E+01	3E-01	5E-01	5E-03	9E+03	9E+01
Methylene chloride	B2	6E-02	6E-04	6E-04	6E-06	1E-01	1E-01
n-Nitroso-di-n-butylamine	B						
n-Nitroso-n-ethylurea	B2			2E-04	2E-06	3E-00	3E-02
n-Nitroso-n-methyl-ethylamine	B2			5E-04	5E-06	1E+01	1E-01
n-Nitrosodi-n-propylamine	B2			1E-03	1E-05	3E+01	3E-01
n-Nitrosodiphenylamine	B2			7E-01	7E-03	1E+04	1E+02
n-Nitrosodipyrrolidine	B2	2E-01	2E-03	2E-03	2E-05	3E+01	3E-01
Nickel	D						
Nickel refinery dust	A	4E-01	4E-03				
Nitric oxide	D						
Nitrobenzene	D						
Nitrogen dioxide	D						
Osmium tetroxide	C						
Parathion	C	1E-00	1E-02				
Pentachlorobenzene	D						
Pentachloronitrobenzene	D						
Pentachlorophenol	D						
Phenol	D						
Phenyl mercuric acetate	D						
Phosphine	D						
Phthalic anhydride	B2			5E-04	5E-06	9E-00	9E-02
Polychlorinated biphenyls	D						
Potassium cyanide	D						
Potassium silver cyanide	D						
Pronamide	D						
Pyridine	D						
Selenous acid	D						
Selenourea	D						
Silver	D						
Silver cyanide	D						
Sodium cyanide	D						
Trichlorine	D						

APPENDIX C—RANGE OF CONCENTRATIONS FOR ESTABLISHING MEDIA PROTECTION STANDARDS FOR CARCINOGENS—Continued

Constituent name	Class	MaxAir (ug/m ³)	MinAir (ug/m ³)	Max- Water (mg/L)	MinWater (mg/L)	MaxSoil (mg/kg)	MinSoil (mg/kg)
Styrene	C						
1,1,1,2-Tetrachloroethane	C	1E+01	1E-01	1E-01	3E+03	3E+03	3E+01
1,2,4,5-Tetrachlorobenzene	D						
1,1,1,2-Tetrachloroethane	C	1E+01	1E-01	1E-01	1E-03	3E+03	3E+01
1,1,2,2-Tetrachloroethane	C	2E-00	2E-02	2E-02	2E-04	4E+02	4E-00
Tetrachloroethylene	B2	1E+02	1E-00	7E-02	7E-04	1E+03	1E+01
2,3,4,6-Tetrachlorophenol	D						
Tetraethyl lead	D						
Tetraethylthiopyrophosphate	D						
Thallic oxide	D						
Thallium acetate	D						
Thallium carbonate	D						
Thallium chloride	D						
Thallium nitrate	D						
Thallium sulfate	D						
Thiosemicarbazide	D						
Thiram	C						
Toluene	B2	3E-01	3E-03	3E-03	3E-05	6E+01	6E-01
Toxaphene	D						
1,2,4-Trichlorobenzene	D						
1,1,1-Trichloroethane	C	6E-02	6E-02	6E-02	6E-04	1E+03	1E+01
1,1,2-Trichloroethane	B2			3E-01	3E-03	6E+03	6E+01
Trichloroethylene	D						
Trichloromono-fluoromethane	D						
2,4,5-Trichlorophenol	D						
2,3,6-Trichlorophenol	B2	2E+01	2E-01	2E-01	2E-03	4E+03	4E+01
2,4,5-Trichlorophenoxyacetic acid	D						
1,2,3-Trichloropropane	D						
Vanadium pentoxide	D						
Xylenes	D						
Zinc cyanide	D						
Zinc phosphide	D						

Appendix D: Recommended Exposure Assumptions for Use in Deriving Action Levels

(Sections 264.521 (a)(2); (b); (c)(3); and (4))

1. In deriving action levels for hazardous constituents in ground-water, assume a water intake of 2 liters/day for 70 kg adult/70 year lifetime exposure period.

2. In deriving action levels for hazardous constituents in air, assume air intake of 20 cubic meters/day for 70 kg adult/70 year lifetime exposure period.

3. In deriving action levels for hazardous constituents in soil, which are known or suspected to be carcinogens, assume soil intake of 0.1 gram/day for 70 kg adult/70 year lifetime exposure period.

4. In deriving action levels for hazardous constituents in soil, other than those which are known or suspected to be carcinogens, assume soil intake of 0.2 gram/day for 16 kg child/5 year exposure period (age 1-6).^{*}

5. In deriving action levels for hazardous constituents in surface water designated by the State for use as a drinking water source, assume a water intake of 2 liters/day for 70 kg adult/70 year lifetime exposure period, unless intake of aquatic organisms is also of concern.

^{*} Not to be averaged over a 70-year lifetime.

Appendix E: Examples of Calculations of Action Levels

I. Governing Equations for Calculating Action Levels

A. Systemic Toxicants

$$C_m = [R \cdot D \cdot W] / [I \cdot A]$$

where:

C_m = action level in medium (units are medium-dependent);

R/D = reference dose (mg/kg/day);

W = body weight (kg);

I = intake assumption (units are medium-dependent); and

A = absorption factor¹ (dimensionless).

B. Carcinogenic Constituents

$$C_m = [R \cdot W \cdot L \cdot T] / [CSF \cdot I \cdot A \cdot ED]$$

where:

C_m = action level in medium (units are medium-dependent);

R = assumed risk level (dimensionless) (10^{-6} for class A & B; 10^{-5} for class C carcinogens);

W = body weight (kg);

L/T = assumed lifetime (years);

CSF = carcinogenic slope factor (mg/kg/day)⁻¹;

I = intake assumption (units are medium-dependent);

A = absorption factor (dimensionless); and

ED = exposure duration (years).

¹ Assumed to be 1 for this appendix, based upon the assumption that the human absorption rate will be the same as the rate in the study upon which the R/D or C/P was developed.

II. Example Calculations for Hazardous Constituents in Air

A. Systemic Toxicants

Example calculation for 2,4-dinitrophenol:

$$C_a = [0.002 \text{ (mg/kg/d)} \cdot 1000 \text{ (ug/mg)} \cdot 70 \text{ (kg)}] / [20 \text{ (m}^3/\text{d)} \cdot 1] = 7.0 \text{ ug/m}^3$$

where:

C_a = action level in air (ug/m³)

R/D = 0.002 mg/kg/day

W = 70 kg adult

I = 20 m³/day

A = 1

B. Carcinogenic Constituents

Example calculation for 1,1,2,2-tetrachloroethane:

$$C_a = [10^{-6} \cdot 1000 \text{ (ug/mg)} \cdot 70 \text{ (kg)} \cdot 70 \text{ (kg)}] / [0.20 \text{ (mg/kg/day)} \cdot 1 \cdot 20 \text{ (m}^3/\text{day)} \cdot 1 \cdot 70 \text{ (yrs)}] = 175 \text{ ug/m}^3$$

where:

C_a = action level in air (ug/m³)

R = 10^{-6} (1,1,2,2-Tetrachloroethane is a Class C carcinogen)

W = 70 kg adult

L/T = 70 year lifetime

CSF = 0.20 (mg/kg/day)⁻¹

I = 20 m³/day

A = 1

ED = 70 year exposure duration

III. Sample Calculation for Hazardous Constituents in Water

A. Systemic Toxicants

Sample calculation for toluene:

$$C_w = [0.30 \text{ (mg/kg/day)} \cdot 70 \text{ (kg)}] / [2 \text{ (L/day)} \cdot 1] = 10.5 \text{ mg/L}$$

where:

C_w = action level in water (mg/L)

RfD = 0.30 mg/kg/day for toluene

W = 70 kg adult

I = 2 L/day

A = 1

B. Carcinogenic Constituents

Sample calculation for 1,1,2,2-tetrachloroethane:

$$C_w = [10^{-6} \cdot 70 \text{ (kg)} \cdot 70 \text{ (yr)}] / [0.20 \text{ (mg/kg/day)} \cdot 1 \cdot 2 \text{ (L/day)} \cdot 1 \cdot 70 \text{ (yr)}] = 1.75 \text{E-03 mg/L}$$

where:

C_w = action level in water (mg/L)

$R = 10^{-6}$ (1,1,2,2-Tetrachloroethane is a Class C carcinogen)

W = 70 kg adult

LT = 70 year lifetime

CSF = 0.20 (mg/kg/day)⁻¹

I = 2 L/day

A = 1

ED = 70 year exposure duration

IV. Sample Calculations for Hazardous Constituents in Soils

A. Systemic Toxicants

Example calculations for toluene:

$$C_s = [0.30 \text{ (mg/kg/day)} \cdot 10 \text{ (kg)}] / [0.2 \text{ (g/day)} \cdot 1 \cdot 0.001 \text{ (kg/g)}] = 24.000 \text{ mg/kg}$$

where:

C_s = action level in soil (mg/kg)

RfD = 0.30 mg/kg/day for toluene

W = 10 kg (5 year old child)

I = 0.2 g/day

A = 1

B. Carcinogenic Constituents

Sample calculation for 1,1,2,2-tetrachloroethane:

$$C_s = [10^{-6} \cdot 70 \text{ (kg)} \cdot 70 \text{ (yr)}] / [0.20 \text{ (mg/kg/day)} \cdot 1 \cdot 0.1 \text{ (g/day)} \cdot 0.001 \text{ (kg/g)} \cdot 1 \cdot 70 \text{ (yr)}] = 35.0 \text{ mg/kg}$$

where:

C_s = action level in soil (mg/kg)

$R = 10^{-6}$ (1,1,2,2-tetrachloroethane is a Class C carcinogen)

W = 70 kg adult

LT = 70 year lifetime

CSF = 0.20 (mg/kg/day)⁻¹

I = 0.1 g/day

A = 1

ED = 70 year exposure duration

APPENDIX F—LIST OF CONSTITUENTS SHOWING ACTION LEVEL SOURCE DATA

Constituent name	Class	Noncarcinogenic effects		Carcinogenic effects	
		Oral RfD (mg/kg/d)	Inhalation RfD (mg/kg/d)	Oral slope factor (mg/kg/d) ⁻¹	Inhalation slope factor (mg/kg/d) ⁻¹
Acetone	D	1.0E-01			
Acetonitrile	D	6.0E-03			
Acetophenone	D	1.0E-01	5.0E-05		
Acrylamide	B2	2.0E-04		4.5E-00	4.5E-00
Acrylonitrile	B1			5.4E-01	2.4E-01
Aldcarb	D	1.3E-03			
Aldrin	B2	3.0E-05		1.7E+01	1.7E+01
Allyl alcohol	D	5.0E-03			
Aluminum phosphide	D	4.0E-04			
Aniline	B2			5.7E-03	
Antimony	D	4.0E-04			
Arsenic	A	1.0E-03			5.0E+01
Asbestos (S)	A				2.3E-01
Barium cyanide	D	7.0E-02			
Barium, toxic	D	5.0E-02	1.0E-04		
Benzidine	A	3.0E-03		2.3E+02	2.3E+02
Benzene	B2	5.0E-03		4.3E-00	8.4E-00
Beryllium	B2	2.0E-02		1.4E-02	1.4E-02
Bis(2-ethylhexyl)phthalate	B2			1.1E-00	1.1E-00
Bis(chloroethyl)ether	B2	2.0E-02		1.3E-00	
Bromodichloromethane	D	2.0E-02			
Bromofarm	D	1.4E-03	8.0E-03		
Bromomethane	C	2.0E-01			
Butyl benzyl phthalate	B1	5.0E-04			6.1E-03
Cadmium	D	4.0E-02			
Calcium cyanide	D	1.0E-01			
Carbon disulfide	B2	7.0E-04		1.3E-01	1.3E-01
Carbon tetrachloride	D	2.0E-03			
Chloral	B2	8.0E-05		1.3E-00	1.3E-00
Chlordane	D	5.0E-02			
Chlorine cyanide	D	2.0E-02	5.0E-03		
Chlorobenzene	B2	1.0E-02		6.1E-03	8.1E-02
Chloroform	D	5.0E-03			
2-Chlorophenol	A	5.0E-03			4.1E+01
Chromium (VI)	D	5.0E-03			
Copper cyanide	D	5.0E-02			
m-Cresol	D	5.0E-02			
o-Cresol	D	5.0E-02			
p-Cresol	D	2.0E-02			
Cyanide	D	4.0E-02			
Cyanogen	D	9.0E-02			
Cyanogen bromide	B2			2.4E-01	
DDD	B2			3.4E-01	
DDT	B2	5.0E-04		3.4E-01	3.4E-01
DOT	D	1.0E-01			
Dibutyl phthalate	B2			5.4E-00	5.4E-00
Diethyl nitrosamine	B2			4.5E-01	
1,3-Dichlorobenzene	D	2.0E-01	5.0E-02		
1,1-Dichloroethene	B2			9.1E-02	9.1E-02
1,2-Dichloroethane	C	9.0E-03		6.0E-01	1.2E-00
1,1-Dichloroethene	D	3.0E-03			
2,4-Dichlorophenol	D	1.0E-02			
2,4-Dichlorophenoxyacetic acid	B2	3.0E-04			
1,3-Dichloropropene	B2	5.0E-05		1.6E+01	1.6E+01
Dieldrin	D	8.0E-01			
Diethyl phthalate	B2			1.5E+02	1.5E+02
Diethylnitrosamine					

APPENDIX F—LIST OF CONSTITUENTS SHOWING ACTION LEVEL SOURCE DATA—Continued

Constituent name	Class	Noncarcinogenic effects		Carcinogenic effects	
		Oral RFD (mg/kg/d)	Inhalation RFD (mg/kg/d)	Oral slope factor (mg/kg/d) ⁻¹	Inhalation slope factor (mg/kg/d) ⁻¹
Dimethoate	D	2.0E-02			
Dimethylnitrosamine	B2			5.1E+01	5.1E+01
m-Dinitrobenzene	D	1.0E-04			
2,4-Dinitrophenol	D	2.0E-03			
2,3-Dinitrotoluene (and 2,6-, mixture)	B2			6.8E-01	
1,4-Dioxane	B2			1.1E-02	
Diphenylamine	D	2.5E-02			
1,2-Diphenylhydrazine	B2			8.0E-01	8.0E-01
Dsulfoton	D	4.0E-05			
Endosulfan	D	5.0E-05			
Endosulfan	D	2.0E-02			
Endrin	D	3.0E-04			
Epichlorohydrin	B2	2.0E-03		9.9E-03	4.2E-03
Ethylbenzene	D	1.0E-01			
Ethylene dibromide	B2			8.5E+01	7.6E-01
Formaldehyde	B1				4.5E-02
Formic acid	D	2.0E-00			
Glycidialdehyde	D	4.0E-04			
Heptachlor	B2	5.0E-04		4.6E-00	4.5E-00
Heptachlor epoxide	B2	1.3E-05		9.1E-00	9.1E-00
Hexachlorobenzene-p-dioxin	B2			6.2E+03	6.2E+03
Hexachlorobutadiene	C	2.0E-03		7.8E-02	7.8E-02
alpha-Hexachlorocyclohexane	B2			6.3E-00	6.3E-00
beta-Hexachlorocyclohexane	C			1.8E-00	1.8E-00
Hexachlorocyclopentadiene	D	7.0E-03	2.0E-05		
Hexachloroethane	C	1.0E-03		1.4E-02	1.4E-02
Hexachlorophene	D	3.0E-04			
Hydrazine	B2			3.0E-00	1.7E+01
Hydrogen cyanide	D	2.0E-02			
Hydrogen sulfide	D	3.0E-03			
Isobutyl alcohol	D	3.0E-01			
Isophorone	C	2.0E-01		4.1E-03	
Lead	B2				
Lindane (gamma-hexachlorocyclohexane)	B2/C	3.0E-04		1.3E-00	
m-Phenylenediamine	D	6.0E-03			
Maleic anhydride	D	1.0E-01			
Maleic hydrazide	D	5.0E-01			
Mercury (inorganic)	D	3.0E-04			
Methacrylonitrile	D	1.0E-04	2.0E-04		
Methanol	D	2.5E-02			
Methyl chloroacetate	D				
Methyl ethyl ketone	D	5.0E-02	8.0E-02		
Methyl isobutyl ketone	D	5.0E-02	2.0E-02		
Methyl parathion	D	2.5E-04			
Methylene chloride	B	6.0E-02		7.5E-03	1.4E-02
n-Nitrosodimethylamine	B2			5.4E-00	5.4E-00
n-Nitrosodiphenylamine	B				
n-Nitrosodipropylamine	B2			2.2E+01	
n-Nitrosodipropylamine	B2			7.0E-00	
n-Nitrosodipropylamine	B2			2.8E-00	
n-Nitrosodipropylamine	B2			4.9E-03	
n-Nitrosodipropylamine	B2			2.1E-00	2.1E-00
Nickel	D	2.0E-02			
Nickel refinery dust	A				8.4E-01
Nitric oxide	D	1.0E-01			
Nitrobenzene	D	5.0E-04	6.0E-04		
Nitrogen dioxide	D	1.0E-05			
Osmium tetroxide	C	6.0E-03			
Permethrin	D	8.0E-04			
Pentafluorobenzene	C	3.0E-03			2.5E-01
Pentachloronitrobenzene	D	3.0E-02			
Pentachlorophenol	D	6.0E-01			
Phenol	D	8.0E-05			
Phenyl mercuric acetate	D	3.0E-04			
Phosphine	D	2.0E-00			
Phthalic anhydride	B2			7.7E-00	
Polychlorinated biphenyls	D	5.0E-02			
Potassium cyanide	D	2.0E-01			
Potassium silver cyanide	D	7.5E-02			
Pronoxide	D	1.0E-03			
Pyridine	D	3.0E-03			
Selenous acid	D	5.0E-03			
Selenourea	D	3.0E-03			
Silver	D	1.0E-01			
Silver cyanide	D	4.0E-02			
Sodium cyanide	D				

APPENDIX F—LIST OF CONSTITUENTS SHOWING ACTION LEVEL SOURCE DATA—Continued

Constituent name	Class	Noncarcinogenic effects		Carcinogenic effects	
		Oral RFD (mg/kg/d)	Inhalation RFD (mg/kg/d)	Oral slope factor (mg/kg/d) ⁻¹	Inhalation slope factor (mg/kg/d) ⁻¹
Strychnine	D	3.0E-04			
Styrene	C	2.0E-01			
1,1,1,2-Tetrachloroethane	D	3.0E-02		2.6E-02	2.6E-02
1,2,4,5-Tetrachlorobenzene	D	3.0E-04			
1,1,1,2-Tetrachloroethane	C	3.0E-02		2.6E-02	2.6E-02
1,1,2,2-Tetrachloroethane	C			2.0E-01	2.0E-01
Tetrachloroethylene	B2	1.0E-02		5.1E-02	3.3E-03
Tetrachloroethylene	D	3.0E-02			
2,3,4,6-Tetrachlorophenol	D	1.0E-07			
Tetraethyl lead	D	5.0E-04			
Tetraethylthiopyrophosphate	D	7.0E-05			
Thallic oxide	D	9.0E-06			
Thallium acetate	D	8.0E-06			
Thallium carbonate	D	8.0E-06			
Thallium chloride	D	9.0E-06			
Thallium nitrate	D	8.0E-06			
Thallium sulfate	D	6.0E-03			
Thiosemicarbazide	D	5.0E-03			
Thiram	D	3.0E-01	2.0E-00		
Toluene	B2			1.1E-00	1.1E-00
Tosaphene	D	2.0E-02	3.0E-03		
1,2,4-Trichlorobenzene	D	9.0E-02	3.0E-01		
1,1,1-Trichloroethane	C	4.0E-03		5.7E-02	5.7E-02
1,1,2-Trichloroethane	B2			1.1E-02	
Trichloroethylene	D	3.0E-01	2.0E-01		
Trichloromonofluoromethane	D	1.0E-01			
2,4,5-Trichlorophenol	B2			2.0E-02	2.0E-02
2,4,6-Trichlorophenol	D	1.0E-02			
2,4,5-Trichlorophenoxyacetic acid	D	6.0E-03			
1,2,3-Trichloropropene	D	9.0E-03			
Vanadium pentoxide	D	2.0E-00	3.0E-01		
Xylenes	D	5.0E-02			
Zinc cyanide	D	3.0E-04			
Zinc phosphide	D				

For the reasons set out in the preamble, 40 CFR parts 264, 265, 270, and 271 are proposed to be amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.1 is amended by revising paragraphs (d) and (g) introductory text to read as follows:

§ 264.1 Purpose, scope and applicability.

(d) The requirements of this part apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an Underground Injection control (UIC) program approved or promulgated under the Safe Drinking Water Act only to the extent they are required by § 144.14 of this chapter and to the extent they are included in a RCRA permit by

rule granted to such a person under part 270 of this chapter.

(g) Except as required under subpart S of this part governing releases from solid waste management units, the requirements of this part do not apply to:

§ 264.101 [Removed]

3. In 40 CFR part 264, subpart F, it is proposed to remove § 264.101.

4. In 40 CFR part 264, subpart G, it is proposed to amend § 264.113 by redesignating paragraphs (a)(1)(ii) as (a)(1)(iii) and (b)(1)(ii) as (b)(1)(iii), and by adding new paragraphs (a)(1)(ii) and (b)(1)(ii) to read as follows:

§ 264.113 Closure time allowed for closure.

(a) . . .

(1) . . .

(ii) Corrective action required at the unit or the facility under subpart S will delay the completion of partial or final closure: or

(b) . . .

(1) . . .

(ii) Corrective action required at the unit or the facility under subpart S will delay the completion of partial or final closure: or

5. 40 CFR part 264 is amended by adding subpart S to read as follows:

Subpart S—Corrective Action for Solid Waste Management Units

264.500 Purpose and applicability.

264.501 Definitions.

264.502–264.509 [Reserved].

264.510 Requirement to perform remedial investigations.

264.511 Scope of remedial investigations.

264.512 Plans for remedial investigations.

264.513 Reports of remedial investigations.

264.514 Determination of no further action.

264.515–264.519 [Reserved]

264.520 Requirement to perform corrective measure study.

264.521 Action levels.

264.522 Scope of corrective measure studies.

264.523 Plans for corrective measure studies.

264.524 Reports of corrective measure studies.

264.525 Selection of remedy

264.526 Permit modification for remedy.

264.527 Remedy design.

264.528 Progress reports.

264.529 Review of remedy implementation.

264.530 Completion of remedies.

204.531 Determination of technical impracticability.
 204.532-204.539 [Reserved]
 204.540 Interim measures.
 204.541-204.549 [Reserved]
 204.550 Management of wastes.
 204.551 Management of hazardous wastes.
 204.552 Management of non-hazardous solid wastes.
 204.553-204.559 [Reserved]
 204.560 Required notices.

Subpart S—Corrective Action for Solid Waste Management Units

§ 204.500 Purpose and applicability.

(a) The provisions of this subpart establish requirements for investigation and corrective action for releases of hazardous waste, including hazardous constituents, from solid waste management units.

(b) The owner or operator of a facility seeking a permit under subtitle C of RCRA must institute investigations and/or corrective action, as necessary to protect human health and the environment, for all releases of hazardous waste, including hazardous constituents, from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit.

(c) Requirements for investigations and/or corrective action will be specified in the permit. The permit will contain schedules of compliance for such investigations and/or corrective action (where such cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

(d) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Regional Administrator that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner or operator is not relieved of responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completing such corrective action must be provided.

(e) For protection of ground water from landfills, surface impoundments, land treatment units, and waste piles that received listed or identified hazardous waste after July 26, 1982, the provisions of this subpart apply only as specifically provided herein.

(f) The provisions of this subpart do not apply to:

- (1) Permits for land treatment demonstrations using field test or laboratory analyses (see § 270.63).
- (2) Emergency permits (see § 270.61).
- (3) Permits by rule for ocean disposal barges or vessels (see § 270.60(a)).
- (4) Research, development, and demonstration permits (see § 270.65).

§ 204.501 Definitions.

For the purpose of complying with the requirements of this subpart, the following definitions apply:

Corrective Action Management Unit means a contiguous area within a facility as designated by the Regional Administrator for the purpose of implementing corrective action requirements of this subpart, which is contaminated by hazardous wastes (including hazardous constituents), and which may contain discrete, engineered land-based sub-units.

Facility means all contiguous property under the control of the owner or operator seeking a permit under subtitle C of RCRA.

Hazardous Constituent means any constituent identified in appendix VII of 40 CFR part 261, or any constituent identified in appendix IX of 40 CFR part 264.

Hazardous Waste means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituent as defined above.

Release means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

Solid Waste Management Unit means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

§ 204.502-204.509 [Reserved]

§ 204.510 Requirement to perform remedial investigations.

If the Regional Administrator determines that hazardous waste (including hazardous constituents) have been, are likely to have been, or, based on site-specific circumstances, are likely to be released into the environment from a solid waste management unit at the facility, the Regional Administrator may specify in the permit schedule of compliance that the permittee investigate and characterize solid waste management units and releases from solid waste management units at the facility.

§ 204.511 Scope of remedial investigations.

(a) Investigations required under § 204.510 shall characterize the nature, extent, direction, rate, movement and concentration of releases, as required by the Regional Administrator. In addition, such investigations may include, but are not limited to, the following:

(1) Characterizations of the environmental setting at the facility, including:

- (i) Hydrogeological conditions;
- (ii) Climatological conditions;
- (iii) Soil characteristics;
- (iv) Surface water and sediment quality and other characteristics; or
- (v) Air quality and meteorological conditions.

(2) Characterization of solid waste management units from which releases have been or may be occurring, including unit and waste characteristics.

(3) Descriptions of humans and environmental systems which are, may have been, or, based on site-specific circumstances, may be exposed to release(s).

(4) Information that will assist the Regional Administrator in assessing risks to human health and the environment from releases from solid waste management units.

(5) Extrapolations of future movement, degradation and fate of contaminants.

(6) Laboratory, bench-scale or pilot-scale tests or studies to determine the feasibility or effectiveness of treatment technologies or other technologies that may be appropriate in implementing remedies at the facility.

(7) Statistical analyses to aid in the interpretation of data required under § 204.510, in accordance with statistical methods approved by the Regional Administrator.

(b) Samples of ground water, surface water, soils, or air which are collected as part of remedial investigations

required under § 264.510 shall be analyzed for those constituents and parameters determined to be necessary by the Regional Administrator to accurately and adequately characterize the presence of hazardous wastes (including hazardous constituents) in the samples.

§ 264.512 Plans for remedial investigations.

(a) The Regional Administrator may require the permittee to develop and submit a plan(s) for conducting any remedial investigations required under § 264.510 of this subpart. Such plans shall be subject to review and approval or modification by the Regional Administrator, and shall be developed and submitted according to a schedule specified in the schedule of compliance. Such plans may include, but are not limited to, the following:

- (1) Overall approach, including objectives, schedules, and qualifications of personnel conducting investigations.
- (2) Technical and analytical approach and methods for investigations.
- (3) Quality assurance procedures, including:

- (i) Data collection strategy;
- (ii) Sampling, chain of custody procedures; and
- (iii) Methods of sample analysis.
- (4) Data management procedures, including formats for documenting analytical results and tracking sample custody, and other results of investigations.

(b) Upon approval or modification of the plan by the Regional Administrator, the plan shall be incorporated expressly or by reference as a part of the permit schedule of compliance. The permittee shall conduct the studies and investigations in accordance with the plan and any other requirements specified in the permit schedule of compliance.

§ 264.513 Reports of remedial investigations.

(a) The Regional Administrator may require periodic reports to be submitted by the permittee during remedial investigations required under § 264.510, and may, based on information from the investigations, or other information, require new or modified investigations. Such modifications will, if necessary, be specified by modifying the permit schedule of compliance.

(b) Upon conclusion of the remedial investigations, the permittee shall submit to the Regional Administrator for approval:

- (1) A final report describing the procedures, methods, and results of the remedial investigations, in such format

and containing such information as specified by the Regional Administrator; and

- (2) A summary of the report.

(c) If, upon receipt of the final report and summary, the Regional Administrator determines that the final report and summary do not fully satisfy the requirements for the report and summary specified in the permit schedule of compliance, or otherwise do not provide a full and accurate summary and description of the remedial investigations, the Regional Administrator may require the permittee to submit a revised report.

(d) Upon approval of the summary, the permittee shall mail it to all individuals on the facility mailing list (required under § 124.10(c)(1)(viii)).

(e) All raw data, such as laboratory reports, drilling logs and other supporting information generated from investigations required under § 264.510 shall be maintained at the facility (or other location approved by the Regional Administrator) during the term of the permit, including any reissued permit.

§ 264.514 Determination of no further action.

(a)(1) Based on the results of investigations required under § 264.510 or other relevant information the permittee may submit an application to the Regional Administrator for a permit modification to terminate the schedule of compliance for corrective action, according to the procedures for Class III permit modifications under § 270.42.

(2) The permit modification application must contain information demonstrating that there are no releases of hazardous waste (including hazardous constituents) from solid waste management units at the facility that may pose a threat to human health or the environment.

(b) If the Regional Administrator, upon review of the request for a permit modification, reports submitted under § 264.513, or other information, determines that there is no such threat to human health and the environment from releases from solid waste management units at the facility, the Regional Administrator shall grant the permit modification according to the procedures of § 270.42.

(c) Any determination made pursuant to § 264.514(b) will not affect the authority or responsibility of the Regional Administrator to:

- (1) Modify the permit at a later date to require the permittee to perform such investigations and studies as may be necessary to comply with the requirements of this Subpart, if new information or subsequent analysis

indicates that there are, or are likely to be, releases from solid waste management units at the facility that may pose a threat to human health or the environment; or

(2) Require continued or periodic monitoring under the terms of the permit if the Regional Administrator determines, based on site-specific circumstances, that releases are likely to occur.

§§ 264.515-264.519 (Reserved)

§ 264.520 Requirement to perform corrective measure study.

(a) If at any time the Regional Administrator determines that concentrations of hazardous constituents in ground water in an aquifer, surface water, soils, or air exceed an action level (as defined under § 264.521), and there is reason to believe that such hazardous constituents have been released from a solid waste management unit at the facility, the Regional Administrator shall require as part of the permit schedule of compliance that the permittee perform a corrective measure study, according to the requirements of §§ 264.522-264.524, except as otherwise provided under § 264.520(c).

(b) If the Regional Administrator determines that a constituent(s) present in a concentration below an action level (as defined under § 264.521) may pose a threat to human health or the environment, given site-specific exposure conditions, and there is reason to believe that the constituent(s) has been released from a solid waste management unit at the facility, the Regional Administrator may require a corrective measure study according to the requirements of §§ 264.522-264.524.

(c) If an action level has been exceeded (as provided under § 264.520(a)), but the Regional Administrator determines that the release(s) may nevertheless not pose a threat to human health and the environment, the Regional Administrator may allow the permittee to apply for a determination of no further action, according to § 264.514.

(d) The Regional Administrator shall notify the permittee in writing of the requirement to conduct a corrective measure study. This notice shall identify the hazardous constituent(s) which exceed action levels defined under § 264.521, as well as any hazardous constituent(s) identified pursuant to § 264.520(b).

(e) For purposes of §§ 264.520, 264.521, 264.522 (d) and (e), the term "constituent" refers to hazardous

constituents, as defined in § 264.501, as well as other hazardous wastes (as defined in § 264.501) that are single chemical constituents.

§ 264.521 Action levels.

Action levels are defined as follows:

(a) Action levels for constituents in ground water in an aquifer which the Regional Administrator has reason to believe may have been released from a solid waste management unit at the facility shall be concentration levels specified as:

(1) Maximum contaminant levels (MCLs) promulgated under § 141.2 of the Safe Drinking Water Act (40 CFR part 141 subpart B); or

(2) For constituents for which MCLs have not been promulgated, a concentration which satisfies the following criteria, assuming exposure through consumption of the water contaminated with the constituent:

(i) Is derived in a manner consistent with Agency guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028); and

(ii) Is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards (40 CFR part 792), or equivalent; and

(iii) For carcinogens, represents a concentration associated with an excess upper bound lifetime cancer risk of 1×10^{-6} due to continuous constant lifetime exposure, and considers the overall weight of evidence for carcinogenicity; and

(iv) For systemic toxicants, represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime.

(b) Action levels for constituents in air which the Regional Administrator has reason to believe may have been released from a solid waste management unit at the facility shall be defined as concentrations which meet the criteria specified in § 264.521(a)(2)(i)-(iv), assuming exposure through inhalation of the air contaminated with the constituent, as measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

(c) Action levels for constituents in surface water which the Regional Administrator has reason to believe may have been released from a solid waste management unit at the facility shall be specified as:

(1) Water Quality Standards established pursuant to section 303(c) of the Clean Water Act (40 CFR part 131) by the State in which the facility is located, where such standards are expressed as numeric values; or

(2) Numeric interpretations of State narrative water quality standards, if appropriate, where water quality standards expressed as numeric values have not been established by the State; or

(3) MCLs promulgated under the Safe Drinking Water Act for constituents in surface waters designated by the State for drinking water supply, where numeric values or numeric interpretations, described in paragraphs (1) and (2), are not available; or

(4) For constituents in surface waters designated by the State for drinking water supply for which numeric values, numeric interpretations, or MCLs (as described in paragraphs 1-3 above) are not available, a concentration which meets the criteria specified in § 264.521(a)(2)(i)-(iv), assuming exposure through consumption of the water contaminated with the constituent; or

(5) For constituents in surface waters designated for a use or uses other than drinking water supply and for which numeric values or numeric interpretations (as described in paragraphs (1) and (2) above) have not been established, a concentration established by the Regional Administrator which meets the criteria specified in § 264.521(a)(2)(i)-(iv), considering the use or uses of the receiving waters.

(d) Action levels for constituents in soils that the Regional Administrator has reason to believe may have been released from a solid waste management unit at the facility shall be defined as concentrations which meet the criteria specified in § 264.521(a)(2)(i)-(iv), assuming exposure through consumption of the soil contaminated with the constituent.

(e) If, for a constituent(s) detected in ground water in an aquifer, air, surface water or soils, a concentration level that meets the criteria of § 264.521(a)-(d) is not available, the Regional Administrator may establish an action level for the constituent as:

(1) A level that is an indicator for protection of human health and the environment, using the exposure assumptions for the medium specified under § 264.521(a)-(d); or

(2) The background concentration of the constituent.

§ 264.522 Scope of corrective measure studies.

(a) As determined by the Regional Administrator, corrective measure studies required under § 264.520 may include, but are not limited to, the following:

(1) Evaluation of performance, reliability, ease of implementation, and potential impacts of the remedy, including safety impacts, cross media impacts, and control of exposure to any residual contamination.

(2) Assessment of the effectiveness of potential remedies in achieving adequate control of sources and cleanup of the hazardous waste (including hazardous constituents) released from solid waste management units.

(3) Assessment of the time required to begin and complete the remedy.

(4) Estimation of the costs of remedy implementation.

(5) Assessment of institutional requirements, such as State or local permit requirements, or other environmental or public health requirements which may substantially affect implementation of the remedy(s).

(b) The Regional Administrator may require the permittee to evaluate as part of the corrective measure study one or more specific potential remedies. These remedies may include a specific technology or combination of technologies that, in the Regional Administrator's judgment, achieves or may achieve the standards for remedies specified in § 264.525(a) given appropriate consideration of the factors specified in § 264.525(b).

§ 264.523 Plans for corrective measure studies.

(a) The Regional Administrator may require the permittee to develop and submit a plan(s) for conducting a corrective measure study required under § 264.520. The plan shall be subject to review and approval or modification by the Regional Administrator, and shall be developed and submitted according to a schedule specified in the permit schedule of compliance. Such plans may include, but are not limited to, the following:

(1) Description of the general approach to investigating and evaluating potential remedies;

(2) Definition of the overall objectives of the study;

(3) Description of the specific remedy(s) which will be studied;

(4) Plans for evaluating remedies to ensure compliance with the standards for remedies specified in § 264.525(a);

(5) Schedules for conducting the study; and

(6) Proposed format for information presentation.

(b) Upon approval or modification of the corrective measure study plan by the Regional Administrator, the plan shall be incorporated expressly or by reference as part of the permit schedule of compliance. The permittee shall conduct the studies and investigations in accordance with the plan and any other requirements as specified in the permit schedule of compliance.

§ 264.524 Reports of corrective measure studies.

(a) The Regional Administrator may require periodic reports during the conduct of the corrective measure study, and may, based on information from these reports or other information, require the permittee to modify the corrective measure study. Such modifications will, if necessary, be specified by modifying the permit schedule of compliance.

(b) Upon completion of the corrective measure study, the permittee shall submit a report summarizing the results of the study. This report must include a detailed description of the remedies assessed pursuant to § 264.522 or § 264.524(a). The report shall describe how many proposed remedy(s) meets the standards for remedies as specified in § 264.525(a).

(c) Upon review of the corrective measure study report, the Regional Administrator may require the permittee to evaluate further, and report upon, one or more additional remedies, or develop particular elements of one or more proposed remedies. Such further requirements will, if necessary, be specified by modifying the permit schedule of compliance.

§ 264.525 Selection of remedy.

Based on the results of the corrective measure study, and any further evaluations conducted under § 264.524(c), the Regional Administrator shall, except as otherwise provided under paragraph (f) of this section, select a remedy that, at a minimum, meets the standards listed in paragraph (a) of this section.

(a) *Standards for remedies.* Remedies must:

- (1) Be protective of human health and the environment;
- (2) Attain media cleanup standards as specified pursuant to paragraphs (d) and (e) of this section;
- (3) Control the source(s) of releases so as to reduce or eliminate, to the extent practicable, further releases of hazardous wastes (including hazardous constituents) that may pose a threat to human health and the environment; and

(4) Comply with standards for management of wastes as specified in §§ 264.550-264.559 of this subpart.

(b) *Remedy selection factors.* In selecting a remedy which meets the standards of § 264.525(a), the Regional Administrator shall consider the following evaluation factors as appropriate:

(1) *Long-term reliability and effectiveness.* Any potential remedy(s) may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the remedy will prove successful. Factors that shall be considered in this evaluation include:

(i) Magnitude of residual risks in terms of amounts and concentrations of waste remaining following implementation of a remedy, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes (including hazardous constituents);

(ii) The type and degree of long-term management required, including monitoring and operation and maintenance;

(iii) Potential for exposure of humans and environmental receptors to remaining wastes;

(iv) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals; and

(v) Potential need for replacement of the remedy.

(2) *Reduction of toxicity, mobility or volume.* A potential remedy(s) may be assessed as to the degree to which it employs treatment that reduces toxicity, mobility or volume of hazardous wastes (including hazardous constituents). Factors that shall be considered in such assessments include:

(i) The treatment processes the remedy(s) employs and materials it would treat;

(ii) The amount of hazardous wastes (including hazardous constituents) that would be destroyed or treated;

(iii) The degree to which the treatment is irreversible;

(iv) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes (including hazardous constituents).

(3) The short-term effectiveness of a potential remedy(s) may be assessed considering the following:

(i) Magnitude of reduction of existing risks;

(ii) Short-term risks that might be posed to the community, workers, or the environment during implementation of

such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redispersion or containment;

(iii) Time until full protection is achieved.

(4) *Implementability.* The ease or difficulty of implementing a potential remedy(s) may be assessed by considering the following types of factors:

(i) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists;

(v) Available capacity and location of needed treatment, storage and disposal services.

(5) *Cost.* The types of costs that may be assessed include the following:

(i) Capital costs;

(ii) Operation and maintenance costs;

(iii) Net present value of capital and operation and maintenance costs;

(iv) Potential future remedial action costs.

(c) *Schedule for remedy.* The Regional Administrator shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. The Regional Administrator will consider the following factors in determining the schedule of remedial activities:

(1) Extent and nature of contamination.

(2) Practical capabilities of remedial technologies in achieving compliance with media cleanup standards, and other objectives of the remedy.

(3) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy.

(4) Desirability of utilizing technologies which are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives.

(5) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy.

(6) Other relevant factors.

(d) *Media Cleanup Standards.* Except as otherwise provided by § 264.525(d)(2), the Regional Administrator shall specify in the selected remedy requirements for remediation of contaminated media as follows:

(1) Regional Administrator shall specify concentration levels of hazardous constituents in ground water, surface water, air or soils that the remedy must achieve, as necessary to protect human health and the environment. Such media cleanup standards will be established by the Regional Administrator as follows:

(i) The cleanup standard(s) shall be concentration levels in the affected media which protect human health and the environment.

(ii) Unless a lower concentration level is deemed necessary to protect environmental receptors, cleanup standards shall be established as follows:

(A) For known or suspected carcinogens, cleanup standards shall be established at concentration levels which represent an excess upperbound lifetime risk to an individual of between 1×10^{-6} and 1×10^{-4} . The Regional Administrator shall use the 1×10^{-6} risk level as the point of departure in establishing such concentration levels.

(B) For systemic toxicants, cleanup standards shall represent concentration levels to which the human population (including sensitive subgroups) could be exposed on a daily basis without appreciable risk of deleterious effect during a lifetime.

(iii) In establishing media cleanup standards which meet the requirements of § 264.525(d)(1) (i) and (ii), above, the Regional Administrator may consider the following:

(A) Multiple contaminants in the medium;

(B) Exposure threats to sensitive environmental receptors;

(C) Other site-specific exposure or potential exposure to contaminated media;

(D) The reliability, effectiveness, practicability, or other relevant features of the remedy.

(iv) For ground water and surface water that is a current or potential source of drinking water, the Regional Administrator shall consider maximum contaminant levels promulgated under section 141.2 of the Safe Drinking Water Act (40 CFR part 141 subpart B) in establishing media cleanup standards.

(v) If the permittee can demonstrate to the satisfaction of the Regional Administrator that a specific concentration of a constituent in a medium at the facility is naturally occurring or from a source other than a solid waste management unit at the facility, the cleanup level established under this Subpart for the constituent in the medium shall not be below that specific concentration, unless the Regional Administrator establishes that:

(A) Remediation to levels below that specified concentration is necessary to protect human health and the environment; and

(B) Such remediation is in connection with an areawide cleanup under RCRA or other authorities.

(2) The Regional Administrator may determine that remediation of a release of a constituent from a solid waste management unit to a media cleanup standard established pursuant to § 264.525(d)(1) is not necessary if the permittee demonstrates to the Regional Administrator's satisfaction that:

(i) The affected medium is also contaminated by substances that are naturally occurring or have originated from a source other than a solid waste management unit at the facility, and those substances are present in concentrations such that remediation of the release from the solid waste management unit would provide no significant reduction in risks to actual or potential receptors; or

(ii) The constituent(s) is present in ground water that:

(A) Is not a current or potential source of drinking water, and

(B) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) greater than an action level(s) specified according to § 264.522; or

(iii) Remediation of the release(s) to media cleanup standards is technically impracticable.

(3) If a determination is made pursuant to paragraph (d)(2) of this section the Regional Administrator may require any alternative measure(s) or standards he or she determines are necessary to protect human health and the environment, including the control of further releases.

(e) *Compliance with media cleanup standards.* The Regional Administrator shall specify in the remedy requirements for achieving compliance with the media cleanup standards established under § 264.525(d) (or alternative levels under § 264.525(d)(1)(v) or (d)(3)), as follows:

(1) The Regional Administrator shall specify where compliance with such standards or levels must be achieved, as follows:

(i) For ground water, the cleanup standard(s) or levels shall be achieved throughout the contaminated ground water, or, at the Regional Administrator's discretion, when waste is left in place, up to the boundary of a waste management area encompassing the original source(s) of release.

The Regional Administrator shall specify the locations at which ground-

water monitoring wells must be located for purposes of:

(A) Monitoring the effectiveness of the ground-water remediation program; and

(B) Demonstrating compliance with the ground-water cleanup standard(s) or level(s).

(ii) For air, the cleanup standard(s) or level(s) shall be achieved at the location of the most exposed individual, or other specified point(s) of exposure closer to the source of the release, if determined by the Regional Administrator to be necessary to protect human health and the environment. The Regional Administrator shall specify locations where air monitoring devices must be installed, or what emission modeling or testing, atmospheric dispersion models, or other methods must be used to demonstrate that compliance with any air cleanup standard(s) or level(s) has been achieved at the point(s) of exposure.

(iii) For surface water, the cleanup standard(s) or level(s) shall be achieved at the point where the release(s) enters the surface water. For releases that have accumulated in surface water sediments, the Regional Administrator may, as necessary to protect human health and the environment, require that a cleanup standard(s) or level(s) be achieved at designated locations in the sediments. The Regional Administrator will specify the locations where surface water or sediment samples must be taken to monitor surface water quality and demonstrate that compliance with any surface water cleanup standard(s) or level(s) has been achieved.

(iv) For soils, the cleanup standard(s) shall be achieved at any point where direct contact exposure to the soils may occur. The Regional Administrator will specify the locations, or methods for determining appropriate locations, where soil samples must be taken to demonstrate compliance with the soil cleanup standard(s) or level(s).

(v) If the owner/operator is unable to obtain the necessary permission to undertake corrective action beyond the facility boundary, and can demonstrate to the satisfaction of the Regional Administration that despite the owner/operator's best efforts, she is as a result unable to achieve media cleanup standards or levels beyond the facility boundary, then media cleanup standards or levels must be achieved to the extent practicable, as specified by the Regional Administrator.

(2) The Regional Administrator will specify in the remedy the sampling and analytical methods, any statistical analyses that may be required, and the frequency(s) of sampling or monitoring

that may be required to characterize levels of hazardous constituents in ground water, surface water, air or soils.

(3) The Regional Administrator will specify in the remedy the length of time during which the permittee must, in order to achieve compliance with a media cleanup standard or level, demonstrate that concentrations of hazardous constituents have not exceeded the standard(s). Factors that may be considered by the Regional Administrator in determining these timing requirements include:

- (i) Extent and concentration of the release(s);
- (ii) Behavior characteristics of the hazardous constituents in the affected medium;
- (iii) Accuracy of monitoring or modeling techniques;
- (iv) Characteristics of the affected media; and
- (v) Seasonal, meteorological, or other environmental variabilities which may affect the accuracy of monitoring or modeling results.

(f) Conditional remedies. (1) If the criteria of § 264.525(f)(2) are met, the Regional Administrator may select a conditional remedy that protects human health and the environment under plausible exposure conditions during the term of the permit.

(2) A conditional remedy must:

- (i) Protect human health and the environment; and
- (ii) Achieve all media cleanup standards or levels as specified pursuant to paragraphs (d) and (e) of this section beyond the facility boundary as soon as practicable; and
- (iii) Prevent further significant environmental degradation by implementing, as soon as practicable:
 - (A) treatment or other necessary engineering controls to control any source(s) of releases; and
 - (B) engineered measures as necessary to prevent further significant migration of releases within the facility boundary.
- (iv) Institute effective institutional or other controls to prevent any significant exposure to hazardous wastes at the facility; and
- (v) Continue the monitoring of releases so as to determine whether further significant environmental degradation occurs; and
- (vi) Include assurances of financial responsibility for the remedy; and
- (vii) Comply with standards for management of wastes as specified in §§ 264.550-264.559 of this subpart.

(3) If at any time during the term of the permit, any condition of paragraph (f)(2) of this section is violated, the Regional Administrator shall modify the permit to:

(i) Require the permittee to perform additional studies or actions, or implement additional controls to achieve compliance with the requirements of paragraph (f)(2) of this section; or

(ii) Require additional studies, actions, or controls as necessary to implement a remedy which meets the standards of § 264.525(a).

(4) The permit shall not be terminated until a remedy which meets the standards of § 264.525(a) has been implemented and certified complete according to § 264.530.

§ 264.526 Permit modification for remedy.

(a) The Regional Administrator shall modify the permit to specify the remedy selected according to § 264.525, according to the procedures for major permit modifications under § 270.41.

(b) The permit modification shall include, at a minimum, the following:

(1) Description of the technical features of the remedy that are necessary for achieving the standards for remedies specified in § 264.525(a) and/or (f).

(2) All media cleanup standards established pursuant to § 264.525(d).

(3) Requirements for achieving compliance with media cleanup standards, pursuant to § 264.525(e).

(4) Requirements for complying with the standards for management of wastes, pursuant to §§ 264.550-264.559.

(5) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the remedy.

(6) A schedule for initiating and completing the major technical features and milestones of the remedy.

(7) Requirements for submission of reports and other information.

(c)(1) The schedule of compliance specified in the permit modification shall include a schedule for the permittee to demonstrate financial assurance for completing the remedy specified according to § 264.526(b). The schedule shall require the demonstration no later than 120 days after the effective date of the permit modification.

(2) If the remedy requires closure of a hazardous waste management unit, and the schedule of compliance for the remedy supplants or modifies the unit's closure or post-closure plan, the Regional Administrator may partially or fully release existing financial assurance for closure, post-closure, and third party liability required under §§ 264.143, 264.145, and 264.147. Such releases shall not be effective until the financial assurance requirements at § 264.520(c)(1) are satisfied.

(d) A remedy specified in a permit modification may be separated into phases. A remedy phase may consist of any set of actions performed over time, or any actions that are concurrent but located at different areas, provided that the actions are consistent with the final remedy.

§ 264.527 Remedy design.

(a) The Regional Administrator may require the permittee, upon modification of the permit according to § 264.526, to prepare detailed construction plans and specifications to implement the approved remedy at the facility, unless such plans and specifications have already been specified in the permit modification. Such plans shall be subject to review and approval or modification by the Regional Administrator, and shall be developed and submitted in accordance with the permit schedule of compliance. Upon approval by the Regional Administrator, the plan shall be incorporated expressly or by reference into part of the permit schedule of compliance. The plans and specifications must include, but are not limited to, the following:

(1) Designs and specifications for units in which hazardous wastes and non-hazardous solid wastes will be managed, as specified in the approved remedy.

(2) Implementation and long term maintenance plans.

(3) Project schedule.

(4) Construction quality assurance program.

(b) Upon approval of the plans and specifications for the remedy, the permittee shall—

(1) Implement the remedy in accordance with the plans and specifications, and consistent with the objectives of the remedy specified in the permit;

(2) Place the plans and specifications in the information repository, if required under § 270.36;

(3) Provide written notice of the availability for inspection of the approved plans and specifications for the remedy to all individuals on the facility mailing list. If an information repository has not been required pursuant to § 270.36, the notice shall specify where the plans and specifications are available for inspection; and

(4) Revise the cost estimate used to demonstrate financial assurance under § 264.526(c), if necessary.

§ 264.528 Progress reports.

(a) The permittee may be required by the Regional Administrator to provide

progress reports during the design, construction, operation and maintenance of any remedy. Frequency and format of reports shall be determined by the Regional Administrator and specified in the permit schedule of compliance. Such reports may include, but are not limited to:

(1) Summaries of progress of remedy implementation, including results of monitoring and sampling activities, progress in meeting media cleanup standards, and description of other remediation activities.

(2) Problems encountered during the reporting period, and actions taken or proposed to resolve the problems

(3) Changes in personnel conducting or managing the remedial effort.

(4) Project work for next reporting period.

(5) Copies of laboratory reports and field sampling reports.

(b) All raw data, such as laboratory reports, drilling logs and other supporting information generated from the remedial activities shall be maintained at the facility (or other location approved by the Regional Administrator) during the life of the permit, including the term of any reissued permits.

§ 264.529 Review of remedy implementation.

The Regional Administrator shall periodically review the progress of the remedy. Based on such review, the Regional Administrator may modify the permit schedule of compliance to require additional remedial measures to ensure prompt completion, safety, effectiveness, protectiveness, or reliability of the remedy.

§ 264.530 Completion of remedies.

(a) Remedies specified pursuant to § 264.526 shall be considered complete when the Regional Administrator determines that:

(1) Compliance with all media cleanup standards (or alternate levels) as specified in the permit have been achieved, according to the requirements of § 264.525(e); and

(2) All actions required to control the source(s) of contamination have been satisfied; and

(3) Procedures specified for removal, decontamination, closure, or post-closure care of units, equipment, devices or structures required to implement the remedy have been complied with.

(b) Upon completion of the remedy, the permittee shall submit to the Regional Administrator, by registered mail, a request for termination of the corrective action schedule of

compliance according to the procedures for Class III modifications in § 270.42. The request shall include a certification that the remedy has been completed in accordance with the requirements of § 264.530(a), and that all other terms and conditions specified in the permit pursuant to Subpart S have been satisfied. The certification must be signed by the permittee and by an independent professional(s) skilled in the appropriate technical discipline(s).

(c) When, upon receipt of the certification, and in consideration of public comments and any other relevant information, the Regional Administrator determines that the corrective measure remedy has been completed in accordance with the terms and conditions of the permit and the requirements for remedy completion under § 264.530(a), the Regional Administrator shall:

(1) Modify the permit to terminate the corrective action schedule of compliance, according to the Class III procedures of § 270.42.

(2) Upon modification of the permit, release the permittee from the requirements for financial assurance for corrective action under § 264.500(c) and § 264.90.

(d) If a remedy includes one or more identified phases, the Regional Administrator may:

(1) Require separate certification that the remedy phase has been completed as specified in the permit, to be signed by the permittee and an independent professional(s) skilled in the appropriate technical discipline(s); and

(2) Release the permittee from the requirements for financial assurance for that remedy phase, if the Regional Administrator determines that the remedy phase has been successfully completed.

§ 264.531 Determination of technical impracticability.

(a) The Regional Administrator may determine, based on information developed by the permittee or other information, that compliance with a requirement(s) for the remedy is not technically practicable. In making such determinations, the Regional Administrator shall consider:

(1) The permittee's efforts to achieve compliance with the requirement(s); and

(2) Whether other currently available or new and innovative methods or technologies could practicably achieve compliance with the requirements.

(b) If the Regional Administrator determines that compliance with a remedy requirement is not technically practicable, the Regional Administrator shall modify the permit schedule of

compliance to specify as necessary and appropriate:

(1) Further measures that may be required of the permittee to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and

(2) Alternate levels or measures for cleaning up contaminated media, controlling the source(s) of contamination, or for removal or decontamination of equipment, units, devices, or structures required to implement the remedy which:

(i) Are technically practicable; and

(ii) Are consistent with the overall objectives of the remedy

§§ 264.532-264.539 [Reserved]

§ 264.540 Interim measures.

(a) If, at any time the Regional Administrator determines, based on consideration of the factors specified in § 264.540(b), that a release or, based on site-specific circumstances, a threatened release from a solid waste management unit(s) at the facility poses a threat to human health or the environment, the Regional Administrator may specify in the permit interim measures required of the permittee to abate, minimize, stabilize, mitigate, or eliminate the release(s) or threat of release(s).

(b) The following factors may be considered by the Regional Administrator in determining whether an interim measure(s) is required:

(1) Time required to develop and implement a final remedy;

(2) Actual or potential exposure of nearby populations or environmental receptors to hazardous wastes (including hazardous constituents);

(3) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(4) Further degradation of the medium which may occur if remedial action is not initiated expeditiously;

(5) Presence of hazardous wastes (including hazardous constituents) in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

(6) Presence of high levels of hazardous wastes (including hazardous constituents) in soils largely at or near the surface, that may migrate;

(7) Weather conditions that may cause hazardous wastes (including hazardous constituents) to migrate or be released;

(8) Risks of fire or explosion, or potential for exposure to hazardous wastes (including hazardous constituents) as a result of an accident

or failure of a container or handling system:

(9) Other situations that may pose threats to human health and the environment.

(c) If the Regional Administrator determines that an interim measure is necessary pursuant to § 264.540(a), the Regional Administrator shall notify the permittee of the necessary actions required. Such actions shall be implemented as soon as practicable, in accordance with a schedule as specified by the Regional Administrator. The Regional Administrator shall modify the permit schedule of compliance, if necessary, to require implementation of an interim measure, in accordance with the procedures of § 270.34 or § 270.41, as appropriate.

(d) Interim measures should, to the extent practicable, be consistent with the objectives of, and contribute to the performance of any remedy which may be required pursuant to § 264.525.

§ 264.541-649 [Reserved]

§ 264.550 Management of wastes.

(a) All solid wastes which are managed pursuant to a remedy required under § 264.525, or an interim measure required under § 264.540, shall be managed in a manner:

(1) That is protective of human health and the environment; and

(2) That complies with applicable Federal, State and local requirements.

(b) The Regional Administrator shall specify in the permit requirements for units in which wastes will be managed, and other waste management activities, as determined by the Regional Administrator to be necessary for protection of human health and the environment.

§ 264.551 Management of hazardous wastes.

(a) Except as Provided herein and in paragraphs (b) and (c) of this section any treatment, storage or disposal of listed or identified hazardous waste necessary to implement a remedy or an interim measure shall be in accordance with the applicable standards of 40 CFR parts 262, 264, 266 and 269.

Requirements for closure contained in subpart G of 40 CFR part 264, except for § 264.111, may be waived by the Regional Administrator for units created for the purpose of managing corrective action wastes.

(b)(1) For temporary units (except for incinerators and other non-tank thermal treatment units) in which hazardous wastes will be stored or treated, the Regional Administrator may determine that a design, operating, or closure standard(s) applicable to such unit(s)

solely by regulation may be replaced by alternative requirements which are protective of human health and the environment.

(2) Any temporary unit to which alternative requirements are applied according to paragraph (b)(1) of this section shall:

(i) Be operated for a period not exceeding 180 calendar days, unless the period is extended under § 264.551(b)(3) below; and

(ii) Be located at the facility; and

(iii) Be used only for treatment or storage of hazardous wastes (including hazardous constituents), or other solid wastes that have originated within the boundary of the facility.

(3) The Regional Administrator may grant an extension to the 180-day period of a temporary unit if hazardous wastes must remain in the unit due to unforeseen, temporary, and uncontrollable circumstances. The owner/operator must request this extension as a Class I modification, with Director approval, under the procedures of § 270.42.

(4) In establishing standards to be applied to temporary units, the Regional Administrator shall consider the following factors:

(i) The length of time such unit(s) will be in operation.

(ii) Type of unit, and volumes of wastes to be managed.

(iii) Potential for releases from the unit(s).

(iv) Physical and chemical characteristics of the wastes to be managed in the unit(s).

(v) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases.

(vi) Potential for exposure of humans and environmental receptors if releases were to occur from the unit(s).

(5) The Regional Administrator shall specify in the permit the length of time that such units will be allowed to operate, and specific design, operating, and closure requirements for the unit(s).

(c) For the purposes of implementing remedies under this subpart, the Regional Administrator may designate an area of contamination as a corrective action management unit.

(1) Movement or consolidation of wastes within a corrective action management unit will not constitute placement of hazardous wastes in a hazardous waste management unit.

(2) Consolidation of wastes within the corrective action management unit will not constitute creation of a new, replacement, or lateral expansion of a hazardous waste management unit.

(3) In making determinations as to whether a corrective action management unit is appropriate for implementing a remedy at a facility, and/or the nature and configuration of a corrective action management unit at a facility, the Regional Administrator may consider the following:

(i) The nature, extent and location of surficial contamination at the facility;

(ii) The potential benefits of a corrective action management unit in achieving remedial objectives for the facility, including (but not limited to):

(A) Expediting the timing of remedy implementation; and

(B) Enhancing the effectiveness, cost-effectiveness, reliability or protectiveness of a remedy;

(iii) The practicability of alternative remedial approaches; or

(iv) Other relevant factors.

(4) The requirements of subpart G of 40 CFR part 264 will not apply to corrective action management units. The Regional Administrator will specify in the permit closure requirements for any corrective action management unit, in consideration of the following factors:

(i) Unit characteristics;

(ii) Volume of wastes which will remain after closure;

(iii) Potential for releases from the unit;

(iv) Physical and chemical characteristics of the wastes;

(v) Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

(vi) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

(5) Closure requirements specified for corrective action management units under paragraph (c)(3) of this section shall:

(i) Minimize the need for further maintenance; and

(ii) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

(6) The Regional Administrator will specify in the permit post-closure requirements for any corrective action management unit, as necessary to protect human health and the environment, including monitoring and maintenance activities and the frequency with which they will be performed to ensure the integrity of the

cap, final cover, or other containment system.

§ 264.552 Management of non-hazardous solid wastes.

(a) Treatment, storage and disposal of non-hazardous solid wastes pursuant to a remedy or interim measure required under this subpart shall be in accordance with applicable technical standards for solid waste management as specified in regulations promulgated pursuant to RCRA subtitle D.

(b) For any unit in which non-hazardous solid wastes will be managed pursuant to a remedy or interim measure, the Regional Administrator may specify additional design and operating standards for the unit(s), as necessary to protect human health and the environment. In determining appropriate design and operating requirements for such units, the Regional Administrator shall consider the factors specified under § 264.551(b)(2).

§§ 264.553-264.559 (Reserved)

§ 264.560 Required notices.

(a) *Notification of ground-water contamination.* If at any time the permittee discovers that hazardous constituents in ground water that may have been released from a solid waste management unit at the facility have migrated beyond the facility boundary in concentrations that exceed action levels (as defined under § 264.521), the permittee shall, within fifteen days of discovery, provide written notice to the Regional Administrator and any person who owns or resides on the land which overlies the contaminated ground water.

(b) *Notification of air contamination.* If at any time the permittee discovers that hazardous constituents in air that may have been released from a solid waste management unit at the facility have or are migrating to areas beyond the facility boundary in concentrations that exceed action levels (as defined under § 264.521), and that residences or other places at which continuous, long-term exposure to such constituents might occur are located within such areas, the permittee shall, within fifteen days of such discovery:

- (1) Provide written notification to the Regional Administrator; and
- (2) Initiate any actions that may be necessary to provide notice to all individuals who have or may have been subject to such exposure.

(c) *Notification of residual contamination.* If hazardous wastes or hazardous constituents in solid waste management units, or which have been released from solid waste management units, will remain in or on the land after

the term of the permit has expired, the Regional Administrator may require the permittee to record, in accordance with State law, a notation in the deed to the facility property or in some other instrument which is normally examined during title search that will, in perpetuity, notify any potential purchaser of the property of the types, concentrations and locations of such hazardous wastes or hazardous constituents.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

6. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6924, and 6925.

7. In 40 CFR part 265, subpart C, it is proposed to amend § 265.112(b) by adding new paragraph (b)(8), and to amend § 265.113 by redesignating paragraphs (a)(1)(ii) as (a)(1)(iii) and (b)(1)(ii) as (b)(1)(iii), and by adding new paragraphs (a)(1)(ii) and (b)(1)(ii) to read as follows:

§ 265.112 Closure plan, amendment of plan.

• • • • •

(b) • • •

(8) Information which complies with the requirements of 40 CFR 270.14(d) for all solid waste management units at the facility.

• • • • •

§ 265.113 Closure, time allowed for closure.

• • • • •

(a) • • •

(1) • • •

(ii) Corrective action required at the unit or the facility under subpart S will delay the completion of partial or final closure: or

• • • • •

(b) • • •

(1) • • •

(ii) Corrective action required at the unit or the facility under subpart S will delay the completion of partial or final closure: or

• • • • •

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

8. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6925, 6927, and 6974

9. It is proposed to amend paragraph (c) of § 270.1 by adding the following introductory text immediately before the sentence which begins "The denial of a permit for the active life . . ." as follows:

§ 270.1 Purpose and scope of these regulations.

• • • • •

(c) . . . Owners and operators must also have permits covering any period necessary to comply with the requirements of subpart S of part 264. . . .

• • • • •

10. It is proposed to amend § 270.30(l) by adding new paragraph (l)(12) to read as follows:

§ 270.30 Conditions applicable to all permits.

• • • • •

(l) • • •

(12) *Information pertinent to corrective action requirements.* (i) If the permittee discovers additional solid waste management units or learns of releases of hazardous wastes (including hazardous constituents) from previously identified or newly discovered solid waste management units at the facility, the permittee shall submit the following information to the Director:

(A) *Identification of additional solid waste management unit(s).* Within thirty days of the receipt of information about a previously unknown and unreported solid waste management unit at the facility (as defined in 40 CFR 264.501), the permittee shall submit the following information to the Director:

(1) The location of the unit on the topographic map submitted as part of the part B application in accordance with 40 CFR 270.14(b)(19) or a topographic map of comparable scale which clearly indicates the location of the unit in relation to other solid waste management units at the facility.

(2) Designation of type of unit.

(3) General dimensions of the unit.

(4) When the unit was operated.

(5) Specification of all wastes that have been managed in the unit, if available.

(6) All available information pertaining to any release of hazardous wastes (including hazardous constituents) from the unit.

(B) *Sampling and analysis data.* The Director may require the permittee to perform sampling and analysis of ground water (which may involve the installation of wells), soils, surface water, or air, as necessary to determine whether a release(s) from such unit(s)

has occurred, is likely to have occurred, or will likely occur.

(C) *Releases of hazardous waste.* If the permittee discovers a release of hazardous wastes (including hazardous constituents) from a solid waste management unit at the facility that may pose a threat to human health and the environment, the permittee shall, within twenty days of the discovery, submit the following information to the Director:

(1) Identification of the solid waste management unit(s) from which the release has occurred, to include the type of unit, and location of the unit clearly indicated on a facility map; and

(2) Any other information currently available concerning the release, including potential exposure pathways, controls already imposed to address the release, and any action planned for further cleanup.

(ii) Based upon information supplied under (A), (B), or (C) above the Director may, as necessary, require further investigations or corrective measures in accordance with the standards for corrective action specified in 40 CFR subpart S. Such additional activities shall, if necessary, be specified by modifying an existing schedule of compliance according to § 270.34(c), or by initiating a permit modification according to § 270.41.

11. Section 270.33 is amended by adding the following sentence at the end of paragraph (a) to read as follows:

§ 270.33 Schedules of Compliance

(a) * * * Schedules of compliance for corrective action are governed solely by § 270.34.

12. * * * It is proposed to amend 40 CFR part 270, subpart C, by adding new § 270.34 to read as follows:

§ 270.34 Schedules of compliances for corrective action.

Schedules of compliance for corrective action are governed by this section and not § 270.33.

(a) The Director may include a schedule of compliance in the permit for purposes of specifying the terms and conditions necessary for the permittee to comply with the requirements of subpart S of part 264. Permit schedules of compliance issued under this section shall contain terms and conditions deemed by the Director to be necessary to protect human health and the environment.

(b) The permittee shall adhere to the schedules specified in the permit. If at any time the permittee determines that schedules cannot be met, the permittee shall, within 15 days of such

determination, notify the Director and submit a request for a permit modification under § 270.42, with an explanation of why the current schedule cannot be met.

(c) The Director may modify the permit to include conditions in the schedule of compliance as necessary to comply with the requirements of subpart S of part 264. The following procedures will be followed unless the Director determines instead that it is appropriate to modify the permit pursuant to § 270.41(a)(5)(ix):

(1) The Director will notify the permittee in writing of the proposed modification. Such notice will:

(i) Describe the exact change(s) to be made to the permit conditions;

(ii) Provide an explanation of why the modification is needed; and

(iii) Provide notification of the date by which comments on the proposed modification must be received. Such date will not be less than twenty days from the date the notice of proposed modification is received by the permittee, or after the public notice is published under § 270.34(c)(2);

(iv) Provide notification that supporting documentation or data may be available for inspection at the Regional or State office; and

(v) Include the name and address of an Agency contact to whom comments may be sent.

(2) The Director shall:

(i) Publish a notice of the proposed modification in a newspaper distributed in the locality of the facility, which includes notice of items (1)(i)-(v);

(ii) Mail a notice of the proposed modification to all persons on the facility mailing list maintained according to 40 CFR 124.10(c)(1)(viii). Such notice will include items (1)(i)-(v), and shall be mailed concurrently with notice to the permittee;

(iii) For facilities which have established an information repository pursuant to § 270.36, the Director shall place a notification of the proposed modification, including items (1)(i)-(v), in the information repository concurrently with actions taken under (i)-(ii).

(3) If the Director receives no written comment on the proposed modification, the modification will become effective five days after the close of the comment period; the Director will promptly notify the permittee and individuals on the facility mailing list in writing that the modification has become effective, and will place a copy of the modified permit in the information repository if a repository is maintained for the facility.

(4) If the Director receives written comment on the proposed modification,

the Director shall make a final determination concerning the modification within thirty days after the end of the comment period if practicable. The Director shall then:

(i) Notify the permittee in writing of the final decision. Such notification shall:

(A) Indicate the effective date of the modification, which shall be no later than fifteen days after the date of notification of the final modification decision.

(B) Include an explanation of how comments were considered in developing the final modification, and

(C) Provide a copy of the final modification;

(ii) Provide notice of the final modification decision, including paragraphs (c)(4)(i)(A) and (i)(B) of this section, in a newspaper of local distribution in the vicinity of the facility; and

(iii) Place a copy of items (i)(A)-(i)(C) in the information repository for the facility if such a repository is maintained.

(5) Modifications initiated and finalized by the Director using procedures in § 270.34(c) are not subject to administrative appeal.

B. It is proposed to amend 40 CFR part 270, subpart C, by adding new

§ 270.36 Information repository.

(a) At any time during conduct of investigations or other activities required under part 264, subpart S, the Director may require the permittee to establish and maintain an information repository for the purpose of making accessible to interested parties documents, reports and other public information developed pursuant to investigations and activities required under part 264, subpart S.

(b) The information repository shall contain all documents, reports, data and other information which the Director deems relevant to public understanding of the activities, findings and plans for such corrective action initiatives.

(c) The information repository shall, when feasible, be located within reasonable distance of the facility, or if not feasible, at the facility. The repository shall be accessible to the public during reasonable hours, as required by the Director.

(d) In the permit schedule of compliance, the Director shall specify requirements for informing the public about the information repository. At a minimum, written notice about the information repository shall be given to

all individuals on the facility mailing list.

(e) Information regarding procedures for submission of comments shall be made available at the repository.

14. It is proposed to amend § 270.41 by revising the introductory text and by adding new paragraph (a)(5)(ix) to read as follows:

§ 270.41 Modification or revocation and reissuance of permits.

When the Director receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit (see § 270.30), receives a request for modification or revocation and reissuance under § 124.5, or conducts a review of the permit file) he or she may determine whether one or more of the causes listed in paragraphs (a) and (b) of this section for modification, or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraph (c) of this section, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and

the permit is reissued for a new term. (See 40 CFR 124.5(c)(2).) If cause does not exist under this section, the Director shall not modify or revoke and reissue the permit, except on request of the permittee or in accordance with § 270.34(c). If a permit modification is requested by the permittee, the Director shall approve or deny the request according to the procedures of 40 CFR 270.42. The Director may also modify the permit schedule of compliance for corrective action under the procedures of § 270.34(c). Otherwise, a draft permit must be prepared and other procedures in part 124 (or procedures of an approved State program) followed.

(a) . . .
(5) . . .

(ix) The Director determines good cause exists for modification of the permit for the purposes of compliance with subpart S of part 264.

15. It is proposed to revise paragraphs (b)(3)(i) and (c)(3)(vii) of § 270.60 as follows:

§ 270.60 Permits by rule.

(b) . . .
(3) . . .

(i) Complies with 40 CFR subpart S; and

(c) . . .

(3) . . .

(vii) for NPDES permits issued after November 8, 1984, 40 CFR subpart S.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

16. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912(a), and 692a.

17. It is proposed to amend § 271.1(j) by adding the following entry in Table 1 in chronological order by date of publication:

§ 271.1 (Amended)

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

Date	Title of Regulation
July 27, 1990	Corrective Action for Solid Waste Management Units.

[FR Doc. 90-16737 Filed 7-26-90; 8:45 am]

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Federal Register

Wednesday
May 1, 1996

Part V

Environmental Protection Agency

40 CFR Ch. I

Corrective Action for Releases From
Solid Waste Management Units at
Hazardous Waste Management Facilities;
Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Ch. I**

[FRL-5460-2]

RIN 2050-AB80

Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Advance notice of proposed rulemaking.

SUMMARY: Today's action has three purposes. First, it introduces EPA's strategy for promulgating regulations governing corrective action for releases from solid waste management units at hazardous waste management facilities under the Resource Conservation and Recovery Act (RCRA) and requests information to assist in identification and development of potential improvements to the protectiveness, responsiveness, speed or efficiency of corrective actions. The Agency originally proposed corrective action regulations on July 27, 1990. Second, to provide context for potential revisions to the corrective action program, today's Notice includes a general status report on the corrective action program and how it has evolved since the 1990 proposal, and provides guidance on a number of topics not fully addressed in 1990. Third, it emphasizes areas of flexibility within the current program and describes program improvements currently underway or under consideration.

DATES: To ensure consideration, information and data must be received on or before July 30, 1996.

EPA will hold a public hearing on this Notice on June 3, 1996.

ADDRESSES: Written comments responding to today's Notice should be addressed to: Docket Clerk, U.S. Environmental Protection Agency, RCRA Docket (OS-305), 401 M Street SW, Washington, D.C. 20460. Comments sent by special delivery, such as overnight express services, should be addressed to: RCRA Docket Information Center (RIC), Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA 22202. Electronic comments should be addressed to: RCRA-Docket@epamail.epa.gov.

The June 3, 1996 public hearing will be held at the Key Bridge Marriott, located at 1401 Lee Highway, Arlington, VA 22209. Advance requests to speak at the hearing should be submitted, in

writing, to: Hugh Davis (5303W) U. S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

For important additional instructions on submitting comments or making a request to speak at the public hearing, see Supplementary Information.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll-free) or (800) 553-7672 (hearing impaired), or (703) 412-9810 (locally), Monday-Friday, 8:00-5:00 eastern standard time. For technical information, contact Hugh Davis, Office of Solid Waste (5303W), U.S. Environmental Protection Agency, 401 M Street SW, Washington, D.C. 20460. Phone, (703) 308-8633. E-mail address, davis.hugh@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:**Instructions for Submitting Comments and Requests To Speak at the Public Hearing**

Commenters should place the docket number (F-96-CA2P-FFFFF) on all comments and submit an original and two copies. Comments also may be submitted electronically, through the Internet. Comments submitted electronically should be in ASCII to avoid the use of special characters and encryptions.

The official record for this action will be kept in paper form. EPA will transfer all comments received electronically into paper form and place them, with comments submitted directly in writing, in the official record. EPA responses to comments will be recorded in a notice in the *Federal Register* or in an official record for this action. EPA will not immediately reply to electronic comments other than to seek clarification of comments that may be garbled in transmission or during conversion to paper form.

Confidential business information (CBI) may be included in comments, however, to ensure continued confidentiality, it must be submitted under separate cover. If including CBI, commenters should submit an original and two copies to: U.S. Environmental Protection Agency, RCRA CBI Document Control Officer, OSW (5303W), 401 M Street SW, Washington, D.C. 20460. Place the docket number (F-96-CA2P-FFFFF) on the CBI and include a reference to any non-CBI comments submitted. Do not submit CBI electronically.

Docket materials may be reviewed by appointment by calling (703) 603-9230. The docket is located on the first floor of the Crystal Gateway building at 1235 Jefferson Davis Highway in Arlington, Virginia and is open from 9:00 a.m. to

4:00 p.m., Monday through Friday, excluding Federal holidays. A maximum of 100 pages of material may be copied at no cost from any one regulatory docket. Additional copies are \$0.15 per page. The main switchboard number for the hotel is (703) 524-6400.

Individuals interested in directions to the June 3, 1996 public hearing at the Key Bridge Marriott or room reservations should contact the hotel directly at (703) 524-6400. Registration for the hearing will begin at the hotel at 8:30 a.m. The hearing will begin at 9:00 a.m. and end at 5:00 pm unless concluded earlier. Oral and written statements may be submitted at the public hearing. Time for the public hearing is limited; oral presentations will be made in the order that requests are received and will be limited to 15 minutes, unless additional time is available. Advance requests to speak at the public hearing should be clearly marked as a request to speak at the public hearing and include the scheduled date of the hearing (June 3, 1996) and the docket number for this action (F-96-CA2P-FFFFF). Requests to speak at the public hearing may also be made on the day of the hearing, by registering at the door; request to speak by individuals who choose to register at the door on the day of the hearing will be granted in the order received, as time permits. All individuals who choose to speak at the public hearing are requested to provide a paper copy of their testimony for the record.

Internet Access

This notice is available on the Internet. To access today's Notice electronically:

Gopher: gopher.epa.gov
WWW: <http://www.epa.gov>
Dial-up: (919) 558-0353

From the main EPA Gopher menu, select: EPA Offices and Regions/Office of Solid Waste and Emergency Response (OSWER)/Office of Solid Waste (RCRA)/Hazardous Waste/Corrective Action.

FTP: ftp.epa.gov
Login: anonymous
Password: your Internet address
Files are located in /pub/gopher/oswrcra

Glossary of Commonly Used Acronyms

ASTM—American Society for Testing and Materials
ASTSWMO—Association of State and Territorial Solid Waste Management Officials
CAMU—Corrective Action Management Unit
CAP—Corrective Action Plan
CERCLA—Comprehensive Environmental Response, Compensation and Liability Act
CMI—Corrective Measures Implementation

CMS—Corrective Measures Study
 CSGWPP—Comprehensive State Groundwater Protection Program
 DQO—Data Quality Objective
 EAB—Environmental Appeals Board
 FACA—Financial Assurance for Corrective Action
 HSWA—Hazardous and Solid Waste Amendments
 LDR—RCRA Land Disposal Restrictions
 MCL—Maximum Contaminant Limit
 MTR—RCRA Minimum Technology Requirements
 NCAPS—National Corrective Action Prioritization System
 NPL—National Priorities List
 NCP—National Oil and Hazardous Substances Pollution Contingency Plan
 OSW—EPA Office of Solid Waste
 OSWER—EPA Office of Solid Waste and Emergency Response
 POC—Point of Compliance
 RBCA—Risk Based Corrective Action (refers to ASTM standard E1739-95)
 RCRA—Resource Conservation and Recovery Act
 RFA—RCRA Facility Assessment
 RFI—RCRA Facility Investigation
 RU—Regulated Unit
 SWMU—Solid Waste Management Unit
 SSG—EPA Soil Screening Guidance
 TI—Technical Impracticability
 TSDF—Treatment, Storage, or Disposal Facility
 UST—Underground Storage Tank

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I. Background

A. Statutory and Regulatory Requirements

In the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), Congress directed EPA to require corrective action for all releases of hazardous waste and hazardous constituents from solid waste management units at facilities seeking RCRA permits (i.e., hazardous waste Treatment, Storage or Disposal Facilities or TSDFs) regardless of the time at which waste was placed in the units. When corrective action cannot be completed prior to permit issuance, the statute directs EPA to specify corrective action schedules of compliance and financial assurance in all permits issued under RCRA section 3005. In addition, EPA is directed to require that corrective action be taken beyond facility boundaries unless facility owners/operators demonstrate to the Agency's satisfaction that, despite their best efforts, they were unable to obtain the necessary permission to undertake off-site corrective action. (See, RCRA section 3004 (u) and (v), 42 U.S.C. 6924 (u) and (v).) At the same time, Congress enacted the RCRA permit omnibus provision directing that, "each permit issued under [RCRA Section 3005] contain such terms and conditions as the Administrator determines necessary to protect human health and the environment." (See, RCRA sections 3005(C)(3), 42 U.S.C. 6925(c)(3).) EPA is authorized to require corrective action

at interim status facilities under RCRA section 3008(h), 42 U.S.C. 6928(h).

At the time the new corrective action provisions were enacted, corrective action for releases to groundwater from RCRA regulated units was already required under 40 CFR part 264, subpart F. RCRA regulated units are defined in 40 CFR 264.90 as surface impoundments, waste piles, land treatment units, and landfills that received hazardous waste after July 26, 1982; they are a subset of the universe of solid waste management units. The 1984 HSWA amendments extended corrective action authority at TSDFs to all waste management at units that received solid or hazardous waste at any time. In the legislative history of RCRA section 3004(u), Congress noted that one purpose of the new corrective action requirements was to ensure that RCRA facilities did not become Superfund cleanup sites. The legislative history records that, "Unless all hazardous constituents released from solid waste management units at permitted facilities are addressed and cleaned up the Committee is deeply concerned that many more sites will be added to the future burdens of the Superfund program with little prospect for control or cleanup. The responsibility to control such releases lies with the facility owner and operator and should not be shifted to the Superfund program, particularly when a final permit has been requested by the facility." (See, H.R. Rep. No. 198, 98th Cong., 1st Sess., part 1, 61 (1983).)

In July 1985, EPA codified corrective action requirements at 40 CFR 264.90(a)(2); 264.101; 270.60(b) and 270.60(c). (See, 50 FR 28702, July 15, 1985.) These regulations reiterate the statutory language of RCRA section 3004(u) by requiring facility owners/operators seeking RCRA permits to institute corrective action, as necessary to protect human health and the environment, for all releases of hazardous waste and constituents from solid waste management units at the facility. When corrective action cannot be completed prior to permitting, EPA requires that all permits contain corrective action requirements, schedules of compliance, and financial assurance. In 40 CFR 270.60(b) and 270.60(c), EPA clarified that corrective action is also required for some facilities with RCRA permits-by-rule, including hazardous waste management facilities with permits issued under the Underground Injection Control program and the National Pollution Discharge Elimination System (NPDES) permitting program.

In December 1987 (52 FR 45788, December 1, 1987), EPA promulgated additional corrective action regulations to codify the statutory language of RCRA § 3004(v), requiring corrective action for releases beyond the facility boundary. EPA also established permit application requirements necessary to support corrective action implementation, and modified the corrective action requirements for underground injection wells with RCRA permits-by-rule.

On July 27, 1990 (55 FR 30798), EPA proposed detailed regulations to govern the RCRA corrective action program. The 1990 proposal was designed to be the analogue to the CERCLA program's National Oil and Hazardous Substances Pollution Contingency Plan (NCP). As such, it addressed both technical (e.g., cleanup levels, remedy selection, points of compliance) and procedural (e.g., definitions, permitting, reporting) elements of the corrective action program. In the 1990 proposal, EPA emphasized the need for site-specific flexibility in cleanup programs. The Agency stated, "Because of the wide variety of sites likely to be subject to corrective action, EPA believes that a flexible approach, based on site-specific analyses is necessary. No two cleanups will follow exactly the same course, and therefore, the program has to allow significant latitude to the decision maker in structuring the process, selecting the remedy, and setting cleanup standards appropriate to the specifics of the situation." (See, 55 FR 30802.)

The 1990 proposal was the subject of significant public comment. Although EPA has finalized only a few sections of the 1990 proposal,¹ the bulk of the proposal is routinely used as guidance during corrective actions.

B. Summary of Today's Notice

Today's Notice introduces EPA's strategy for promulgation of corrective action regulations and requests public input on a variety of issues and concepts associated with corrective action. To provide context for potential revisions to the corrective action program and because the Agency's philosophy and strategies have evolved in many respects since 1990, today's Notice also includes a general status report on the corrective action program and how it has grown since the 1990 proposal, and provides guidance on a number of topics not fully addressed in 1990. Finally, today's Notice

¹ See 58 FR 8658, February 16, 1993, "Corrective Action Management Units" where EPA finalized regulations addressing the creation, management, and closure of units created specifically for purposes of managing remediation wastes.

emphasizes the flexibility inherent in the existing corrective action program, discusses steps EPA is already taking to improve corrective actions and requests comments on new approaches to expedite and simplify facility cleanups.

In Section I of today's Notice, EPA identifies the statutory and regulatory basis of the corrective action program.

Section II of today's Notice introduces EPA's Subpart S Initiative. Through the Subpart S Initiative the Agency intends to identify and implement improvements to the protectiveness, responsiveness, speed and efficiency of the corrective action program. Section II includes discussions of the Subpart S Initiative objectives, outreach, and schedule. It also includes discussions of major corrective action program guidance and policy milestones that have occurred since 1990, and the relationship of the Subpart S Initiative to other agency rulemakings and initiatives.

In Section III, EPA discusses corrective action implementation, describes how certain program elements have evolved since 1990, and provides guidance on a number of topics that were not fully addressed in the 1990 proposal. This section emphasizes areas of flexibility in the current corrective action program and highlights innovative approaches some program implementors and facility owners/operators have used to expedite cleanups. Readers are urged to pay particular attention to Section III in order to gain an overall understanding of the Agency's latest thinking on corrective action implementation.

Section IV of today's Notice builds on the detailed discussions in Section III by providing concise statements of EPA's corrective action implementation goals and strategies.

In Section V of today's Notice, EPA requests comments and data on a variety of issues to assist it in identifying and developing improvements to the corrective action program. In some cases, the Agency raises new concepts that would likely warrant re-proposing regulations or developing new guidance documents; in other cases, concepts were addressed in the 1990 proposal but are included in Section V because the Agency is requesting additional comment and data at this time.

II. Subpart S Initiative

EPA and the states have made considerable progress in implementing the corrective action requirements; however, despite this progress, the overall implementation of the corrective action program has been subject to considerable criticism. States,

environmental groups and the regulated community have raised many concerns, including: slow progress in achieving cleanup or other environmental results; an emphasis on process and reports over actual work in the field; unrealistic, impractical or overly conservative cleanup goals; excessive and detailed oversight; reluctance to authorize or recognize the work of state cleanup programs; and, lack of meaningful public participation. EPA believes that many of these concerns have been overstated; however, at the same time, it recognizes that improvements to the corrective action program are necessary. EPA and the states now have more than ten years experience in implementing the corrective action requirements. EPA believes the time has come to reevaluate the RCRA corrective action program to identify and implement improvements to the program's speed, efficiency, protectiveness and responsiveness, and to focus the program more clearly on environmental results. The reevaluation effort is known as the Subpart S Initiative.

As part of the Subpart S Initiative, EPA has been working with states and other stakeholders to develop a comprehensive strategy to identify and develop improvements to the corrective action program and promulgate final corrective action regulations. The Subpart S Initiative involves assessment of the current corrective action program, outreach to stakeholders, finalization of some elements of the 1990 proposal, development of new proposals and guidance documents, and today's Notice.

EPA is committed to substantive consistency among its cleanup programs. For that reason, the Subpart S Initiative is being coordinated closely with the Superfund program, including the Superfund administrative improvements efforts and Superfund reauthorization activities.

A. Objectives

Taking into consideration corrective action implementation experience, recent feedback from stakeholders, and the comments received on the 1990 proposal, EPA has developed five objectives for the Subpart S Initiative:

- (1) Create a consistent, holistic approach to cleanups at RCRA facilities;
- (2) Establish protective, practical cleanup expectations;
- (3) Shift more of the responsibilities for achieving cleanup goals to the regulated community;
- (4) Focus on opportunities to streamline and reduce costs; and,
- (5) Enhance opportunities for timely, meaningful public participation.

Implementation of these five objectives will involve new approaches to corrective action and may necessitate significant revisions to the existing corrective action program. In adopting any new approach, EPA will not sacrifice protection of human health and the environment or the meaningful involvement of the public and affected communities.

B. Outreach

EPA believes the experiences of states, the regulated community, other Federal agencies, and environmental and public interest groups will be tremendously valuable as it works to identify and develop improvements to the corrective action program. Today's Notice reflects the involvement of interested stakeholder groups, as discussed below. EPA is committed to a continuing and meaningful dialogue with these groups as the Subpart S Initiative develops. As the Subpart S Initiative progress, EPA will continue to identify interested stakeholder groups and invite their input and involvement.

1. States

In December and January 1995, EPA met twice with interested state representatives to solicit their early input in the Subpart S Initiative. In general, these state representatives advised that the corrective action program: Retain considerable flexibility; emphasize results over process; be generally consistent with the CERCLA program; address consistency issues within the RCRA program (e.g., between cleanups at SWMUs and regulated units); address risk assessment and risk management, including ecological risk; empower states and expedite state authorization; and, encourage stabilization without discouraging final cleanups. State representatives also strongly advised against finalizing corrective action regulations in pieces, favoring the comprehensive approach reflected in today's Notice. The ongoing role of the states in the Subpart S Initiative is discussed below.

2. Environmental and Public Interest Community

EPA wrote nine environmental and public interest groups requesting their early involvement in the Subpart S Initiative. To date, EPA has met with one environmental group, the Environmental Defense Fund (EDF). The Environmental Defense Fund expressed support for changes in the corrective action program to improve the speed and efficiency of cleanups and increase opportunities for meaningful public participation. Their suggestions include:

tailoring the level of public participation to the level of community interest; including opportunities for public participation throughout the cleanup process; using risk goals and clearly defined cleanup standards to make cleanups more efficient; maintaining a throughout-the-plume/unit boundary cleanup point of compliance; and, using deed restrictions at non-residential cleanups. While EDF expressed general support for consistency in technical matters between RCRA and CERCLA, they also expressed the opinion that operating hazardous waste management facilities, such as those typically addressed by RCRA corrective action, have an ongoing responsibility to their communities and should, perhaps, be held to higher cleanup standards than abandoned (i.e., Superfund) sites. EPA welcomes the continued involvement of EDF in the Subpart S Initiative and will continue to look for opportunities to involve other environmental and public interest groups.

3. Regulated Community

EPA met with and received written materials from a variety of industry groups which offered their suggestions for improvements to the corrective action program. In general, industry groups expressed frustration with the pace and cost of corrective actions and what they perceive as overly stringent cleanup criteria. Their suggestions include increased reliance on performance standards, more emphasis on non-residential future land use scenarios, and improved coordination with other applicable cleanup authorities (e.g., the Superfund program and state cleanup programs). EPA welcomes the continued involvement of the regulated community in development of the Subpart S Initiative.

4. Other Federal Agencies

During Spring and Summer 1995, EPA held a series of meetings with other Federal agencies, including, the Department of Defense (DOD), the Department of Energy (DOE), the Department of Agriculture, the Council on Environmental Quality (CEQ), and the Office of Management and Budget (OMB). Many of these agencies own or operate facilities which are subject to RCRA corrective action. During these meetings, EPA and the other Federal agencies discussed potential improvements to the RCRA corrective action and Superfund programs. EPA will continue these discussions during development of the Subpart S Initiative.

The Department of Defense and the Department of Energy reviewed and

provided comments on a draft version of today's Notice and EPA met with DOD and DOE representatives to discuss their comments and suggested changes.

C. On-Going Role of the States

The states are the primary implementors of the corrective action program. Because of this, EPA has actively solicited state input and participation in the Subpart S Initiative and is developing the Initiative in full partnership with the states. As of today's Notice, thirteen states² have agreed to participate in the Subpart S Initiative as co-regulators. During the co-regulation process, state representatives participate actively in development of policy and regulatory options and analyses. As discussed above, EPA has held two meetings with state representatives to discuss development of the Subpart S Initiative; three additional meetings and a fifty-state review of any regulatory proposals are planned. In addition, representatives of interested states participated actively in development of today's Notice and reviewed and provided comment on numerous drafts.

D. Strategy and Schedule

The Subpart S Initiative will include development of guidance and policy documents and rulemaking. EPA intends to publish rule language in fall 1997. In order to present the Agency's visions for the corrective action program and regulations in totality, the 1997 publication will promulgate elements of the 1990 proposal that the Agency believes do not need additional public review and will re-propose other program elements. Based in part on comments received in response to Section V.B of today's Notice, EPA will determine which elements of the 1990 proposal will be finalized without further comment and which elements will be re-proposed.

Guidance and policy development will play an important role in the Subpart S Initiative. The balance between guidance and policy development and rulemaking will be determined, in part, by comments received on today's Notice. Section V.A of this Notice requests specific recommendations for additional policy or guidance development.

E. Major Corrective Action Program Developments Since 1990

The Subpart S Initiative builds on several recent and important

developments in the corrective action program. Many of these program developments are addressed in the EPA guidance documents discussed below: other program developments were associated with promulgation of the Corrective Action Management Unit (CAMU) regulations, also discussed below. A complete list of corrective action guidance documents is available in the "RCRA Corrective Action Plan," EPA/520-R-94-004, OSWER Directive 9902.3-2A, May 1994, included in the docket for today's Notice.

1. Stabilization Initiative

EPA's early implementation of the corrective action program focused on final, comprehensive cleanups at a limited number of facilities. As EPA and states gained more experience, it became clear that, at many sites, final cleanups were difficult and time-consuming to achieve and that an emphasis on final remedies at a few sites could divert limited resources from addressing ongoing releases and environmental threats at many other sites. As a result, in 1991, the Agency established the Stabilization Initiative as one of the primary implementation objectives for the corrective action program. The goal of the Stabilization Initiative is to increase the rate of corrective actions by focusing on near-term activities to control or abate threats to human health and the environment and prevent or minimize the further spread of contamination. Through the Stabilization Initiative, the Agency is seeking to achieve an increased overall level of environmental protection by implementing a greater number of actions across many facilities rather than following the more traditional process of pursuing final, comprehensive remedies at a few facilities.

Controlling exposures or the migration of a release may stabilize a facility, but does not necessarily mean that a facility is completely cleaned up. At some stabilized facilities, contamination is still present and additional investigations or remediation may eventually be required; however, as long as the stabilization measures are maintained, stabilized facilities should not present unacceptable near-term risks to human health or the environment and program implementors and facility owners/operators have the opportunity to shift their resources (either at the stabilized facility or among facilities) to additional health or environmental concerns. Stabilization actions should be a component of, or at least consistent with, final remedies. More information on the Stabilization Initiative is

available in the 1991 guidance memorandum "Managing the Corrective Action Program for Environmental Results: The RCRA Facility Stabilization Effort" and in Section III.C.3 of today's Notice.

2. Environmental Indicators for Corrective Action

Critics of the corrective action program have often charged that EPA focuses too much on administrative processes rather than actual cleanups. As an example of this problem, critics cite Agency management systems which often track the number of paperwork deliverables (e.g., work plans approved) rather than achievement of environmental results. In response to these concerns and the Government Performance and Results Act of 1993, EPA is moving the corrective action program away from more traditional management systems and, consistent with a broader Agency-wide effort, now focuses management of the corrective action program on environmental indicators. Two specific environmental indicators have been developed for the corrective action program. These indicators are: Human Exposures Controlled Determination and Groundwater Releases Controlled Determination. The environmental indicators are facility-wide measures. Human Exposures Controlled is attained when there are no unacceptable risks to humans due to releases of contaminants at or from the facility subject to RCRA corrective action. Groundwater Releases Controlled is attained when the migration of groundwater contamination at or from the facility across designated boundaries (these boundaries may be facility boundaries or specified boundaries within a facility) is controlled.

The environmental indicators are not tied to specific program activities or paperwork deliverables. In the course of implementing final remedies, the environmental indicators will be achieved; however, the implementation of stabilization measures can also result in achieving the environmental indicators. EPA is striving to make the corrective action program more performance based. Because the environmental indicators focus on results, they can serve well as performance measures for remedial activities. Further guidance on the environmental indicators is available in the July 29, 1994 memorandum "RCRIS Corrective Action Environmental Indicator Event Codes CA725 and CA750," which has been placed in the docket for today's Notice.

² These states are: Wisconsin, Texas, Georgia, Idaho, Florida, Colorado, New York, California, Utah, Oklahoma, North Carolina, Delaware, and Missouri.

EPA is committed to using the corrective action environmental indicators to increase the efficiency of the corrective action program by focusing on results. Although EPA has developed only two environmental indicators for corrective action to date, additional indicators may be developed to address factors such as ecological risk or source control. EPA requests comments on the development of additional environmental indicators in Section V.C.1 of today's Notice.

3. Corrective Action Plan

Another concern in the corrective action program has been consistency. While no two cleanups will follow the exact same course, EPA recognizes that some level of consistency in cleanup processes can help to ensure that all cleanups will achieve the same overall level of protection. The RCRA Corrective Action Plan or CAP (OSWER Directive 9902.3-2A, May 1994), provides guidance which program implementors and facility owners/operators can use to develop and direct the specific corrective action activities which might be necessary at any given facility. The CAP provides an overall program implementation framework and model scopes of work for site characterizations, interim actions, evaluation of remedial alternatives and remedy implementation. Program implementors and facility owners/operators can use these model scopes of work when developing site-specific strategies, work plans, and schedules of compliance.

The CAP is not meant to be a cleanup prescription. The model scopes of work in the CAP present a range of activities which might be necessary at a corrective action facility. Program implementors and facility owners/operators should choose carefully from this range when developing facility specific work plans.

4. CAMU Rule

Program implementors and facility owners/operators have long recognized that certain RCRA Subtitle C hazardous waste requirements can significantly complicate or delay cleanups when applied to remediation wastes. To address this problem, EPA promulgated regulations for corrective action management units (58 FR 8658, February 16, 1993). The CAMU rule provides relief from specific RCRA standards that can preclude desirable remediation options or unnecessarily add to the cost of remedies (e.g., the RCRA land disposal restrictions when applied to remediation waste) by creating a new type of RCRA unit. EPA and authorized states may choose to

designate a CAMU for management of remediation waste during RCRA corrective actions and other cleanups. When designating CAMUs, EPA and authorized states have the flexibility to establish site-specific design, operating, closure and post-closure requirements instead of using the existing RCRA requirements for land-based units. Remediation wastes (i.e., media and debris which contain hazardous waste or exhibit a hazardous waste characteristic) may be consolidated into a CAMU before or after treatment. In addition, remediation wastes may be treated in a CAMU or moved (again, before or after treatment) between CAMUs at the same facility without automatically triggering otherwise applicable RCRA land disposal restrictions or minimum technology requirements.

The CAMU rule was challenged in 1993; however, the challenge has been stayed pending publication of the final Hazardous Waste Identification Rule for Contaminated Media (HWIR-Media). EPA expects that the HWIR-Media rule will largely obviate the need for the CAMU rule, and is planning to propose withdrawal of the CAMU regulations as part of the HWIR-Media proposal (for a discussion of the HWIR-Media proposal, see Section II.F.1 of today's Notice). In the meantime, CAMUs may be used to support efficient and protective cleanups.

5. Other Developments

In addition to the examples discussed above, program implementors and facility owners/operators are using the existing flexibility in the corrective action program to explore a range of new approaches in an effort to improve the corrective action process and expedite cleanups at a facility-specific level. These include: using performance standards to set goals for site investigations and cleanups; encouraging innovative technical approaches; facilitating voluntary or accelerated cleanups, when a facility owner/operator wants to move ahead of a regulatory agency; the use of third-party oversight; expanded public participation, including use of citizen advisory boards; innovative coordination with or deferral to other programs, including state cleanup programs; and, many other efforts. In accordance with EPA's emphasis on consistency of results between the RCRA and CERCLA programs, many of these approaches are being developed in cooperation with the Superfund program or state remedial programs.

EPA encourages program implementors and facility owners/

operators to continue to explore new approaches to corrective action and to share their successes and failures. Some of the innovative approaches which have proved most successful at individual facilities are discussed later in today's Notice; EPA is looking forward to receiving information on other new approaches in response to today's Notice. One of the purposes of today's Notice is to gather information on successful facility-specific approaches to corrective action so EPA can build on implementation experience as it identifies and develops improvements to the national program during the Subpart S Initiative.

F. Relationship to Other Agency Initiatives and Rulemakings

EPA is involved in several rulemakings and other activities which will have particular impact on the Subpart S Initiative. Coordination with these other rulemakings and activities is ongoing.

1. HWIR Media

The Hazardous Waste Identification Rule for Contaminated Media (HWIR-Media) is a regulatory reform proposal that reexamines the application of many of the RCRA hazardous waste treatment and management standards to contaminated environmental media (e.g., soil and groundwater) managed during Agency or authorized state overseen cleanups. Under current regulations, environmental media that contain (or are contaminated by) hazardous wastes must be managed as hazardous waste (this is known as the "contained-in policy"). In developing the HWIR-Media proposal, EPA, in partnership with the states, is examining a number of reforms designed to allow program implementors to tailor treatment and management requirements for contaminated media to site- and media specific conditions. EPA is proposing several types of reforms and seeking comment on a number of alternatives. The Agency may finalize any one or combinations of these reforms or alternatives.

The first major area of reform that EPA is considering would revise the Land Disposal Restrictions (LDRs) Minimum Technological Requirements (MTRs) and permitting requirements that apply to contaminated media currently subject to hazardous waste management requirements, to make them more appropriate for the types of contaminated media and concerns typically addressed at cleanup sites. Currently, large volumes of contaminated media are subject to

hazardous waste requirements, notably LDR, MTR and permitting, that were originally designed for newly generated or process wastes, where the concerns are different from those at cleanup sites.

More broadly, EPA is also proposing to exempt some contaminated media from RCRA Subtitle C hazardous waste management requirements. This reform would allow authorized states or EPA to determine contaminated media management standards for those exempted media on a site-specific basis. EPA is considering two exemption options. First, EPA is considering exempting media by determining, often based on management conditions, that the media do not contain hazardous wastes (this is commonly known as the "contained-out" approach); second, EPA is considering exempting media only if certain conditions were met (this is commonly known as the "conditional exclusion" approach). Under the options that would exempt only some contaminated media from hazardous waste management requirements, EPA is proposing to use a set of constituent concentrations known as a "Bright Line" to divide the media that would and would not be eligible for exemption. Media with concentrations of constituents below Bright Line concentrations would be eligible for exemption; media with constituent concentrations above the Bright Line would not be eligible. Finally, in the HWIR-Media proposal, EPA is requesting comment on exempting all cleanup wastes, including contaminated media, sludges, debris, and other wastes managed during the course of a cleanup, based on a conditional exclusion. Under this option, authorized states or EPA would set all management and treatment requirements for cleanup wastes on a site-specific basis.

The HWIR-Media proposal in particular will complement the Subpart S Initiative by potentially providing program implementors with the flexibility to tailor requirements for management of contaminated media to the risks posed by any given medium and the circumstances at any given corrective action facility.

2. Post-Closure Rule

EPA has long recognized the need to more effectively integrate corrective action and closure activities. Toward this end, the Agency proposed a rule entitled "Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities; Post-Closure Permit Requirement; Closure Process; State Corrective Action Enforcement Authority" (59 FR 55778, November 8,

1994). In this notice, the Agency proposed revisions to the current requirements applicable to facilities with closed and closing land disposal units, and revisions to the requirements for state authorization for corrective action. These provisions, described in more detail below, were proposed as part of the Agency's efforts to create a consistent approach to cleanups at RCRA facilities.

a. The Post-Closure Permit Requirement. The current regulations at 40 CFR Part 270.1(c) require owners and operators of surface impoundments, landfills, land treatment units, and waste pile units that received wastes after July 26, 1982, or that certified closure after January 26, 1983 to obtain a post-closure permit for the facility, unless they demonstrate closure by removal at those units. For facilities that did not receive an operating permit, and closed under interim status standards, this post-closure permit serves to impose several critical statutory and regulatory requirements, including the requirements for corrective action.

The November 8, 1994 proposal would allow a regulatory agency (e.g., EPA or an authorized state) to address these facilities using the best available regulatory or enforcement authority, instead of requiring that agencies issue post-closure permits in all cases. While the proposal would not otherwise modify the applicable cleanup requirements at these facilities, it would remove the requirement that they be imposed through the post-closure permitting process. Under the proposal, a regulatory agency could require post-closure care (including corrective action) at the facility under an enforcement mechanism, a state cleanup authority, or Federal Superfund authority. This flexibility contributes to the Agency's efforts in the Subpart S Initiative.

b. Applicability of 40 CFR Parts 264 and 265 to Regulated Units Requiring Corrective Action. Under the current regulations, the requirements that apply to closed and closing land disposal units depend on their legal status. Regulated units, defined in 40 CFR 264.90 as surface impoundments, waste piles, land treatment units, or landfills that received waste after July 26, 1982, are subject to the fairly specific closure, post-closure, financial assurance, groundwater monitoring and corrective action requirements of 40 CFR Parts 264 and 265. Non-regulated solid waste management units are not subject to 40 CFR Parts 264 and 265; consequently, environmental risks at those units are determined and addressed on a site-

specific basis through the corrective action process.

Despite this regulatory distinction, these units are often indistinguishable in terms of environmental risk. EPA is concerned that this dual regulatory scheme can, in some cases, limit its authority to determine the best remedy at regulated units. In the November 8, 1994 proposal, the Agency expressed this concern, and solicited comment on whether the regulations should be modified to give overseeing agencies the discretion to remove or modify all or part of the Part 264 and 265 requirements described above at a facility that is undergoing cleanup using the RCRA corrective action process.

c. State Corrective Action Enforcement Authority. Under the current Federal authorization process, states are required to obtain authorization for implementing provisions of HSWA, such as Section 3004(u), to address corrective action at permitted facilities. However, states have never been required to obtain authority to address corrective action at interim status facilities. On November 8, 1994, EPA proposed that states be required to upgrade their judicial or administrative enforcement authority to respond to releases of hazardous waste or hazardous constituents at interim status facilities as provided by Section 3008(h). This provision was designed to provide consistent and complete delegation of the corrective action program to states.

EPA is completing its review of comments on the proposed provisions and plans to proceed with promulgation of the final rule in the near future.

3. RCRA Statutory Reform

On March 16, 1995 the President committed to identify high cost, low benefit provisions of the Resource Conservation and Recovery Act (RCRA) for legislative reform. After an extensive stakeholder outreach process, the Administration selected two issues. The first issue for legislative reform, an exemption for certain low risk wastes from costly regulation under RCRA's land disposal restrictions program, was signed into law—the Land Disposal Flexibility Act—by the President on March 26, 1996.

The second topic identified for legislative reform was the application of RCRA hazardous waste management requirements to cleanup wastes. The Administration currently is discussing with stakeholders and Congress the possible development of bipartisan legislation to expedite the safe and cost effective management of cleanup wastes that are currently subject to RCRA

hazardous waste management requirements. In addition to RCRA cleanup sites, the type of reform being discussed would benefit site cleanups under Superfund, Brownfield and State voluntary programs.

4. Improvements to the Procedures for Authorization of State Hazardous Waste Program Revisions

Under RCRA Section 3007, EPA is charged with authorizing equivalent state hazardous waste programs including corrective action programs. Authorized states administer and enforce the RCRA program within the state in lieu of the Federal program (see 40 CFR Part 271); authorized states have primary enforcement responsibility, although EPA retains enforcement authority under RCRA sections 3008, 7003, and 3013.

Following their initial authorization, states are required to periodically revise their hazardous waste programs to remain equivalent to the Federal program. Since EPA is continually revising the RCRA program in response to statutory changes, court ordered deadlines and evolving priorities, states are continually updating their authorized programs. Preparation, review and approval of changes to authorized state hazardous waste programs represents a significant workload for states and EPA. In addition, states have often expressed the concern that EPA review of changes to authorized hazardous waste programs is too detailed, resource intensive, and time consuming. To increase the pace and efficiency of authorization of state program revisions and respond to state concerns, EPA proposed changes to the regulations for processing state program revision applications in the Land Disposal Restrictions Phase IV rule (60 FR 43654, August 22, 1995). Additional provisions to streamline authorization of state program revisions are under consideration for inclusion in the HWIR-Media rule, currently under development. Improvements proposed in the LDR Phase IV rule and under consideration for the HWIR-Media rule include: creating a tiered approach to tailor authorization to the complexity and impact of the program revisions at issue; increasing reliance on state certifications; and placing more emphasis on time-frames for processing of authorization applications. Improvements to the procedures for state program revisions would apply to all state program revisions, including revisions made necessary by promulgation of corrective action regulations.

5. Superfund Reauthorization

As a general philosophy, EPA believes that the RCRA and CERCLA remedial programs should operate consistently and result in similar environmental solutions when faced with similar circumstances. Currently, Congress is considering legislation to reauthorize CERCLA. If CERCLA is amended, EPA believes that parallel changes in the corrective action program should generally be adopted. Changes to the CERCLA program which might impact the RCRA corrective action program include new approaches to setting cleanup standards and factoring risk into remedial decision making.

6. Superfund Administrative Improvements and Reforms

Independent of reauthorization of the CERCLA statute, EPA's Superfund program has undertaken a number of administrative initiatives to streamline the Superfund program and increase the fairness, effectiveness, and efficiency of CERCLA cleanups. Several of the proposals developed as part of the administrative reform and improvement efforts also apply to RCRA cleanups, as discussed below.

a. Guidance on Land Use. On May 25, 1995, EPA issued a Directive titled, "Land Use in the CERCLA Remedy Selection Process." The directive has two primary objectives. First, to promote early discussions between EPA and local land use planning authorities, local officials, and the public regarding reasonably anticipated future land uses. Second, to promote the use of the information from those discussions to formulate realistic assumptions regarding future land use, and to clarify how land use assumptions influence risk assessment, development of remedial alternatives, and remedy selection.

The directive was developed primarily to address land use considerations under the CERCLA program; however, the principle of early and complete involvement of stakeholder groups to develop realistic land use assumptions is equally applicable to the RCRA corrective action program. EPA recognizes that RCRA facilities are often industrial properties that are actively managed, rather than the abandoned sites typically addressed under CERCLA. Because of this consideration, the directive stated that non-residential use considerations might be especially appropriate at many RCRA corrective action facilities. Consideration of non-residential land use in RCRA corrective actions was addressed in the 1990 proposal and is

discussed further in Sections III.C.5.j and V.E.1 of today's Notice.

b. Soil Screening Guidance. In December 1994, EPA issued a draft "Superfund Soil Screening Guidance," (SSG) for public review and comment. The SSG was developed to accelerate decision making at CERCLA and other cleanup sites by focusing investigations on exposure pathways and contaminated areas of concern and eliminating certain pathways, areas, and contaminants not of concern from more detailed assessments. The SSG provides a framework for developing site-specific screening levels for residential-based exposure scenarios.

Specific soil screening levels (SSLs), derived in accordance with the SSG, are defined as contaminant concentrations in soil below which no further action or study would generally be warranted under CERCLA. They are not intended to be cleanup levels. According to the SSG, where soil contaminant concentrations equal or exceed SSLs, further assessment, but not necessarily a cleanup, would likely be warranted.

EPA is evaluating comments on the draft guidance and intends to issue final soil screening guidance in the near future. The Agency anticipates that the SSG may also be used to develop action levels for certain RCRA corrective action facilities. For more information on the role of action levels during corrective actions, see Section III.C.2.e of today's Notice.

c. Presumptive Remedies. The Superfund program began developing presumptive remedy guidance in 1991, to use past experience to streamline cleanups. Presumptive remedies are preferred technologies for common categories of sites, based on historical patterns of remedy selection and EPA's scientific and engineering evaluation of performance data on technology implementation. The Agency expects that presumptive remedies will be used at all appropriate sites, including RCRA facilities, to help ensure consistency in remedy selection and implementation and to reduce the cost and time required to investigate and remediate similar types of sites. Several presumptive remedy guidance documents are available and have been placed in the docket for today's Notice, including: Presumptive Remedies: Policies and Procedures; Presumptive Remedy for CERCLA Municipal Landfill Sites; Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils; and, Presumptive Remedies for Soils, Sediments and Sludges at Wood Treating Sites. Future presumptive

remedy guidance documents may address sites with groundwater contamination, sites contaminated with polychlorinated biphenyl compounds (PCBs), and manufactured gas sites.

d. Community Based Remedy Selection. In an effort to increase community involvement, EPA plans to pilot a new community-based Superfund remedy selection process. Under this process, EPA will assist community groups, local governments and other stakeholders in developing consensus and becoming more directly involved in remedy selection at select Superfund sites.

During the first half of fiscal year 1996, EPA will develop guidelines and options for community-based remedy selection pilot programs at specific sites. These pilot programs will empower affected parties to play a direct role in finding a protective, cost-effective remedy for a Superfund site in their community, inform affected parties of the applicable statutory and regulatory requirements, and improve community understanding and acceptance of Superfund remedies. EPA will use the results of the Superfund community-based remedy selection pilot programs as it works to improve public participation at RCRA corrective action facilities.

7. Brownfields Initiative

EPA developed the Brownfields Economic Redevelopment Initiative to help communities revitalize abandoned, idled, or under-used industrial and commercial sites where expansion or redevelopment is complicated by environmental contamination. Through the Brownfields Action Agenda, the Agency committed to fund up to 50 Brownfield Pilot Programs to explore brownfield characterization and redevelopment strategies at the local level. The brownfields pilots will test redevelopment models, direct special efforts toward removing regulatory barriers without sacrificing protectiveness, and facilitate coordinated environmental cleanup efforts at the Federal, state and local levels. The Pilots are intended to provide EPA, states, tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment. To date, EPA has awarded 40 pilots.

EPA anticipates that many approaches to cleanup and site redevelopment evolving from the Brownfields Initiative will have direct application to the

corrective action program and the Subpart S Initiative.

8. Environmental Justice

Executive Order 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations," directs each Federal Agency to "... make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies and activities on minority populations and low income populations." In response to the Executive Order and to concerns voiced by many groups outside the Agency, EPA issued a Directive on September 21, 1994 which required that environmental justice issues be considered at all stages of policy, guidance and regulation development.

EPA has identified four main areas of environmental justice concerns within the Subpart S Initiative: (1) outreach to stakeholders, including members of affected communities, during the rulemaking process; (2) public participation on a site-specific level during the corrective action process; (3) public participation in future land-use and associated remedial decisions; and (4) ensuring the continued effectiveness of any institutional controls. The Agency recognizes that discussions of streamlining, such as those in today's Notice, often raise concerns in environmental justice communities. The Agency remains committed to identifying and addressing environmental justice concerns and to expanding public participation in the corrective action process, and would welcome the involvement of the environment justice community in development of the Subpart S Initiative.

9. Permits Improvement Team

In July 1994, EPA organized a group of state, tribal and local government officials to examine and propose improvements to EPA's permit programs. This group is known as the Permits Improvement Team. The Permits Improvement Team is examining ways to streamline the permitting process, exploring alternatives to individual permits, and evaluating ways to enhance public participation in permitting. For RCRA corrective action, the emphasis is on addressing RCRA and non-RCRA facilities in order of environmental priority, rather than having a state's priorities skewed by the RCRA permit process. For example, the RCRA permit could include a general provision to

require compliance with the state's existing environmental cleanup program. Any changes to the RCRA permitting program that result from the Permits Improvement Team's efforts will be considered as EPA implements the Subpart S Initiative.

III. Corrective Action Implementation

As discussed in Section II of today's Notice, EPA generally uses the 1990 corrective action proposal, supplemented by later guidance, as a guideline for corrective action implementation. The 1990 proposal was intended to support a flexible approach to corrective action. Unfortunately, EPA believes the proposal has at times been interpreted too narrowly, and much of the intended flexibility has been under used. In addition, the nature of the corrective action program and some of EPA's positions have evolved since 1990.

For the benefit of those involved with the corrective action program, and to provide context for the requests for comment in Section V of today's Notice, this section provides a general status report on the corrective action program, and how it has evolved since the 1990 proposal and includes guidance on a number of topics not fully addressed in 1990. It also emphasizes the flexibility inherent in the current corrective action program and encourages program implementors and facility owners/operators to take advantage of this flexibility to improve the corrective action process and expedite cleanups.

A. Program Management Philosophy

More than 5,000 facilities are subject to RCRA corrective action, over three times the number of sites on CERCLA's National Priorities List (NPL). The degree of investigation and subsequent corrective action necessary to protect human health and the environment varies significantly across these facilities. Some facilities may require no cleanup at all or only minor corrective action, while others are as complex and highly contaminated as any Superfund site. To account for the variety of corrective action facilities and site-specific circumstances, EPA has emphasized a flexible, facility-specific approach to corrective action. Few cleanups will follow exactly the same course; therefore, program implementors and facility owners/operators must be allowed significant latitude to structure the corrective action process, develop cleanup objectives, and select remedies appropriate to facility-specific circumstances. At the same time, a number of basic operating principles

guide corrective action program implementation and development.

(1) Corrective Action Decisions Should Be Based on Risk

As in most EPA programs, the Agency's fundamental goal in the corrective action program is to control or eliminate risks to human health and the environment. Risk-based decision making is especially important in the corrective action program, where it should be used to ensure that corrective action activities are fully protective given reasonable exposure assumptions and consistent with the degree of threat to human health and the environment at a given facility.

(2) Program Implementation Should Focus on Results

The purpose of the corrective action program is to stabilize releases and clean up RCRA facilities in a timely manner, not to ensure compliance with or fulfillment of a standardized process. Program implementors and facility owners/operators should focus on environmental results rather than process steps and ensure that each corrective action related activity at any given facility directly supports cleanup goals at that site. In focusing on results, program implementors are encouraged to use innovative approaches to management and oversight.

(3) Interim Actions and Stabilization Should Be Used To Reduce Risks and Prevent Exposures

A primary implementation strategy of the corrective action program is to focus resources first on stabilizing continuing releases and controlling exposure at facilities undergoing corrective action. Once a facility is stabilized, Agency oversight at that facility can be reduced and resources shifted to other facilities of concern. By focusing on stabilizing many facilities, rather than pursuing a final cleanup at a few facilities, EPA can achieve a greater overall level of human health and environmental protection in the near-term.

(4) Activities at Corrective Action Facilities Should Be Phased

Significant efficiencies can be gained by phasing corrective action at individual facilities to focus on areas of the facility that represent the greatest risk to human health and/or the environment. Phasing allows information obtained from previous phases to be used for planning and refining subsequent investigations or responses. Using a phased approach, response actions can be taken at some high-priority areas of the facility while

other lower-priority areas are addressed at a later time.

(5) Program Implementation Should Provide for Meaningful Inclusion of All Stakeholders

EPA is committed to including all stakeholders in the corrective action process. Stakeholders are included in both facility-specific decision making through public participation activities and in the development of the national corrective action program. The Agency believes stakeholder involvement is essential in all corrective action cleanups, regardless of the oversight mechanism used (e.g., order, permit, state authority, voluntary action).

(6) Corrective Action Obligations Should Be Addressed Using the Most Appropriate Tool for Any Given Facility

EPA recognizes that there are many mechanisms or tools which can be used to ensure appropriate corrective action at any given facility, including RCRA orders or permits, state cleanup orders, and voluntary cleanup programs. Each mechanism has advantages and disadvantages when applied to individual facilities. Program implementors and facility owners/operators should carefully consider these advantages and disadvantages when choosing a corrective action mechanism.

(7) States Will Be the Primary Implementors of the Corrective Action Program

Since corrective action requirements will be, predominantly, implemented by states, EPA is committed to full and meaningful state involvement in development of corrective action implementation strategies, policy, guidance and regulations.

B. Scope and Definitions

Corrective action requirements apply at hazardous waste treatment, storage and disposal facilities (TSDFs). These include permitted facilities and facilities that have, have had, or should have had RCRA interim status. This collection of facilities is typically referred to as the "corrective action universe." Corrective action may be required for releases of hazardous waste or hazardous constituents from these facilities, as necessary to protect human health and the environment. EPA does not generally require corrective action at facilities which are issued land treatment demonstration permits, emergency permits, permits-by-rule for ocean disposal, or research, development and demonstrations permits unless these facilities otherwise

become subject to RCRA operating or post-closure permitting requirements.

The 1990 proposal established EPA's views on the scope and applicability of RCRA corrective action authorities. Although EPA's views have largely remained unchanged in this area, there have been several important refinements or developments, as discussed below.

1. Concept of Parity

Most facilities in the RCRA corrective action universe are potentially subject to cleanup under numerous cleanup authorities, including state or Federal Superfund authorities. The potential for overlapping application of these authorities can cause confusion and concern in the regulated community and among state and Federal regulators. In the 1990 proposal, EPA stated that one of the Agency's primary objectives was "to achieve substantial consistency with the policies and procedures" of the Superfund remedial program. The logic behind this concept is that, since both programs address cleanup of potential and actual releases, both programs should arrive at similar remedial solutions. EPA's position is that any procedural differences between RCRA and CERCLA should not substantively affect the outcome of remediation.

Generally, cleanup of any given site or area at a facility under RCRA corrective action or CERCLA will substantively satisfy the requirements of both programs. We believe that, as a general matter, RCRA and CERCLA program implementors can defer cleanup activities from part or all of a site to one program with the expectation that no further cleanup will be required under the other program. For example, when investigations or studies have been completed under one program, there should be no need to review or repeat those investigations or studies under another program. Similarly, a remedy that is acceptable to one program can be presumed to meet the standards of the other.³ The same principle should apply to authorized state corrective action programs and state CERCLA analogous programs. Over half the states have Superfund-like authorities. In some cases, these authorities may be substantively equivalent in scope and effect to the Federal CERCLA program, and therefore are likely to be substantially equivalent to the RCRA corrective action program.

³ In some cases specific releases or constituents are not "solid wastes" under RCRA. For example, RCRA excludes from the definition of solid waste certain source, special nuclear, or byproduct material as defined by the Atomic Energy Act 42 U.S.C. § 2011.

EPA emphasized the concept of parity in a recently issued policy for deleting RCRA facilities from the NPL and deferring their cleanup to the RCRA corrective action program (60 FR 14641), available in the docket for today's Notice.⁴ EPA is planning to issue additional guidance on RCRA and CERCLA parity in an upcoming policy memo, "Coordination of RCRA/CERCLA Activities" and through the inter-agency and state "Lead Regulator Workgroup."

2. Voluntary Cleanup

EPA strongly encourages voluntary corrective actions. As discussed in the 1990 proposal, voluntary cleanups have a number of advantages, including timeliness, flexibility, and efficient use of facility owner/operator and Agency resources. Unfortunately, representatives of the regulated community have, on occasion, complained that procedural barriers have delayed cleanups they were willing to undertake voluntarily. Over the last few years, EPA and the states have taken significant steps to address this concern and to further encourage and facilitate voluntary actions. For example, EPA is planning to issue guidance on the use of state voluntary cleanup programs to address contamination at sites that may be subject to cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act including hazardous waste generators, unregulated by RCRA corrective action requirements. The Guidance for Development of Memoranda of Agreement (MOA) Language Concerning State Voluntary Cleanup Programs is being developed in partnership with interested states and will outline general principles which EPA will use when deciding whether to endorse a state voluntary cleanup program and to assure private parties that subsequent Federal action under CERCLA will not be taken except under limited circumstances.

The same general principles established in the CERCLA MOA guidance may apply to the use of state voluntary cleanup programs at facilities subject to RCRA corrective action; however, because of distinctions in statutory requirements, consideration of additional factors may be required of those programs. Issues associated with voluntary cleanups at facilities subject

to RCRA corrective action, including the use of state voluntary cleanup programs, are discussed in Section V.D.3 of today's Notice.

3. Definitions

The 1990 proposal included definitions for a number of terms which help to further define the applicability of RCRA corrective action. Pending final action on the proposal, EPA has generally continued to interpret these terms consistently with the proposal; however, as EPA has gained experience with applications in particular cases, it has refined its interpretations in some respects. The following discussion highlights the way in which these issues have been addressed in some specific situations (e.g., cases decided by the EPA Environmental Appeals Board (EAB)).

a. Facility. Under RCRA § 3004(u), corrective action is required for releases from solid waste management units at facilities seeking RCRA permits. The 1990 proposal defined "facility" as "all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA." This definition was finalized when the rule on corrective action management units (CAMUs) was promulgated (58 FR 8658, February 16, 1993) and is now codified at 40 CFR 260.10. For reasons discussed in the 1990 proposal, the term "facility" for corrective action purposes is separate and substantively different from the facility definition for other RCRA purposes.

A number of issues continue to arise regarding the application of the facility definition. A common issue is whether or not a certain parcel is considered "contiguous" for purposes of the corrective action facility definition. One such situation is the case of two parcels under common ownership but separated by a road or public right of way. In the 1990 proposal, EPA indicated it would interpret such parcels to constitute a single facility for purposes of corrective action. This approach was recently accepted by the EAB, which held that two parcels were a single facility where they were separated by a privately owned railroad line (*In re Exxon Co., USA*, RCRA Appeal No. 94-8 (EAB May 17, 1995)).

Another common scenario involves two geographically separated parcels under common ownership that are connected by ditches, bridges, or other links under the control of the facility owner/operator. In the *Exxon* permit appeal, the EAB noted the fact that the two parcels (which it found to be "contiguous" in any case) were also connected by a sewer system collecting

waste water from different parts of the facility. It pointed out that in an earlier case, evaporation ponds three miles from a refinery were treated as part of the same facility because they were linked to the refinery by a drainage ditch controlled (although not owned) by the same party. (See, *In re Navajo Refining Co.*, RCRA Appeal No. 88-3 (Adm'r June 27, 1989)). In a separate final RCRA section 3008(h) order, EPA has determined that two parcels on opposite sides of a river, but connected by a trestle, constitute a single facility for corrective action purposes. (See, *In re Sharon Steel Corp.*, Docket No. RCRA III-062-CA (Region III).)

The 1990 proposal requested comment on how the definition of facility should apply where a large parcel is owned by one party who leases a small portion to another party for a RCRA-permitted facility. In the proposal, EPA indicated that it would consider corrective action requirements to extend to SWMUs throughout the larger parcel. At the same time, EPA recognizes that there are differing views as to the policy merits of this interpretation and invites further comment in section V.C.2 of today's Notice.

b. Release. The definition of release for corrective action was first discussed in the 1985 HSWA codification rule (50 FR 28702, July 15, 1985). In the 1985 rule, EPA wrote that the definition of release for corrective action should, at a minimum, be as broad as the definition of release under CERCLA. Accordingly, EPA has interpreted the term release to mean "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment." (See, 50 FR 28713, July 15, 1985.) In the 1990 proposal, EPA clarified that the definition of release also includes abandoned or discarded barrels, containers, and other closed receptacles containing hazardous wastes or constituents and that it could include releases that are permitted under other authorities, such as the Clean Water Act. EPA continues to adhere to these interpretations of the term "release."

c. Solid Waste Management Unit. In 1990, EPA proposed to define the term "solid waste management unit" or "SWMU" to mean, "Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released." Pending resolution of the 1990 proposal EPA has used this definition in

⁴ The RCRA deletion policy does not pertain to Federal facilities, even if such facilities are also subject to RCRA Corrective Action; however, program implementors and facility owners/operators are encouraged to use interagency agreements to eliminate duplication of effort, including oversight, at Federal facilities.

corrective action implementation. The inclusion of units not specifically intended for the management of solid or hazardous waste is supported by the legislative history of RCRA sections 3004 (u) and (v), and this point has been applied in decisions by the EAB. (See, e.g., *In re General Motors Corp.*, RCRA Appeal No. 90-24 (EAB Nov. 6, 1992).)

As discussed in the 1990 proposal, not all areas where releases have occurred are considered SWMUs. In the 1990 proposal, EPA indicated a one-time spill which had been adequately cleaned up would not constitute a SWMU; on the other hand, a location at which wastes or other materials were released in a routine and systematic manner (such as a loading area where minor spills or leaks occurred routinely over time) would be a SWMU. The 1990 proposal indicated that industrial sewers used for collecting wastes would constitute SWMUs. This interpretation, which was based in part on earlier decisions in permit appeals, has been affirmed by the EAB in *In re Amoco Oil Co.*, RCRA Appeal No. 92-21 (EAB Nov. 23, 1993).

The definition of a SWMU is often a point of disagreement when corrective action permits or orders are issued. Facility owners/operators and representatives of the regulated community often argue that Congress intended the RCRA corrective action program to be focused on waste management units (i.e., SWMU) and that non-waste-management related releases (e.g., spills) should be addressed by other cleanup programs or authorities. EPA notes that authority exists for requiring corrective action for releases that are not attributable to SWMUs. Given the legislative history of RCRA section 3004(u), which emphasizes that RCRA facilities should be adequately cleaned up, in part, to prevent creation of new Superfund sites, EPA believes that corrective action authorities can be used to address all unacceptable risks to human health or the environment from RCRA facilities. In the permitting context, remediation of non-SWMU related releases may be required under the "omnibus" authority (see 40 CFR 270.32(b)(2)) which allows EPA to impose such permit conditions as are necessary to protect human health and the environment. In other contexts, orders under RCRA sections 3008(h) or 7003 may require remedial action to address releases regardless of whether a SWMU is present. Therefore, extended debate or litigation over a particular SWMU designation will in many cases be unproductive for all parties and, as a general principle, EPA discourages debate on these issues, believing that

discussions should more properly focus on whether there has been a release that requires remediation.

To reflect a more holistic approach, permits and orders often use the term "area of concern" to refer to releases which warrant investigation or remediation under the authorities discussed above, regardless of whether they are associated with a specific SWMU as the term is currently used. For example, when an overseeing agency believes one-time spills of hazardous waste or hazardous constituents have not been adequately cleaned up, these releases are often addressed as areas of concern.

d. Hazardous Waste and Hazardous Constituent. RCRA section 3004(u) requires corrective action for releases of "hazardous wastes or constituents." As discussed in the 1990 proposal, EPA interprets the term "hazardous waste," as used in RCRA section 3004(u) to include all wastes that are hazardous within the statutory definition in RCRA section 1004(5), not just those that are either listed or identified by EPA pursuant to RCRA section 3001.

EPA also used the 1990 proposal to discuss use of the phrase "or constituents" in RCRA section 3004(u). EPA views this phrase as significant in two ways. First, it indicates that Congress was particularly concerned that, within the broad category of wastes that might be "hazardous" within the statutory definition, the corrective action authority should be used to address the specific subset of "hazardous constituents." Second, it indicates that the corrective action authority was not intended to be limited to hazardous waste, and extends to hazardous constituents regardless of whether they also fall within the term "hazardous waste," or whether they were derived from hazardous waste. Under this interpretation, constituents that were contained within nonhazardous solid wastes may be addressed through corrective action.

C. Corrective Action Process

The corrective action process discussed in the 1990 proposal was structured around five elements common to most cleanup activities: initial site assessment, site characterization, interim actions, evaluation of remedial alternatives, and implementation of the selected remedy. These elements typically occur, to one degree or another, during most cleanups. As discussed in the 1990 proposal, EPA emphasizes that no one approach to implementing these cleanup elements is likely to be appropriate for all corrective action

facilities; therefore, a successful corrective action program must be procedurally flexible. In addition, these cleanup elements should not become ends in themselves; EPA continues to encourage program implementors and facility owners/operators to focus on the desired result of a cleanup rather than a mechanistic cleanup process. These five elements should be viewed as evaluations necessary to make good cleanup decisions, not prescribed steps along a path.

1. Initial Site Assessment

The first element in most cleanup programs is an initial site assessment. During the initial site assessment information is gathered on site conditions, releases, potential releases, and exposure pathways to determine whether a cleanup may be needed and to identify areas of potential concern. Overseeing agencies may also use initial site assessments to set relative priorities between sites and allocate oversight and other resources.

In the CERCLA program, the initial site assessment is called a Preliminary Assessment/Site Investigation, or PA/SI; in the corrective action program, it is referred to as a RCRA Facility Assessment or RFA. During an RFA, an overseeing agency typically compiles existing information on environmental conditions at a given facility and, as necessary, gathers additional facility-specific information on solid waste management units and other areas of concern, releases, potential releases, release pathways, and receptors. Information gathered during an RFA usually forms the basis for initiating full scale site characterization

a. Facility Owners/Operators May Gather RFA Information. At the time to today's Notice, EPA and the states have completed 3,534 RFAs at RCRA facilities. In the past, EPA has been reluctant to allow facility owners/operators to conduct RFAs because of concern over the adequacy of the facility submissions; however, by now the RFA is a well developed process and EPA believes it may be more reasonable to accept the work of facility owners/operators. Where RFAs have not yet been completed, facility owners/operators may choose to conduct their own site assessment and submit the report to EPA for review. If EPA believes the site assessment is adequate, the site assessment may be approved and adopted as the RFA for the facility. In the same way, when an RFA was completed some years ago, a facility owner/operator might conduct a site assessment to update the RFA and submit it to EPA for review, approval

and adoption as an RFA update. Facility owners/operators who choose to conduct or update their own RFAs should ensure that they address all solid waste management units and other areas of concern at the facility. Guidance on the scope of RFAs is available in "RCRA Facility Assessment (RFA) Guidance" EPA/530/SW-86/053, PB87-107769, October 1986, which has been placed in the docket for today's Notice. Facility owners/operators who want to obtain a copy of the RFA conducted for their facility should contact the appropriate EPA Regional Office or their authorized state.

b. Release Assessment. Release assessments (sometimes referred to as Phase 1 assessments) are used to confirm or reduce uncertainty about solid waste management units, areas of concern, and potential releases identified during the initial site assessments. Under the corrective action process as originally conceived, program implementors and facility owners/operators would typically move directly from the initial site assessment to full scale site characterization. As program implementors and facility owners/operators have gained experience in corrective action implementation, they have often found it advantageous to conduct a limited release assessment after the RFA but before full scale site characterization, to focus subsequent investigations or eliminate certain units or areas from further consideration. Release assessments can be especially helpful in cases where the RFA is old or where the overseeing agency and the facility owner/operator disagree about inclusion of one or more units, areas, or releases in the site characterization.

Information collected during a release assessment can be used to focus site characterizations on the areas and releases and exposure pathways which constitute the greatest risks or potential risks to human health and the environment and to eliminate areas from consideration during site characterization. For example, an initial site assessment could identify an old waste pile as a solid waste management unit. The facility owner/operator might present information showing that the waste in the pile had been removed; however, there may be little or no information to confirm that releases from the unit (if any) were adequately addressed during waste removal. The facility owner/operator could, during a release assessment, conduct highly focused sampling at the unit to confirm that releases either had not occurred or were adequately remediated.

c. National Corrective Action Prioritization System. Implementing agencies often use initial site assessments to set priorities for limited oversight resources. In the corrective action program, EPA sets priorities using the National Corrective Action Prioritization System (NCAPS). NCAPS priorities are generally based on information gathered during the RFA. Because of the number of facilities subject to corrective action, the variety of facility-specific conditions, and the limitations on Agency oversight resources, careful prioritization is essential. The Agency's policy is to focus its corrective action resources first on facilities and areas at facilities which present the greatest relative risk to human health and the environment. Accordingly, NCAPS considers the environmental setting of a facility and potential receptors, actual and potential releases of hazardous wastes or constituents from the facility, and the toxicity of constituents of concern to group facilities into high, medium and low priority groups.

NCAPS rankings are based on risk, but NCAPS does not involve a traditional site-specific risk assessment. NCAPS is a resource management tool that EPA and authorized states use to set relative priorities among corrective action sites to focus limited agency resources. Currently 40% of facilities subject to corrective action are considered high priority, 30% medium, and 30% low.

2. Site Characterization

Before cleanup decisions can be made, some level of characterization is necessary to ascertain the nature and extent of contamination at a site and to gather information necessary to support selection and implementation of appropriate remedies. In the CERCLA program, this step is referred to as the Remedial Investigation or RI; in the RCRA program, the RCRA Facility Investigation or RFI.

Carefully designed and implemented RFIs are critical to accurately characterize the nature, extent, direction, rate, movement, and concentration of releases at a given facility; this information is needed to determine potential risks to human health and the environment and support development and to implementation of corrective measures should they prove necessary. It can also be used to eliminate facilities which are shown not to present unacceptable risks from further consideration. A successful RFI will identify the presence, movement, fate, and risks associated with environmental contamination at a site

and will elucidate the chemical and physical properties of the site likely to influence contamination migration and cleanup.

The 1990 proposal outlines the types of information which may be required during a remedial investigation. As discussed in the 1990 proposal, program implementors and facility owners/operators should gather the information necessary to support cleanup decisions; collection of all the information discussed in the 1990 proposal will not be necessary at most facilities.

Experience in corrective action implementation has demonstrated that poorly focused investigations can become a drain on time and resources and, in some cases, unnecessarily delay remedial actions. EPA emphasizes that remedial investigations should be tailored to the specific conditions and circumstances at the facility and focused on the units, releases, and exposure pathways of concern. For example, in delineating the extent of contamination it may not be necessary to delineate to background concentrations in all cases. In some cases, information adequate to support cleanup decisions can be obtained through delineation to risk-based concentrations or other investigation endpoints. For example, an investigation endpoint might be based on the presence or absence of a competent confining layer rather than constituent concentrations.

EPA has found a number of approaches to be particularly helpful in developing focused site investigations, as discussed below.

a. Conceptual Site Models. Site investigations and remedy implementation are often most successful when based on a "conceptual site model." A conceptual site model is a three-dimensional picture of the conditions that conveys what is known or suspected about the sources, releases and release mechanisms, contaminant fate and transport, exposure pathways and potential receptors, and risks. The conceptual site model is based on the information available at any given time and will evolve as more information becomes available. The conceptual site model may be used to present hypotheses that additional investigations could confirm or refute, to support risk-based decision-making, and to aid in identification and design of potential remedial alternatives.

The conceptual site model is not a mathematical or computer model, although these tools often prove helpful in visualizing current information and predicting future conditions. The conceptual site model can be

documented by written descriptions of site conditions and supported by maps, cross sections, analytic data, diagrams of the site that illustrate actual or potential receptors, and other descriptive tools.

The conceptual site model is dynamic and should be tested and refined from the very first stages of corrective action to the point at which the site has been remediated and no longer presents a threat to human health or the environment. The RCRA Facility Assessment often forms the basis for the first conceptual model of the site. At this stage, the model should be used as a tool to compile available and relevant information and to identify the urgency and scope of subsequent investigations as well as interim actions. One use of the conceptual site model could be to ensure that site conditions are consistent with the underlying assumptions that were used to develop standardized action levels (see Section III.C.2.e). The model can also be used to support phasing of site investigations to ensure data collection efforts address the most important information needs. In addition, a conceptual site model can be a critical tool for evaluating remedy performance.

More detailed guidance on the development and use of the conceptual site model is available in "Guidance for Evaluating the Technical Impracticability of Ground Water Restoration" (EPA/540-R-93-080). Additional guidance on using conceptual models will be included in the upcoming Soil Screening Guidance (see, Section II.F.6.b).

b. Innovative Site Characterization Technologies. In the 1990 proposal, EPA recommended a focused approach to site characterization activities. EPA continues to support data collection approaches that focus on information needed to support decisions. The Agency has seen tremendous improvements in site characterization efficiency when innovative approaches are used, especially those that rely on rapid sample collection (e.g., direct-push technologies) and on-site analytical techniques (e.g., sensor technologies, assay kits, field gas chromatography/mass spectrometry (GC/MS), X-ray fluorescence). Depending on the data quality objectives for a particular site, confirmatory laboratory analyses may also be necessary. Data quality objectives are discussed in Section III.C.2.c, below.

The benefits of using innovative site characterization technologies are magnified when a work plan is used only to convey strategies, methods, data quality objectives, and general areas

subject to investigation, and exact sample locations are left to be determined based on iterative on-site data collection and analysis. Some of the benefits of using innovative characterization techniques along with iterative decision-making include: Rapid sample collection and analysis allowing for on-site decision making and optimization of the investigation effort; enhanced three-dimensional understanding of the site because of the greater number of data points available for a given commitment of resources; better identification of actual or potential risks to human health and environmental receptors; and, more rapid assessment of the need for interim actions.

Program implementors and facility owners/operators should take advantage of innovative characterization technologies. Likewise, EPA encourages implementing officials to be receptive to innovative approaches which can significantly improve the quality as well as the cost- and time-effectiveness of site characterization.

c. Tailored Data Quality Objectives. Program implementors and facility owners/operators should tailor data gathering strategies to the purpose for which the data will be used. The overall degree of data quality or uncertainty that a decision maker is willing to accept is referred to as the Data Quality Objective (DQO) for a decision. The DQO is used to specify the quality of the data, usually in terms of precision, bias, representativeness, comparability and completeness. The DQO approach applies to the entire measurement system (e.g., sampling locations, methods of collection and handling, field analysis, etc.), not just to laboratory analytical operations. In general, EPA has found that DQOs can and should be used to ensure that environmental data are scientifically valid, defensible, and of an appropriate level of quality given the intended use for the data.

Program implementors and facility owners/operators using innovative site characterization and assessment approaches should pay particular attention to DQOs. For example, an objective of the early stages of an investigation could be to identify the presence of gross contamination. In this context, a DQO could include a higher method detection limit (e.g., part per million) that could be obtained with cost-effective field screening technologies. In contrast, a very low method detection limit (part per billion or even trillion) could be an appropriate DQO to determine if groundwater is fit for human consumption.

EPA encourages program implementors and facility owners/operators to use the DQO approach to define adequate data collection for corrective action decisions. EPA has found that site investigations can be expedited considerably when DQOs are carefully established. For additional information on incorporating DQOs in the decision-making process at RCRA facilities, see Chapter One of SW-846 (Chapter One of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition as amended by Update I, July 1992); "Final Guidance for the Data Quality Objective Process" EPA QA/G-4, September 1994; and, "Quality Assurance Project Plans for RCRA Ground-Water Monitoring and Corrective Action Activities" EPA, Sylvia Lowrance and H. Matthew Bills, July 1993, available in the docket for today's Notice.

d. Use of Existing Information to Streamline the Remedial Investigation. Many RCRA facility owners/operators have collected information on physical characteristics or on the nature and extent of contamination at the facility outside of the RCRA corrective action process. Information on site conditions may have also been obtained by entities other than the facility owner/operator. As a general principle, information that is not time dependent should not be collected again; EPA encourages the incorporation of pertinent existing information into the corrective action process. For example, many states have required facilities to conduct groundwater investigations under state laws for units that are not regulated units under RCRA; this information can often be easily incorporated into a corrective action investigation. Similarly, information collected through a state Superfund process is also generally of appropriate quality to be directly useable to support corrective action decisions.

Information that is relevant to corrective action may exist in reports or formats that are not traditionally used for RCRA corrective action. For example, engineering boring logs may have been generated on the facility by local utility companies, or by the facility itself during building construction. Provided data and information are submitted in a usable format, state or Federal agencies overseeing RCRA corrective actions should not require adequate information to be recollected or reformatted.

Facility owners/operators who are developing site characterization or other information independently are urged to document the quality of their information carefully. Thorough

documentation of data quality will increase its usefulness in the corrective action process. Use of existing information can reduce costs of conducting investigations and increase the speed of corrective action cleanups.

To determine whether existing data is appropriate for corrective action decisions, the nature and quality of the information should be assessed in view of the goals of the corrective action investigation. Where DQOs have been established, existing data can be assessed against DQOs to determine their adequacy. For example, the DQO for a specific corrective action decision could be a minimum analytical detection limit that is considerably lower than that used in an existing study. In this case, non-detects in the existing data could not be used to justify no action; however, the existing data could be used to determine "hot-spots" and to plan a second phase study using a more sensitive analytical method. On the other hand, if the detection limits were below an acceptable risk level and no constituents were detected, re-sampling would not typically be required—even if more sensitive methods were available.

EPA regions and states are currently incorporating existing information into ongoing corrective actions. If the regulatory agencies are aware of pertinent existing information at the time of issuance of a permit or order, they have the option of explicitly referencing the relevant information in the facility investigation requirements of the permit or order or, if the data are of sufficient quality and quantity, stating that the data fulfill site investigation needs. In some cases, the facility owner/operator will inform the overseeing agency of existing information; EPA or the states have the option of redirecting any investigations based upon the relevance of this information.

e. Role of Action Levels. At certain facilities subject to corrective action, contamination will be present at concentrations that may not justify further action. For this reason, EPA has, in some cases, used the concept of "action levels" as a trigger mechanism for conducting additional corrective action activities (e.g., additional investigations, evaluation of remedial alternatives, site-specific risk assessments). Under this approach, contamination found in a particular medium below an appropriate action level would not generally be subject to remediation or further study.

Action levels are health- or environmental-based concentrations derived using chemical-specific toxicity information and standardized exposure

assumptions. Action levels are often established at the more protective end of the risk range (e.g., 10^{-4}) using conservative exposure and land use assumptions; however, action levels based on less conservative assumptions could be appropriate based on site-specific conditions. For example, if the current and reasonably anticipated future uses of a site are industrial, an action level based on industrial exposure scenarios could be appropriate.

Action levels can be developed on a facility-specific basis or can be taken from standardized lists. Currently, some states and EPA Regions have developed standardized lists of action levels or cleanup levels (standardized cleanup levels can serve as action levels) for RCRA corrective action facilities and other cleanup sites. One of the earlier and more widely distributed lists of action levels was developed by EPA and included in Appendix A of the preamble to the 1990 proposal. Since 1990, toxicity research has progressed; accordingly, some of the action levels included in the 1990 proposal may no longer be appropriate. In addition, the action levels in the 1990 proposal were based on residential land-use assumptions which may not be appropriate at all corrective action facilities. Program implementors and facility owners/operators should ensure that action levels used at RCRA corrective action facilities reflect up-to-date toxicity information and that action level assumptions are consistent with the physical conditions and current or reasonably anticipated exposure assumptions at any given facility. For example, risk to ecologic receptors is not accounted for in the action levels included in the 1990 proposal. If ecologic risks are a concern at a given corrective action facility, program implementors and facility owners/operators should consider developing facility-specific action levels to account for ecologic risk issues.

EPA has found that action levels are most beneficial when they are available during the planning stages of site investigations. In the 1990 proposal, the Agency indicated that it would be advantageous to include action levels in corrective action permits to give facility owners/operators and the public an indication of contaminant concentrations that would likely trigger additional study or corrective measures. At the same time, the Agency recognized that, in some cases, including action levels in corrective action permits would not be necessary (e.g., when available information establishes the need for an analysis of

remedial alternatives). Program implementors and facility owners/operators have the flexibility to determine whether or not to include action levels in corrective action permits and orders.

In Section V of today's Notice, EPA requests comments on the use of action levels and the role of the Federal government in promoting national consistency by developing, maintaining, and distributing action levels (as well as media cleanup levels) or standardized protocols for developing site-specific levels.

f. Integration With the Evaluation of Remedial Alternatives. At most sites, likely remedial strategies will become clear during the initial site assessment and subsequent site characterization. To expedite the corrective action process, EPA encourages program implementors and facility owners/operators to focus data gathering during site characterization on information needed to support plausible remedies. This strategy is discussed more fully in Section III.C.4.a of today's Notice.

3. Interim Actions

Since the 1990 proposal, EPA has increasingly emphasized the importance of interim actions and site stabilization in the corrective action program. Many cleanup programs, including RCRA and CERCLA, recognize the need for interim actions while site characterization is underway or before a final remedy is selected. Typically, interim actions are used to control or abate ongoing risks to human health or the environment in advance of final remedy selection. For example, actual or potential contamination of drinking water supplies might necessitate an interim action to provide alternative drinking water sources. Similarly, hazardous waste or constituents stored in poorly maintained or damaged drums or tanks might require an interim action to stabilize (e.g., by overpacking) or remove the damaged containers. The concept of interim actions is especially appropriate to facilities subject to RCRA corrective action, since many facilities in the corrective action universe are operating industrial facilities, where a final facility cleanup might not be completed for many years.

One of EPA's overriding goals in managing the corrective action program is to expedite risk reduction by emphasizing early implementation of interim actions to control or minimize ongoing threats to human health or the environment. The importance of interim actions at RCRA corrective action facilities is further emphasized in the Agency's Stabilization Initiative

discussed in Section II.E.1 of today's Notice.

Interim actions at RCRA facilities can include a wide range of activities such as source removal, installation of a pump and treat system, and institutional controls. In accordance with the Stabilization Initiative, interim actions should be employed as early in the corrective action process as possible, consistent with the environmental objective and priorities for the site; as further information is collected, program implementors and facility owners/operators should continue to look for opportunities to conduct additional interim actions. Generally, interim actions should be compatible with, or a component of, the final remedy.

4. Evaluation of Remedial Alternatives

Contamination at most cleanup sites can be addressed using a number of remedial alternatives, each of which would present advantages and disadvantages. Before choosing a cleanup approach, program implementors and facility owners/operators will typically analyze a range of alternatives and evaluate their advantages and disadvantages relative to site-specific conditions. In the CERCLA program the identification and evaluation of remedial alternatives is referred to as the Feasibility Study or FS; in the RCRA corrective action program, the Corrective Measures Study or CMS.

The purpose of a Corrective Measures Study is to identify and evaluate potential remedial alternatives for facilities undergoing corrective action. During the CMS, program implementors and facility owners/operators typically evaluate one or more remedial alternatives based on site-specific conditions and select a preferred remedial alternative as the remedy. The CMS does not necessarily have to address all potential remedies for every corrective action facility. EPA advises program implementors and facility owners/operators to focus corrective measures studies on realistic remedies and to tailor the scope and substance of studies to the extent, nature and complexity of releases and contamination at any given facility. For example, some potential remedies should not be considered because they are simply implausible. In cases where EPA has identified a presumptive remedy (presumptive remedies are discussed in Section II.F.6.c of today's Notice), the purpose of the CMS will be to confirm that the presumptive remedy is appropriate to facility-specific conditions. In cases where EPA or a

state is using performance standards or a similar approach, the Agency might not require submission or approval of a formal CMS at all. EPA continues to emphasize that it does not want studies to be undertaken simply for the purpose of completing a perceived step in a perceived process. While, for a complex site, review of a full range of remedial alternatives may be required, at many sites, the preferred remedial approach will be apparent early in the cleanup process and the analysis of remedial alternatives should be highly focused.

In implementing the corrective action program, EPA has found a number of opportunities to significantly increase the efficiency of corrective measures studies, as discussed below.

a. Integration With Site Characterization. EPA continues to emphasize that the components of corrective action (e.g., release assessment, RFI, CMS) should not be viewed as isolated steps in a linear process. In the Agency's experience, it is generally more efficient to focus data collection on information needed to support an appropriate, implementable remedy than to attempt to complete separate evaluations at each step. As remedial alternatives are considered during a CMS, the facility owner/operator might find additional site characterization necessary. Similarly, the earlier in the corrective action process potential remedies can be identified, the more effectively information gathering can be focused. For example, in a situation where the contamination being addressed involves a large mixed fill landfill, the remedial alternatives will likely involve physical and institutional controls. These alternatives should be identified early in the RFI enabling the facility owner/operator to tailor the RFI toward collection of information necessary to support development of appropriate physical controls. In other cases, a facility may have relatively limited soil contamination or old solid waste management units which the facility owner/operator desires to remove all contaminated material for treatment and disposal off-site. In these cases, the RFI might be focused on removal options and analysis of other alternatives would not be necessary. Other benefits associated with combination of the RFI and CMS can include cost savings associated with consolidation of reports and other documents, and time savings associated with concurrent rather than sequential analysis. The 1990 proposal and the 1990 RCRA Corrective Action Plan discuss other situations where the CMS could be combined with site characterization, including:

(1) "Low risk" facilities. These are facilities where environmental problems are relatively small and where releases present minimal exposure concerns. Such facilities might have limited on-site soil contamination;

(2) Facilities where removal remedies have been proposed by the owner/operator. For example, at a facility where there is contaminated soil and the owner/operator proposes to excavate all the contaminated soil for subsequent off-site recycling, treatment or disposal;

(3) Facilities with straightforward remedial solutions or where presumptive remedies, as discussed in Section II.F.6.c of today's Notice, can be applied. These are facilities where standard engineering solutions, which have proven effective in similar situations, may be appropriately applied;

(4) Facilities where few remedial options are available. This includes situations where there are few practicable remedial solutions; and,

(5) Facilities where the remedy is phased.

b. Formal Evaluation Not Always Necessary. At some facilities the CMS does not have to be submitted to an overseeing agency for review and approval in favor of a performance-based approach. In these scenarios, the overseeing agency (e.g., EPA or a state) might oversee the facility investigation to ensure that all releases and potential releases from the facility are adequately identified and characterized and that adequate remedial goals are developed for the facility. After the remedial goals undergo public review and comment and are approved by the overseeing agency, the facility owner/operator would design and implement a remedy sufficient to meet the remedial goals without direct agency oversight.

For example, the remedial investigation at a facility may reveal widespread groundwater contamination caused by a release from an old surface impoundment. The remedial goals for the facility might be to control the source contaminating the groundwater, contain the groundwater plume, and restore groundwater quality to specified cleanup levels. Media cleanup levels would be included in the remedial goal and the facility owner/operator would be required to conduct remedial activities in a manner which involves the affected public in a meaningful and timely way. The facility owner/operator would then design and implement a remedy (and a public participation plan). In this example, while the facility owner/operator might analyze a number of alternatives, the overseeing agency would not ordinarily second-guess the

remedial choice (since the agency had been involved in developing the performance standards). Instead, the overseeing agency would monitor compliance with the remedial goals. If the remedial goals or milestones were not met in the required performance period, additional remediation measures would likely be required. EPA favors performance-based approaches provided that the remedial goals for the facility are clear, the oversight during remedy implementation is appropriate to the complexity of the facility-specific circumstances, and the public is substantively involved. Many states, in particular the State of Georgia, attribute the success of their corrective action programs, in part, to eliminating Agency review and approval of the CMS as a step in the corrective action process in favor of a performance-based approach.

c. Facility Owner/Operator Should Recommend a Preferred Remedy. EPA emphasizes that it expects facility owners/operators to develop and recommend remedies or remedy performance standards (if a performance-based model is being used), including proposed media cleanup levels, points of compliance and compliance time frames, that address the proposed threshold criteria and present an advantageous combination of the proposed balancing criteria. During remedy selection, EPA will consider the facility owner/operator's preferred remedial alternative, other remedial alternatives and public comment. Although it is the responsibility of the facility owner/operator to develop and recommend a preferred remedial alternative or remedy performance standard, the Agency can reject any alternative and require further analysis or prescribe a different remedial alternative or remedy performance standard.

5. Remedy Selection

Remedies should be protective of human health and the environment, and maintain protection over time. In meeting this remedial goal, EPA has learned that certain combinations of facility-specific circumstances are often addressed by similar approaches. Based on this experience, the Agency has developed certain expectations for remedies. Remedy expectations are not binding requirements; rather, they reflect collective experience and guide development of remedial alternatives. For example, the fact that remedies for highly mobile contaminants often involve some form of treatment does not preclude a non-treatment option; however, expectations developed from past experience can focus program

implementors and facility owners/operators on the more generally acceptable remedial options. In effect, the remedial expectations allow program implementors and facility owners/operators to profit from prior EPA experience and focus resources on the most plausible remedial alternatives. Many of these expectations were first articulated in the discussion of remedy selection at CERCLA sites in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 430(a)(1)). The remedial expectations discussed below express EPA's experiences to date given our current remedial goals and remedy selection strategies; however, the Agency recognizes that issues associated with remedial goals and strategies are currently the subject of considerable public debate, i.e., in Congressional discussions of Superfund reauthorization. Since EPA is committed to consistency of results between the RCRA corrective action and Superfund remedial programs, any revisions to the CERCLA remedial expectations or the CERCLA remedy selection process will likely be incorporated into RCRA corrective action. Currently, EPA has the following remedial expectations:

(a) EPA expects to use treatment to address the principal threats posed by a site whenever practicable and cost-effective.⁵ Contamination that represents principal threats for which treatment is most likely to be appropriate includes contamination that is highly toxic, highly mobile, or cannot be reliably contained, and that would present a significant risk to human health and the environment should exposure occur.

(b) EPA expects to use engineering controls, such as containment, for wastes and contaminated media which can be reliably contained, pose relatively low long-term threats, or for which treatment is impracticable.

(c) EPA expects to use a combination of methods (e.g., treatment, engineering and institutional controls), as appropriate, to achieve protection of human health and the environment.

(d) EPA expects to use institutional controls such as water and land use restrictions primarily to supplement engineering controls as appropriate for short- and long-term management to prevent or limit exposure to hazardous wastes and constituents. EPA does not expect that institutional controls will often be the sole remedial action.

(e) EPA expects to consider using innovative technology when such technology offers the potential for comparable or superior treatment performance or implementability, less adverse impact, or lower costs for acceptable levels of performance when compared to more conventional technologies.

(f) EPA expects to return usable groundwaters to their maximum beneficial uses wherever practicable, within a time frame that is reasonable given the particular circumstances of the site. When restoration of groundwater is not practicable, EPA expects to prevent or minimize further migration of the plume, prevent exposure to the contaminated groundwater and evaluate further risk reduction. EPA also expects to control or eliminate surface and subsurface sources of groundwater contamination.

(g) EPA expects to remediate contaminated soils as necessary to prevent or limit direct exposure of human and environmental receptors and prevent the transfer of unacceptable concentrations of contaminants (e.g., via leaching, runoff or air borne emissions) from soils, including subsurface soils, to other media.

In addition to experiences recorded in the remedial expectations, EPA routinely encounters a number of issues associated with remedy selection, as discussed below.

a. Balancing Treatment and Exposure Control. Risk is a function of toxicity and exposure; therefore, risk reduction can be accomplished by reducing toxicity (e.g., through treatment to reduce toxicity, mobility or volume) and/or preventing exposure (e.g., through engineering and institutional controls). Program implementors and facility owners/operators often struggle to find an appropriate balance between these approaches.

While preventing exposure may appear to be the most direct near-term means of reducing risk, permanent reduction of the toxicity, mobility and/or volume of contaminated material might be the most cost-effective means of reducing risk over time. For example, at a facility where the remedy relies in part, on engineering controls to prevent exposure there could be: associated operation and maintenance costs; the need to maintain the RCRA facility permit for the life of the remedy; increased Agency involvement to monitor the continued effectiveness of the remedy; and, need for institutional controls. When treatment to reduce toxicity, mobility or volume is chosen EPA does not necessarily expect the remedy to involve treatment alone. For

⁵ The term "cost-effective" does not necessarily imply least costly.

example, highly toxic contaminated material could be treated so that the concentrations of hazardous constituents, while still above media cleanup levels, would support a reliable containment remedy.

The exact balance between reduction in toxicity, mobility or volume and exposure control will best be established on a case-by-case basis in consideration of site-specific conditions; however, all things being equal, permanent reductions in toxicity, mobility or volume are preferred to exposure control because it is protective of human health and the environment in the long-term and removes the risks associated with the potential failure of engineering or institutional controls. Program implementors and facility owners/operators are cautioned against too great a reliance on exposure control remedies when alternatives which include permanent reduction in toxicity, mobility or volume are available, affordable and practical. Additional information on the balance between toxicity reduction and exposure control is available in "A Guide to Principal Threat and Low Level Threat Wastes," Superfund Publication 9380.3-06FS, November 1991, which is available in the docket for today's Notice.

b. Remedy Selection Criteria. The 1990 proposal, like the Superfund NCP, established a two-phased evaluation for remedy selection. During the first phase, potential remedies are screened to see if they meet "threshold criteria"; remedies which meet the threshold criteria are then evaluated using various "balancing criteria" to identify the remedy that provides the best relative combination of attributes. While the CERCLA remedy selection criteria are not identical to the RCRA corrective action criteria proposed in 1990, they address the same types of considerations and should generally result in similar remedies when applied to similar site-specific conditions.

The 1990 proposal identified four remedy threshold criteria and five balancing criteria. The four threshold criteria proposed in 1990 were that all remedies must: (1) be protective of human health and the environment; (2) attain media cleanup standards; (3) control the source(s) of releases so as to reduce or eliminate, to the extent practicable, further releases of hazardous waste (including hazardous constituents) that might pose threats to human health and the environment; and (4) comply with applicable standards for waste management. EPA believes these threshold criteria remain appropriate as

general goals for cleanup and screening tools for potential remedies.

There has been some confusion regarding the proposed threshold criterion that remedies attain media cleanup standards. Attaining media cleanup standards does not necessarily entail removal or treatment of all contaminated material above specific constituent concentrations. Depending on the site-specific circumstances, remedies may attain media cleanup standards through various combinations of removal, treatment, engineering and institutional controls. For example, in situations where waste is left in place in an engineered landfill or under a cap, media cleanup standards would be attained, in part, through long-term engineering and institutional controls.

The 1990 proposal identified five balancing criteria for choosing among remedies that meet the threshold criteria. The five balancing criteria proposed in 1990 were: (1) Long-term reliability and effectiveness; (2) reduction of toxicity, mobility or volume of wastes; (3) short-term effectiveness; (4) implementability; and (5) cost. The balancing criteria were not ranked in terms of relative importance. As discussed in the 1990 proposal, any one of the balancing criteria might prove to be the most important at a particular site. For example, a remedy at a certain site might be protective in the short term but not necessarily reliable in the long term (e.g., capping of a highly contaminated area). In this case, the need for long term reliability and the potential for long-term operation and maintenance costs would tend to point toward a remedy which presented a more advantageous combination of the balancing criteria (e.g., removal or treatment of hot spots, capping residual contamination, and implementing an institutional control).

The proposed balancing criterion of cost has caused some confusion. Cost can and should be considered when choosing among remedies which meet the threshold criteria. As discussed in the 1990 proposal, EPA believes that many potential remedies will meet all the threshold criteria. In that situation, cost becomes an important consideration in choosing the remedy which most appropriately addresses the circumstances at the facility and provides the most efficient use of Agency and facility owner/operator resources. For cost comparisons between alternatives to be accurate, they should include capital and operation and maintenance costs for the anticipated life of the remedy.

Pending resolution of the 1990 proposal, program implementors and

facility owners/operators should use the threshold and balancing criteria proposed in 1990 as guidance when selecting facility-specific remedies; however, as discussed in Section V of today's Notice, EPA is also considering and requesting comment on a number of alternatives for corrective action remedy selection, including focusing on remedy performance standards. These alternatives are based, in part, on innovative approaches already used in some states and EPA Regions.

c. Media Cleanup Standards. The term "media cleanup standards" typically refers to broad cleanup objectives; it often includes the more specific concepts of "media cleanup levels," "points of compliance," and "compliance time frames." The more specific term, "media cleanup levels" typically refers to site- and media-specific concentrations of hazardous constituents, developed as part of the overall cleanup standards for a facility. Media cleanup standards (and levels) should reflect the potential risks of the facility and media in question by considering the toxicity of the constituents of concern, exposure pathways, and fate and transport characteristics.

Consistent with the CERCLA program, in the RCRA corrective action program EPA intends to clean up sites in a manner consistent with available, protective, risk-based media cleanup standards (e.g., MCLs and state cleanup standards) or, when such standards do not exist, to clean up to protective media cleanup standards developed for the site in question (e.g., through a site-specific risk assessment). Both approaches require a site-specific risk-based decision. When available media cleanup standards are used (e.g., MCLs, state cleanup standards), the assumptions used to develop the standardized cleanup values should be consistent with the site-specific conditions at the facility in question.

As discussed in the NCP and the 1990 proposal, EPA's risk reduction goal is to reduce the threat from carcinogenic contaminants such that, for any medium, the excess risk of cancer to an individual exposed over a lifetime generally falls within a range from 10^{-6} to 10^{-4} . In other words, an exposed individual will have an estimated upperbound excess probability of developing cancer of one in one-million, to 10^{-4} , or an exposed individual will have an estimated upperbound excess probability of developing cancer of one in ten-thousand. For non-carcinogens, the hazard index should generally not

exceed one (1).⁶ Available risk-based media cleanup standards are considered protective if they achieve a level of risk which falls within the 10^{-6} to 10^{-4} risk range.

EPA's preference, all things being equal, is to select remedies that are at the more protective end of the risk range. Therefore, program implementors and facility owners/operators should generally use 10^{-6} as a point of departure when developing site-specific media cleanup standards. Use of 10^{-6} as a point of departure does not establish a strict presumption that all final cleanups will necessarily attain that level of risk reduction. Given the diversity of the corrective action universe and the emphasis on consideration of site-specific conditions such as exposure, uncertainty, or technical limitations, the Agency expects that other risk reduction goals may be appropriate at many corrective action facilities. As discussed in the 1990 proposal, EPA endorses "an approach [to remedy selection] that allows a pragmatic and flexible evaluation of potential remedies at a facility while still protecting human health and the environment. This approach emphasizes the overall goal of 10^{-6} as the point of departure, while allowing site or remedy-specific factors, including reasonable foreseeable future uses, to enter into the evaluation of what is appropriate at a given site." (See, 55 FR 30826.)

d. Points of Compliance. As proposed in 1990, the point of compliance (POC) is the location or locations at which media cleanup levels are achieved. In the absence of final corrective action regulations specifically addressing points of compliance, program implementors and facility owners/operators develop POCs on a site-specific basis. For air releases, program implementors and facility owners/operators have generally used the location of the person most exposed, or other specified point(s) of exposure closer to the source of the release. For surface water, program implementors and facility owners/operators have routinely established the POC at the point at which releases could enter the surface water body; if sediments are affected by releases to surface water, a sediment POC is also established. Points of compliance for soils are generally

⁶ The hazard index is a measurement of non-carcinogenic risks. It is calculated by summing two or more hazard quotients for multiple substances and/or multiple exposure pathways. A hazard quotient is the ratio of a single substance exposure level over a specified time period to a reference dose for that substance derived from a similar exposure period.

selected to ensure protection of human and environmental receptors against direct exposure and to take into account protection of other media from cross-media transfer (e.g., via leaching, runoff or airborne emissions) of contaminants. For groundwater, program implementors and facility owners/operators generally set the POC throughout the area of contaminated groundwater or, when waste is left in place, at and beyond the boundary of the waste management area encompassing the original source(s) of groundwater contamination. This approach to the groundwater POC is generally referred to as the "throughout the plume/unit boundary POC." This approach is consistent with the groundwater POC described in the preamble to the Superfund program's National Oil and Hazardous Waste Contingency Plan (NCP, pages 8713 and 8753, Federal Register March 8, 1990). EPA recommends consideration of the following factors when developing a site-specific groundwater POC: proximity of sources of contamination; technical practicability of groundwater remediation; vulnerability of the groundwater and its possible uses; and, exposure and likelihood of exposure and similar considerations.

In 1990, EPA proposed specific POCs for groundwater, air, surface water, and soil. These proposals, especially the proposed POC for groundwater, generated a substantial number of comments. Developing site-specific points of compliance generally continues to be an area of discussion and debate. In Section V.E.2 of today's Notice, EPA requests additional comment regarding POCs for corrective action.

e. Compliance Time Frame. The compliance time frame is the time period and schedule according to which corrective actions are implemented. In the 1990 proposal, EPA expressed a preference for the expeditious stabilization of releases, followed by timely completion of corrective actions and full restoration of contaminated media; however, a number of factors may influence the time frame within which media cleanup standards are attained, including: the extent and nature of contamination at the facility; risks to human health and the environment before and during remedy implementation; practical capabilities of remedial technologies; the availability of treatment or disposal options; and, the desirability of utilizing emerging technologies.

Remedy implementation schedules developed at the time of remedy selection should, to the extent possible,

specify the compliance time frame; however EPA recognizes that uncertainties associated with remediation may make it impossible to specify when a remedy must be completed. For example, due to complexities associated with contaminant occurrence in the subsurface and with groundwater remediation in general, the time needed to remediate groundwater at some sites cannot be accurately predicted. In these circumstances, the Agency recommends the use of performance measures or milestones monitored over time to track progress toward attaining remedial goals. These performance measures should be specified in the remedy implementation plans or performance standards. In cases where it is not practical to determine a precise compliance time frame, estimated compliance time frames may be used to help evaluate remedial alternatives and the technical practicability of site-specific remedial goals.

EPA emphasizes that, at many sites, the primary focus should be on near-term stabilization of releases. At these sites, it may be appropriate to focus the compliance time frame and corrective measures implementation schedule on the stabilization action; the remaining compliance time frame and corrective measures implementation schedule (if any are necessary) could then be developed during selection of the facility-wide remedy.

f. Site-Specific Risk Assessments. EPA's strategy for corrective action implementation incorporates risk-based decision-making throughout the corrective action process. At some sites, risk-based decisions can be made using standardized risk considerations, such as standardized exposure assumptions. At other sites, a site-specific risk assessment will be desirable. When a site-specific risk assessment is needed, EPA, in some cases, has directed the facility owner/operator to perform the risk assessment; in other cases EPA has chosen to do the risk assessment itself based on data submitted by the owner/operator. Site-specific risk assessments conducted at RCRA facilities may be based on CERCLA's extensive guidance in this area (e.g., "Risk Assessment Guidance for Superfund," Volumes I and II, Interim final EPA/540/1-89/001 and 002, December 1989 and March 1989). Additional information on the Agency's approach to risk-based decision-making is available in the Agency's recent memorandum on risk characterization. (See, 3/21/95 memorandum from Carol Browner, "EPA Risk Characterization Program" in the docket for today's Notice.) The

Administrator stated, " * * * we must improve the way in which we characterize and communicate environmental (human health and ecologic) risk." The key values conveyed in the 1995 Risk Characterization guidance are: (1) "transparency" in the decision making process (i.e., full and open discussion of supporting analyses, uncertainties, assumptions, etc.); (2) "clarity" in communication within the Agency and the public regarding environmental risk and the uncertainties associated with our assessments; (3) consistency; and (4) reasonableness in our use of scientifically defensible risk assessments. It is EPA's policy to incorporate these values in all risk-based considerations, including site-specific risk assessments at corrective action facilities.

g. Ecological Risk. Corrective action remedies must protect both human health and the environment. Some form of ecological assessment will generally be necessary at all corrective action facilities; at some corrective action facilities, a formal ecological risk assessment will be necessary. When an ecological risk assessment is needed, EPA, in some cases, has directed the facility owner/operator to perform the risk assessment; in other cases EPA has chosen to do the risk assessment itself based on data submitted by the owner/operator. The use of ecological risk assessment is an important component of the corrective action program. Often, environmental receptors are sensitive to contamination at lower concentrations than humans are, and the exposure is usually longer and more intense. In order to fulfill EPA's mandate, the program must be implemented in a manner that is protective of both human health and the environment. This includes the selection of media cleanup standards and the implementation of remedial activities that are protective of ecologic receptors. In the process of selecting stabilization measures or implementing final remedies, program implementors and facility owner/operators should be aware of how different remedial activities may affect ecological systems, especially sensitive populations, either on or adjacent to the facility.

Ecological risk assessment may be even more important when non-residential land use assumptions are used. Action or cleanup levels based on human health exposure scenarios or land use assumptions might not be protective of ecological receptors; therefore, consideration of the ecological exposure pathway may, in

certain settings, be the driving factor in selection of action or cleanup levels.

CERCLA's National Contingency Plan (55 FR 8666, March 8, 1990) designates certain key Federal agencies, state agencies and Indian tribes as natural resource trustees. Section 300.600 of the NCP indicates that trustees act on behalf of the public in regards to protection of natural resources. Under CERCLA, trustees should be notified when contamination threatens natural resources. As a matter of policy, EPA recommends that trustees also be notified when RCRA corrective action identifies a release that threatens natural resources. In addition, trustee agencies have a great deal of experience in their respective areas and can be used as a valuable resource when conducting ecological assessments.

h. Determinations of Technical Impracticability. Remediation of contaminated media to a desired media cleanup standard can, in certain situations, be technically impracticable. Congress formally recognized technical impracticability (TI) in the CERCLA statute and EPA incorporated the concept in the National Contingency Plan and the 1990 Subpart S proposal (proposed 40 CFR 264.525(d) and 264.531).

Technical impracticability decisions may be made for any medium; however, contaminated groundwater has received in the most TI-related attention. The single greatest cause for technical impracticability determinations during groundwater restoration has been the presence of dense non-aqueous phase liquids (DNAPLs).⁷ The Superfund program estimates that DNAPLs are likely present at approximately 60 percent of NPL sites. While EPA has not conducted an overall assessment of the presence of DNAPLs at RCRA facilities, it believes the percentage of DNAPLs at high priority corrective action facilities is likely comparable to the Superfund estimate for NPL sites. To provide a framework for addressing technical impracticability, the Agency issued "Guidance for Evaluating the Technical Impracticability for Ground-Water Restoration" (EPA/540-R-93-080). EPA encourages program implementors and facility owner/operators to refer to this guidance for a more detailed description of technical impracticability and a

⁷ Liquid contaminants that do not readily dissolve in water are known as non-aqueous phase liquids (NAPLs). NAPLs are divided into two classes: light NAPLs (LNAPLs), such as gasoline, are less dense than water; dense NAPLs (DNAPLs), such as the common solvent trichloroethylene, are more dense than water. NAPLs in the subsurface can cause long-term groundwater contamination, can be difficult to locate and, in many circumstances, technically impracticable to remove.

discussion of related issues, including: a description of DNAPLs and why they are difficult to remediate; factors to consider when making a technical impracticability determination; and, appropriate and practicable remedial options in situations where complete restoration is technically impracticable.

The possibility that certain remedies may be technically impracticable should be considered throughout the remediation process—from the early stages of developing a conceptual site model through all stages remedy implementation. When possible, determinations of technical impracticability should be made early in the remediation process and included in RCRA corrective action remedial decision documents (permits and orders). In some cases, program implementors and facility owner/operators might not have enough information to justify a determination of technical impracticability at the time of the site characterization or, even, when the remedy is selected. At the same time, there may be strong indications that restoration of a particular medium will be difficult and may prove technically impracticable (e.g., complicated groundwater remedies). In such situations, program implementors and facility owner/operators may choose not to establish a fixed media cleanup level, point of compliance or compliance time-frame, since achieving full restoration may prove technically impracticable. Instead, the remedy might proceed using interim goals and performance measures which could be revisited as more information became available. To avoid creating unrealistically high remedial expectations in these situations, the corrective action permit or order should discuss the possibility that full restoration of a particular medium may prove technically impracticable.

By recognizing technical impracticability, EPA is not in any way scaling back the general goal of returning contaminated groundwater to beneficial uses. Where technical impracticability is determined, the Agency would expect to require an alternative remedial strategy that is: (1) technically practicable; (2) consistent with the overall objectives of the remedy; and (3) controls the source(s) of contamination, and human and environmental exposures. A determination of TI does not release a facility owner/operator from corrective action obligations.

i. Natural Attenuation. EPA's three major remedial programs (i.e., Superfund, RCRA Corrective Action Program, and the Underground Storage

Tank Program) recognize that natural attenuation, in certain circumstances, can be an acceptable component of remedial actions for contaminated groundwater. As discussed in the NCP, a natural attenuation remedy uses natural processes such as biodegradation, dispersion, dilution, and/or adsorption to achieve remedial goals. (See, 55 FR 8734, March 8, 1990.)

Natural attenuation remedies are not "no action" remedies. Natural attenuation should be evaluated, where it might be applicable, along with and in a manner similar to other potential remedial approaches. In some cases, natural attenuation might be only one aspect of an overall approach to achieving remedial goals. As in any other remedial approach, a proposed remedy involving natural attenuation will have to be protective of human health and the environment and satisfy remedy selection criteria. Program implementors and facility owner/operators should provide a complete description of natural attenuation remedies and emphasize that, by approving a natural attenuation remedy, an overseeing agency is not allowing a responsible party to avoid its remedial obligations. Remedies involving natural attenuation should include: a thorough site characterization; source control or removal where appropriate; documentation or evidence of attenuation processes and the ability of these processes to achieve remedial objectives; an appropriate long-term monitoring plan; and, in certain circumstances, a contingency plan for a more active remedial measure (e.g., pumping).

j. Land Use. As discussed in the 1990 proposal, EPA's policy is that current and reasonable expected future land use and corresponding exposure scenarios should be considered in both the selection and timing of remedial actions. In the 1990 proposal, the Agency stated, "... contaminated soil at an industrial site might be cleaned up to be sufficiently protective for industrial use but not residential use, as long as there is reasonable certainty that the site would remain industrial." (See, 55 FR 30803.) Recently, EPA issued additional guidance on incorporating reasonable future land use assumptions in remedial decision making in the guidance document "Land Use in the CERCLA Remedy Selection Process" (OSWER Directive No. 9355.7-04, May 25, 1995; see Section II.F.6.a of today's Notice).

Reasonable future land use assumptions should be assessed when developing remedial goals for any given facility and used to focus all aspects of

the corrective action process; however, EPA cautions against automatically restricting assumptions of future land use to extrapolation of the current use or relying only on designated zoning or industrial use codes to establish land use assumptions. A large industrial facility could include office areas, parking areas, a child care area or on-site residences. Highly industrial sites are sometimes located adjacent to residential properties. All of these factors should be considered when making land use assumptions.

EPA recognizes the complexities associated with developing reasonably anticipated land use assumptions and the need for caution when basing remedial decisions on assumptions of future use; however, the Agency believes that non-residential land use assumptions are appropriate for many corrective action facilities. When remedies based on non-residential exposure scenarios involve a combination of treatment and engineering or institutional controls, program implementors and facility owner/operators should use currently available tools to ensure that the remedy continues to achieve its objectives over time and the land use assumptions remain valid. For example, many implementing agencies allow facility owner/operators to use institutional controls to ensure that exposure scenarios at the facility remain consistent with those used at the time of remedy selection.

EPA requests comments on these and other land use issues in Section V.E.1 of today's Notice.

6. Remedy Implementation

Remedy implementation typically involves detailed remedy design, remedy construction, remedy operation and maintenance, and remedy completion. In the CERCLA program, remedy implementation is known as "remedial design/remedial action, operation and maintenance"; in the corrective action program, it is known as "corrective measures implementation" or CMI. As proposed in 1990, corrective measures implementation is generally conducted in accordance with an approved CMI plan. Components of corrective measures implementation might include: conceptual design, operation and maintenance, intermediate design plans and specifications, final design plans and specifications, construction work plan, construction completion report, corrective measure completion report, health and safety plan, public participation plan and progress reports; however, in many cases, only a subset

of these documents will be required for individual corrective measures implementations.

EPA has found a number of useful strategies for improving the efficiency of corrective measures implementation, as discussed below.

a. Performance Based Corrective Measures Implementation. Similar to the performance-based approach discussed for evaluation of remedial alternatives in Section III.C.4.b of today's Notice, some states and EPA regions have developed a performance-based approach to corrective measures implementation. When using a performance-based approach to corrective measures implementation, the overseeing agency generally works with the facility owner/operator during remedy selection to develop remedial goals for the facility. Following public review and comment and approval of a remedy and remedial goals, the facility owner/operator is tasked with designing and implementing the chosen remedy in a manner which would meet the remedial goals. For example, if the remedy chosen for a particular facility included some form of groundwater treatment, an accompanying remedial goal might be to achieve hydrologic containment of the groundwater plume and continuous reduction of the concentrations of hazardous constituents. While the overseeing agency would review and approve the remedy and remedial goals and be involved in developing monitoring systems or other means of measuring compliance with the remedial goals, it would not necessarily be involved with the details of remedy design, construction and implementation. Rather, the overseeing agency would monitor compliance with the remedy implementation milestones and remedial goals and become involved in the details of remedy design and implementation only if a facility owner/operator was having trouble meeting the remedial goals. A performance-based approach to remedy implementation emphasizes that the facility owner/operator, not the overseeing agency, is responsible for designing and implementing a successful remedy.

b. Performance Monitoring. Evaluation of the performance of a chosen remedy is necessary to measure progress toward remedial goals and ensure that remedial objectives are achieved. Program implementors and facility owner/operators have recognized that appropriately designed performance monitoring programs can maximize efficiency and cost-effectiveness and ensure protection of potential human or ecologic receptors

Properly designed performance monitoring programs are especially important for groundwater remediation because the concentration and distribution of contamination in the subsurface often change with time. Likewise, the ability of remediation systems to prevent migration of contaminated groundwater can be influenced by natural and human factors (e.g., seasonal precipitation or nearby agricultural groundwater usage). For groundwater remediation systems, performance monitoring can assess changes in subsurface conditions so that the remedy can be modified to ensure maximum efficiency in terms of both the location and pumping rate at individual extraction wells.

Performance monitoring is also a critical aspect of a remedial alternative that relies on engineering controls (e.g., liners, barrier walls). Poorly designed monitoring programs for engineered remedies can potentially fail to detect releases from the "contained" areas.

While EPA recognizes the importance of performance monitoring, it also acknowledges that long-term routines of sample collection and analysis carry significant financial burdens. The Agency encourages program implementors and facility owner/operators to design monitoring programs with effectiveness and efficiency as fundamental considerations. For example, due to subsurface heterogeneities, it may be more effective and efficient to monitor a greater number of discrete locations for a subset of mobile contaminants, than to monitor fewer locations for an exhaustive list of analytical parameters and contaminants.

Properly designed performance monitoring programs are integral to remedy success and should be considered throughout the corrective action process, including in remedy selection and design. Detailed guidance regarding performance monitoring and designing monitoring programs in general is available in "RCRA Ground-Water Monitoring: Draft Technical Guidance" (EPA/530/R-93/001) and "Methods for Monitoring Pump-and-Treat Performance" (EPA/600/R-94/123).

c. Completion of Corrective Measures. Documents specifying corrective measures implementation should include methods to determine when remedial goals have been achieved. For example, statistical procedures are often appropriate for determining that concentrations of hazardous constituents measured in groundwater samples meet a remedial goal. Other remedies might require that certain tests be undertaken to determine that

engineering standards have been achieved. Decisions regarding completion of corrective measures may be made for the entire facility, for a portion of the facility, or for a specified unit or release. The public and affected community should be given an opportunity to review and comment on all proposals to complete corrective measures.

In 1990, EPA proposed that corrective measures be considered complete based on a three-part evaluation: the corrective measure had to have complied with all media cleanup standards; all required source control actions would have to be completed; and all specified procedures for removal and decontamination of units, equipment, devices and structures would have to be complete. In addition to certifying compliance with the three criteria, the Agency proposed that the owner/operator's certification be signed by an independent registered professional "skilled in the appropriate technical discipline(s)." The Agency chose not to propose that all certifications be signed by an independent qualified registered professional engineer because it believed that engineering certifications would not be appropriate in all cases (e.g., for a remedy largely addressing groundwater, the Agency believed that certification by a hydrogeologist might be more appropriate). In the absence of final regulations addressing completion of corrective measures, program implementors and facility owner/operators should use the requirements proposed in 1990 as guidance when developing site-specific procedures for completion of corrective measures. At a minimum, the public and affected community should be given notice and an opportunity to comment before corrective action implementation is terminated and a facility is released from its RCRA obligations.

D. Incorporation of Corrective Action in RCRA Permits

RCRA Section 3004(u) mandates that corrective action and schedules of compliance be required for facilities seeking a permit, when corrective action cannot be completed prior to permit issuance. Approximately half the states are authorized to implement state RCRA corrective action programs in lieu of the Federal program. In authorized states, the state issues the RCRA permit including the corrective action component (using any of the options discussed above). In states not authorized for the corrective action program, the state typically issues most of the RCRA permit and EPA issues the

corrective action portion. Although any given facility may be issued a portion of its RCRA permit by an authorized state and a portion by EPA, this should not lead to the perception that any given facility has more than one RCRA permit. Program implementors and facility owner/operators should remember that any given facility has only one RCRA permit; when joint permitting is necessary, EPA will coordinate permitting schedules and priorities with authorized states.

Corrective action requirements and schedules can be included in RCRA permits in a number of ways. In some cases, the RCRA permit will contain detailed corrective action provisions, work plan requirements, and schedules. In other cases, the RCRA permit may incorporate corrective action requirements by referencing another document (e.g., a state or Federal corrective action order). Finally, in certain cases, RCRA permits may defer to corrective action activities being conducted under another authority or by another program. In many cases, incorporation of corrective action requirements into any given permit will use a combination of these strategies. For example, at a corrective action facility where the facility owner/operator has chosen to address a subset of the releases voluntarily, a corrective action permit could defer action at the areas being addressed by the voluntary cleanup while incorporating detailed corrective action conditions for the remaining releases or areas of concern.

E. Corrective Action Orders

Although the 1990 proposal focused primarily on corrective action under RCRA permits, EPA and the states frequently use orders to initiate or oversee corrective actions. EPA intends for equivalent environmental results to be achieved whether corrective action requirements are dictated in an order or a permit. As a matter of EPA policy, the substantive corrective action requirements and public participation requirements imposed under either mechanism are generally the same.

RCRA, as amended by HSWA, includes several enforcement authorities which can be used to issue corrective action orders. The most commonly used authority is RCRA section 3008(h). EPA's longstanding interpretation is that corrective action may be required under RCRA section 3008(h) at facilities which have or should have had interim status, as well as some facilities that had interim status at one time but no longer do (e.g., facilities that have lost interim status under RCRA interim status section 3005(e)(2) and facilities which

have clean closed under interim status), or have failed to properly obtain interim status. In addition, the 1990 proposal explained that issuance of a permit does not automatically terminate the effectiveness of a previously issued 3008(h) order.

Other enforcement authorities which can be used to issue corrective action orders include RCRA sections 3013 and 7003. RCRA section 7003 provides EPA the authority to take enforcement actions to compel corrective action where solid or hazardous waste may present an imminent and substantial endangerment to human health or the environment. RCRA section 3013 provides EPA the authority to require investigations and studies where the presence or release of hazardous waste may present a substantial hazard to human health or the environment. All corrective action orders may be issued unilaterally by the Agency or as consent agreements between the respondent and the Agency.

F. Public Participation and Environmental Justice

EPA is committed to providing meaningful public participation in all aspects of the RCRA program, including RCRA corrective action. In 1993, the Agency released a detailed guidance manual on public participation (RCRA Public Involvement Manual, EPA 530-R-93-006). EPA followed this guidance in December 1995 with the RCRA Expanded Public Participation rule (60 FR 63417, December 11, 1995). EPA is also committed to the principles of environmental justice and equitable public participation. One of the Agency's central goals in the RCRA program is to provide equal access to information and an equal opportunity to participate. EPA continues to regard public participation as an important activity that empowers all communities, including minority and low-income communities, to become actively involved in local waste management activities. EPA strives to provide adequate public participation opportunities to all communities, putting forth additional effort, where appropriate, to reach communities that have not been involved in the past.

When corrective action is part of the RCRA permitting process, it follows the procedural requirements set forth in 40 CFR Parts 124 and 270. Under these requirements, the corrective action provisions in any permit application are available for public review throughout the permitting process and the public can comment on them at the draft permit stage.

The RCRA Expanded Public Participation rule creates more opportunities for public participation in the RCRA permit process.⁸ Additional opportunities of public participation include: (1) A prospective applicant must advertise and hold an informal public meeting before submitting an application for a RCRA permit; (2) the permitting Agency must mail a notice to the facility mailing list when the facility submits its permit application, telling members of the public where they can examine the application during Agency review; and (3) giving the permitting Agency the authority to require a facility owner/operator to set up an information repository at any time during the permitting process or the permit life. EPA anticipates that these provisions, combined with existing public participation requirements, will provide community members with significant opportunities for early input and access to information.

In addition to the new requirements in the RCRA public participation rule, EPA is using guidance to help facility owner/operators meet the Agency's public participation goals. In the preamble to the RCRA Expanded Public Participation rule, EPA encourages agencies and facilities to use all reasonable means to ensure equal opportunities for participation and equal access to information. These means may include, but are not limited to, multilingual notices and fact sheets, as well as translators, in areas where the affected community contains significant numbers of people who do not speak English as a first language. The Agency expects all those involved in implementing corrective action to make good faith efforts to meet these objectives in all permitting processes, including corrective action. In the near future, EPA will issue further guidance to assist facilities and permitting agencies in providing full and equitable public participation in corrective action activities.

EPA's policy is for corrective actions imposed or overseen using a non-permit mechanism to have the same level of public participation as that associated with permits. Although EPA typically has less control over public

participation during voluntary corrective actions, it strongly encourages the use of public participation and will take into account the level of public participation conducted by the facility owner/operator when evaluating the acceptability of voluntary actions. In the absence of final regulations specifically addressing public participation during corrective action, program implementors and facility owner/operators should develop public participation strategies on a site-specific basis, consistent with existing public participation requirements and the program goal of full, fair, and equitable public participation. At a minimum, information regarding corrective action activities (e.g., RFI and CMS reports) should be available to the public and the public should be given an opportunity to review and comment on proposed corrective action remedies.

G. Financial Assurance

RCRA section 3004(u) requires that, when corrective action cannot be completed prior to permitting, RCRA permits contain corrective action schedules of compliance and financial assurance. Financial assurance is also typically included in corrective action orders. On October 24, 1986, EPA proposed detailed regulations to govern financial assurance for corrective action (FACA). The October 1986 proposal would require owners or operators seeking an RCRA permit to demonstrate financial assurance for completion of remedies. Proposed acceptable mechanisms included trust funds, surety bonds guaranteeing performance, letters of credit, the financial test, and the corporate guarantee. These are similar to the mechanisms used to assure closure and post-closure costs. In a subsequent memorandum, EPA clarified that insurance would also be an acceptable mechanism. In addition to permissible mechanisms, the October 1986 proposal provided that financial assurance demonstrations would ordinarily be required at the time of remedy selection (e.g., rather than at the time an RFI is required). The proposal also discussed cost-estimating procedures, including the periodic adjustment of cost estimates, for determining the amounts of required financial assurance.

In the absence of final rules, program implementors and facility owner/operators have the flexibility to tailor financial responsibility requirements to facility-specific circumstances. In some instances, however, industry has expressed concern with EPA's implementation of the financial

⁸ The RCRA public participation rule is generally effective only in states which have amended their authorized hazardous waste programs to adopt the public participation rule requirements. At a minimum, all authorized states are scheduled to make such amendments by July 1, 1997. The exceptions are the following states and territories where EPA implements the entire RCRA hazardous waste program, including the public participation rule: Alaska, Hawaii, Iowa, Puerto Rico, the Northern Mariana Islands, the Virgin Islands and American Samoa.

assurance requirements. Representatives of the regulated community have also expressed concern that the costs of providing financial assurance divert resources from actual cleanup activities, and that it may be difficult for facility owners/operators to provide assurance for future work while simultaneously performing current work.

In Section V of today's Notice, EPA requests comments on these concerns and on corrective action financial assurance in general. In the interim, EPA emphasizes that program implementors should apply financial assurance requirements flexibly and that their main goal should be to ensure that remedies proceed expeditiously.

IV. Corrective Action Program Priorities

In the absence of detailed regulations, EPA and authorized states have implemented the corrective action program based on guidance and policies developed over the past ten years. EPA stresses that implementation of the corrective action requirements must continue even as the Agency considers improvements to the corrective action program. EPA's key goals and implementation strategies for the corrective action program are outlined below.

1. Prioritize the corrective action universe:

a. Meet the goal of assessing and prioritizing all hazardous waste treatment, storage or disposal facilities by end of FY96.

b. Focus resources on high priority areas at high priority facilities.

2. Increase the amount of corrective action:

a. Continue to authorize states for corrective action.

b. Do not duplicate work already performed by another Federal or state program.

c. Encourage alternate state authorities to conduct analogous work at RCRA facilities.

d. Utilize the expertise of other Federal/state agencies where appropriate (e.g., the U.S. Fish and Wildlife Service for ecological, wetlands issues).

e. Increase the number of voluntary actions, including actions at facilities without a permit or an order, actions outside of an existing permit or order, and actions required under permit or order but with no Agency oversight.

f. Disinvest or substantially reduce oversight at lower priority facilities and high priority facilities where the owner/operator has proven his or her capability.

3. Continue to implement the stabilization initiative:

a. Implement stabilization actions as early in the process as possible.

b. Phase and focus RFI to collect any information needed to implement stabilization actions.

c. Use existing corrective action program environmental indicators as stabilization performance measures.

d. Include meaningful opportunities for public participation throughout the process including during extensive or long-term stabilization actions.

4. Streamline the corrective action process where possible:

a. Implement stabilization actions where possible, then disinvest and move on to other facilities.

b. Focus RFI data collection and tailor investigations to specific site conditions.

c. Use existing pertinent data.

d. Communicate remediation expectations to facility owners/operators early in the process.

e. Use innovative technical tools, including new site characterization techniques and treatment technologies when appropriate and beneficial.

f. Avoid unnecessary procedural steps whenever feasible (e.g., eliminate the CMS if a desirable remedy can be identified without one).

g. Use presumptive remedies when appropriate.

h. Focus on plausible remedies, if a CMS is necessary.

i. Conduct CMS concurrent with RFI when possible.

j. Utilize site-specific performance standards instead of detailed review of work plans and remedy designs when possible.

k. Consider non-residential land use scenarios when appropriate, while recognizing that ecological risks may end up driving media cleanup standards and remedy designs when using industrial land use assumptions.

5. Continue to involve the public in all stages of the corrective action process.

V. Request for Comment and Data

EPA has the benefit of more than ten years experience in corrective action implementation as it begins the Subpart S Initiative. The Agency is committed to using this experience to identify, develop, and implement improvements to the speed, efficiency, protectiveness and responsiveness of the corrective action program as part of the Subpart S Initiative. Today, EPA requests information, comments and data to assist in this process. Some of the topics discussed in this section raise new concepts that would likely warrant re-

proposing regulations or developing new guidance documents; others were addressed in the 1990 proposal but are included in this section of today's Notice because the Agency is requesting additional comment and data at this time. EPA requests that commenters be as specific as possible in their responses to today's requests. The Agency is particularly interested in comments which rely on actual experience in corrective action implementation and include specific suggestions for improvement to the corrective action program. The Agency also requests that commenters keep in mind the objectives of the Subpart S Initiative: create a consistent, holistic approach to cleanups at RCRA facilities; establish protective, practical cleanup expectations; shift more of the responsibilities for achieving cleanup goals to the regulated community; focus on opportunities to streamline and reduce costs; and, enhance opportunities for timely, meaningful public participation.

EPA emphasizes that its purpose in requesting comments at this time is to take advantage of information and experience gained through program implementation to aid in identification and development of new proposals and to determine which portions of the 1990 proposal should be promulgated immediately. EPA will consider all comments submitted in response to today's Notice in development of the Subpart S Initiative. Comments submitted during the 1990 comment period will be considered before the Agency takes final action on any part of the 1990 proposal. If EPA later proposes new corrective action regulations, full public notice and opportunity for comment will be provided at that time.

A. General

EPA requests general comment on its implementation of the corrective action program to date and on the strategy, goals and schedule of the Subpart S Initiative as discussed in Sections II and IV of today's Notice. The Agency is especially interested in comments which include suggestions for specific improvements to the corrective action program based on actual implementation experiences. The Agency is also interested in examples of situations where the existing flexibility in the corrective action program has been used to expedite facility cleanups and in examples of the corrective action program providing too much or too little flexibility. Since the Subpart S initiative includes policy, guidance and rule development, commenters should include specific recommendations for

additional policy or guidance development and address the balance between guidance/policy documents and regulations (e.g., in 1990 EPA proposed detailed regulations to address most aspects of the corrective action program perhaps some of that information could be presented more effectively in policy or guidance documents).

B. Resolution of the 1990 Proposal

EPA believes there may be elements of the 1990 proposal which have been largely non-controversial or for which the issues have been fully aired; accordingly, going through additional notice and comment on all the issues raised by the 1990 proposal would not be necessary or, from an efficiency standpoint, desirable. On the other hand, many issues raised by the 1990 proposal have evolved during the past six years of corrective action implementation, necessitating additional opportunities for public notice and comment. In the discussions to follow, EPA identifies the issues on which it believes further public input is most needed. EPA also requests that commenters identify any other issues, or elements of the 1990 proposal, on which they believe it would be inappropriate for the Agency to take final action without re-proposal. At the same time, EPA requests that commenters identify specific elements of the 1990 proposal which could be promulgated without additional public review and the advantages or disadvantages of immediately promulgating such provisions. Comments submitted in response to this request will be considered part of the administrative record for the 1990 proposal; however, commenters should keep in mind that EPA's intent is not to request new comment on the specifics of the 1990 proposal. Comments submitted during the 1990 comment period will be considered before the Agency takes final action on any part of the 1990 proposal.

C. Focusing the Corrective Action Program on Results

As discussed earlier in today's Notice, the goal of the corrective action program is to appropriately stabilize and clean up RCRA facilities in a timely way. EPA believes that too often program implementors and facility owners/operators may lose sight of this goal and become distracted by processes. On the other hand, the purpose of a standardized cleanup process is to ensure that the program is implemented consistently and that all facilities appropriately meet cleanup goals. The Agency is interested in improving the

corrective action program's focus on cleanup goals and requests general comment on the balance between focusing on results and ensuring an appropriate level cleanup at all facilities. In addition, EPA is specifically interested in comments which address:

1. Performance Standards

EPA believes that focusing the corrective action program on compliance with clear measurable performance standards rather than a prescriptive corrective action process could significantly increase the pace and quality of corrective action cleanups. Corrective action performance standards could be part of a larger Agency effort to develop results-based measures. The Government Performance and Results Act of 1993 (GPRA) requires EPA to develop and implement results-based measures across its programs by 1998. For example, the corrective action environmental indicators (discussed below), were developed, in part, in response to the GPRA. The Agency will consider any performance-based approaches developed as part of the Subpart S Initiative as it develops its implementation plan for the GPRA.

Reliance on performance standards, however, can raise a number of implementation issues. For example, some stakeholders have suggested that using performance standards in lieu of detailed review and approval of work plans may increase the risk that individual facility owners/operators will attempt to obscure or avoid legitimate corrective action obligations. Stakeholders have also expressed concern about potential reductions in public participation when corrective action activities occur with reduced Agency oversight. In addition, some elements of corrective action may be difficult to specify as performance standards, and measuring, documenting compliance with, and enforcing performance standards can be difficult for facility owners/operators and overseeing agencies. EPA requests general comment of the use of performance standards in the corrective action program. The Agency is particularly interested in comments which address the details of documenting and measuring compliance with performance standards and in approaches to ensure adequate public involvement in performance-based corrective action activities. In addition, as discussed in Section II.E.2 of today's Notice, the corrective action program currently has two environmental indicators covering human exposures controlled and

groundwater releases controlled. The Agency requests comments on the development of additional environmental indicators; the Agency is specifically interested in indicators targeted at ecological risks.

2. Less Focus on Solid Waste Management Units

Use of the solid waste management unit (SWMU) concept as discussed in the 1990 proposal has led to numerous unsuccessful permit appeals. These permit appeals slow corrective action implementation and increase the transaction costs. In certain cases, the SWMU concept may also deter program implementors and facility owners/operators from addressing contamination on a site-wide basis by focusing corrective action resources unit-by-unit instead of more holistically.

In general, EPA believes that a holistic approach to corrective action, as opposed to a unit-by-unit approach, could increase cleanup efficiency and reduce transaction costs. EPA requests general comment on focusing the corrective action program less on individual solid waste management units and more on holistic approaches. The Agency requests that commenters who support a less unit oriented corrective action program also address whether there is any need for clarifications to the corrective action jurisdiction language and/or the SWMU definition in order to use such an approach.

D. Using Non-RCRA Authorities for Corrective Action

EPA recognizes that there are many authorities which could be used to impose or oversee corrective action at any given facility. Typically, these authorities include RCRA orders and permits, state cleanup orders, and voluntary and independent actions. In some cases, CERCLA authorities are also available. The Agency is concerned that, to date, it has not taken full advantage of the work of other programs in the RCRA corrective action program. In principle, EPA believes that when a facility is being adequately addressed it should not matter what authority is used or what Agency is overseeing the cleanups. In support of this principle, the Agency requests general comment on the use of non-RCRA authorities to satisfy corrective action requirements. Commenters should address the scope and stringency of non-RCRA authorities as compared to corrective action requirements and the ability of non-RCRA authorities to adequately involve the public and affected communities.

The Agency is also specifically interested in comments which address:

1. State Cleanup Programs

Over half the states have independent Superfund-like authorities and cleanup programs; typically, these authorities and cleanup programs are modeled after the Federal Superfund program. In many cases, EPA believes these independent state authorities are substantively equivalent in scope and effect to the RCRA corrective action program.

The use of state cleanup programs can offer a number of advantages to state and regional personnel as well as to the regulated, environmental and public interest communities. EPA believes these advantages include: providing states the ability to recover the costs of their program oversight; expanded opportunities for public participation; the ability to recover damages associated with contamination caused by previous owners or operators who would likely not be considered liable under RCRA sections 3004(u) and 3004(v); and, opportunities for voluntary or independent cleanups.

Many states are already using their independent Superfund-like authorities to address releases of hazardous waste and hazardous constituents at facilities subject to corrective action, especially at facilities operating under interim status. The Agency is interested in exploring the relationship between independent state Superfund-like authorities and the corrective action program and, if appropriate, providing some level of assurance that facility owners/operators who complete cleanups under independent state authorities have satisfied RCRA corrective action obligations.

EPA requests general comment on the use of state Superfund-like cleanup programs to compel or conduct cleanups at facilities subject to RCRA corrective action. EPA is especially interested in comments which address:

(a) *Scope.* Whether the scope and effect of state Superfund-like cleanup programs are substantively equivalent to the scope and effect of the RCRA corrective action program.

(b) *Advantages/Disadvantages.* Advantages and disadvantages which might be associated with using a state Superfund-like cleanup authority, rather than, or in addition to, an RCRA corrective action authority, at an operating hazardous waste management facility.

(c) *Compliance with Federal Standards.* The degree to which compliance with state Superfund-like authorities should be assumed to meet

corrective action requirements, including procedural requirements such as public participation and permitting.

(d) *Coordination with RCRA Permits.* Issues which might be associated with coordination of state Superfund-like cleanup orders with RCRA permits and Federal RCRA corrective action orders.

2. Enhanced Flexibility for States With EPA-Endorsed CSGWPPs

Current EPA policy is to provide states greater flexibility for the management and protection of their groundwater resources. This policy was stated formally in a report titled, "Protecting the Nation's Ground Water: EPA's Ground Water Strategy for the 1990s" (Publication 212-1020, July 1991). The 1991 report indicated that, to the extent authorized by EPA statute and consistent with Agency program implementation objectives, EPA will defer to state policies, priorities, and standards once a state has developed an adequate groundwater protection program. EPA provided a definition of an adequate state groundwater protection program in a December 1992 guidance titled, "Final Comprehensive State Ground Water Protection Program Guidance" (EPA 100-R-93-001). The focal point of the 1992 guidance was the creation of Comprehensive State Ground Water Protection Programs (CSGWPPs). As discussed in the 1992 guidance, CSGWPPs are intended to provide a more efficient, coherent, and comprehensive approach to protecting the nation's groundwater resources.

Developing a CSGWPP is a three-stage process. First, a state develops a "core CSGWPP" and submits it to EPA for review and endorsement. The core CSGWPP is only required to include one groundwater protection or remediation program to demonstrate whether the state's CSGWPP approach inconsistent with EPA guidance. Second, after the core CSGWPP is endorsed by EPA, joint state-EPA discussions are held to develop a "multi-year planning agreement." The multi-year planning agreement will establish methods and a schedule for incorporating other state groundwater programs into the CSGWPP. Third, at the completion of the multi-year planning process, all groundwater protection and remediation programs conducted in the state, including Federal remediation programs, are included in a "fully integrating CSGWPP."

At the time of today's Notice, EPA has endorsed five state core CSGWPPs; endorsement of thirteen more is anticipated by June 1996. EPA is committed to taking actions within its own programs to provide states with

endorsed CSGWPPs greater flexibility in protecting their groundwater resources. The Agency has recently affirmed this commitment in, "EPA's Commitments to Support Comprehensive State Ground Water Protection Programs" EPA, 100/R-94/002, date. In the RCRA corrective action program, EPA committed to considering state groundwater classification when making groundwater use assumptions, selecting groundwater cleanup levels, and setting cleanup priorities.

EPA is interested in evaluating additional opportunities to provide states with endorsed CSGWPPs enhanced flexibility in implementation of the RCRA corrective action program. EPA requests comments and suggestions on specific areas of flexibility that should be available in states with endorsed CSGWPPs. The Agency is also interested in suggestions and comments addressing areas where a distinction in the amount of flexibility afforded to states with an EPA-endorsed CSGWPPs would not be appropriate. For example, should states with EPA-endorsed CSGWPPs be provided greater flexibility than states without endorsed CSGWPPs in specifying groundwater cleanup levels, points of compliance or compliance time-frames based on state determination of current and future groundwater uses as recorded in an EPA-endorsed CSGWPP? Similarly, should states with EPA-endorsed CSGWPPs be given additional flexibility to prioritize oversight resources or facility-specific corrective action schedules?

3. Voluntary Corrective Action

EPA requests comments on the use of state voluntary cleanup programs to accelerate cleanups at facilities subject to RCRA corrective action and the roles of EPA and states in such situations. EPA is specifically interested in comments which address:

(a) *Use of state voluntary cleanup programs at RCRA corrective action facilities.* Over half the states have developed voluntary cleanup programs; these state voluntary cleanup programs vary significantly in program design, degree to which the state offers guidance and oversight during the cleanup process and the review, if any, of the final cleanup. EPA is interested in comments which address the use of state voluntary cleanup programs to accelerate corrective action at RCRA facilities including the level of Federal review or endorsement, if any, necessary for such programs. Commenters who support Federal review or endorsement should address program criteria (e.g., protectiveness

public participation) that EPA should use to evaluate state voluntary cleanup programs used to satisfy corrective action obligations.

(b) *Incentives for private parties to accelerate corrective actions.* EPA recognizes that many facility owners/operators who might be inclined to accelerate corrective action voluntarily at their facilities may choose not to because of concerns that the Agency might "second-guess" the cleanup conducted and impose additional requirements. EPA requests comments on incentives which can be offered to encourage facility owners/operators to voluntarily accelerate corrective action at their facilities including approaches which could be used to provide comfort or assurance to facility owners/operators who complete corrective action under a state voluntary program. In addition, the Agency requests comments on the degree to which accelerated corrective action should be based on compliance with general performance standards or, alternatively, more detailed guidance documents or regulations. Commenters who support the use of guidance should specify whether guidance should be developed at the state or Federal level, and list the existing documents that they believe would be applicable.

(c) *Specific site eligibility for accelerated corrective action.* In some state voluntary cleanup programs, site eligibility for voluntary cleanup is limited to sites which are considered low risk (e.g., sites where the contamination is not highly concentrated or highly toxic). EPA requests comments on site eligibility for accelerated corrective action and whether eligibility should in any way be limited based on the degree of health or environmental threat present at any given facility. The Agency is specifically interested in comments which address whether, or to what extent, facilities already under real-time Agency oversight should be allowed to switch to an accelerated action pursuant to a state voluntary cleanup program.

(d) *Public participation.* EPA believes that meaningful opportunities for public participation are essential to a successful corrective action program; it requests comments on the specific opportunities and procedures for public participation which should be included in any voluntary corrective action program.

(e) *Review of accelerated actions.* EPA anticipates that some level of review by the implementing state agency will be necessary to ensure that accelerated corrective actions are of sufficient quality to fulfill corrective action requirements. The Agency requests

comments on the level of review by the implementing state agency, if any, necessary to ensure the quality of accelerated corrective actions. Commenters who believe some level of review is necessary should address the timing and substance of the review (e.g., audits of facility actions and records, review of milestone documents), and the role, if any, of EPA in the review process.

(f) *Third-party oversight.* Several states have established cleanup programs which rely on a licensed third-party overseer, rather than implementing agency staff, to ensure compliance with cleanup requirements at certain facilities. One state requires an independent third-party overseer to monitor compliance with all phases of the cleanup process at facilities and certify to the implementing agency when cleanup at a facility is complete. EPA believes such approaches may reduce the risks associated with voluntarily accelerated cleanups and provide necessary relief to state regulators. While development of a third-party oversight system is not currently under consideration at the Federal level, EPA requests comments on the use of state third-party oversight programs for oversight of cleanups at facilities subject to RCRA corrective action.

4. Corrective Action at Interim Status Facilities

In 1990, EPA proposed that corrective action regulations be included in 40 CFR Part 264 (the permitting standards). The only changes proposed to 40 CFR Part 265 (the interim status standards) were to address the need to coordinate corrective action and closure activities at closing interim status units and facilities. EPA's longstanding view has been that the requirements to address facility-wide corrective action at interim status facilities are consistent with those for permitted facilities. For this reason, the Agency requests comments on whether the corrective action regulations should be developed under 40 CFR Part 265 as well as under Part 264. The Agency is especially interested in comments which address the trigger for initiation of corrective action activities at interim status facilities, the degree to which any corrective action requirements included in 40 CFR Part 265 would be independent or self-implementing (see, discussion of independent or self-implementing corrective action, below), and the incorporation of corrective action activities conducted while facilities are under interim status into final facility permits. In addition, EPA requests

comments on further modifying the interim status requirements to include provisions for the cleanup of releases to groundwater from regulated units equivalent to those at 40 CFR 264.100.

5. Independent or Self-Implementing Corrective Action

EPA believes that the 1990 corrective action proposal appropriately emphasized the need for flexibility and site-specific decisions; however, the administrative framework proposed in 1990 relies on intensive oversight by a regulatory agency. In general, corrective action facility owners/operators initiate a cleanup only after being compelled to do so by a regulatory agency (e.g., in an order or permit). The regulatory agency then reviews and approves intermediate steps, such as work plans and reports, ultimately selects the remedy, and ensures that the remedy is implemented and achieves cleanup objectives. This command and control approach reduces risks associated with all phases of cleanup at a facility; however, it is resource intensive and may discourage facility owners/operators from undertaking voluntary or accelerated cleanup actions.

Due to limited oversight resources, many of the lower risk facilities which are believed to require some form of corrective action have remained unaddressed. This issue has raised concerns about the pace and quantity of corrective action cleanups. In order to address these concerns and shift more of the responsibility for conducting corrective action activities to the regulated community, EPA is examining approaches to independent or self-implementing corrective action. By "independent" or "self-implementing" the Agency is referring to activities required by regulation to meet certain standards of performance within specified time periods without direct, real-time, oversight by a regulatory agency. For example, the RCRA regulations for hazardous waste characterization require generators of solid waste to determine if such wastes are considered hazardous wastes and, if hazardous, to manage them appropriately. Generators notify overseeing agencies of their waste determinations and management (through the biannual reporting and manifesting systems) and overseeing agencies periodically audit or inspect generator compliance. Similarly, EPA believes some corrective action activities could be sufficiently prescribed by regulation and carried independently by facility owners/operators subject to auditing by an overseeing agency, rather than being

specified in facility specific order or permit conditions. For example, facility owners/operators could be required, upon identification of a release of hazardous waste or hazardous constituents at or from the facility, to conduct an initial screening investigation and take appropriate steps to control the release. In another example, facility owners/operators could be required to take whatever steps are necessary to certify compliance with EPA's two environmental indicators for corrective action. (As discussed in Section II.E.2 of today's Notice, the two environmental indicators for corrective action are human exposures controlled and groundwater releases controlled.)

EPA believes that applying the concept of self-implementation to a cleanup scenario raises many issues. For example, the complexity and site-specific nature of corrective action, coupled with the fact that it requires the exercise of professional judgement (e.g., hydrogeologic, engineering) throughout the process, may make self-implementation problematic. These same factors may make compliance monitoring and enforcement difficult. The Agency's experience with the self-implementing groundwater monitoring requirements in the interim status standards (i.e., Part 265, Subpart F) is indicative of the difficulties that may be associated with ensuring full compliance with self-implementing standards. The Agency is interested in general comment on the concept of independent or self-implementing corrective action; it is specifically interested in comments which address:

(a) *Scope.* EPA requests that commenters specifically identify the elements of the corrective action process which they believe are amenable to self-implementation.

(b) *Public participation.* Meaningful public participation is essential to the corrective action process. EPA requests that commenters address incorporation of public participation opportunities and activities in self-implemented corrective action.

(c) *Detailed guidance.* An argument can be made that, without detailed guidance for self-implemented activities, quality will vary across actions. EPA requests that commenters address the degree to which self-implementation should rely on detailed guidance and whether the Agency should issue new guidance for self-implemented corrective action or if EPA can rely on guidance already available at the state and Federal level. Commenters suggesting that EPA rely on existing guidance should indicate the guidance documents they believe would

be applicable. The Agency is also interested in comments which address approaches to ensure that facility owners/operators have access to and use current and appropriate guidance documents.

(d) *Record keeping and reporting.* Facility owners/operators might be required to submit information certifying and documenting their compliance with self-implementing requirements. Information and documentation which EPA could use to assess the quality of self-implemented actions might also be necessary. EPA requests that commenters address whether or not Record keeping and reporting requirements should be part of self-implementing corrective action. Commenters who support Record keeping and reporting requirements should address the specific requirements they believe are necessary.

(e) *Compliance Monitoring and Enforcement.* Compliance with self-implementing requirements might be monitored through regular inspections or periodic auditing. EPA requests comments on the ability of state or Federal overseeing agencies to adequately monitor and enforce self-implementing requirements. EPA requests that commenters specifically address its ability to accurately assess the quality of self-implemented corrective actions without ongoing Agency oversight.

(f) *Risks.* Any reduction in real-time agency oversight increases the risks that individual facility owners/operators might attempt to avoid or obscure legitimate corrective action obligations. EPA requests comments on the potential risks associated with self-implementation of certain corrective action provisions and suggestions of actions that the Agency could take to eliminate or mitigate such risks.

6. Consistency with the CERCLA Program

As discussed in Section III.B.1 of today's Notice many facilities subject to corrective action are also subject to cleanup under the Federal CERCLA program. At some of these facilities, RCRA corrective actions are proceeding concurrently with CERCLA cleanups (e.g., the RCRA corrective action is addressing SWMUs while the CERCLA cleanup is focusing on other releases). At other facilities, cleanup is being addressed by one authority but final action under the other authority is being deferred (e.g., a site undergoing RCRA corrective action but still on the NPL). In general, EPA believes coordination of cleanup activities at facilities with overlapping RCRA and CERCLA

liability is appropriate; however, the Agency continues to hear concerns over duplication of procedural and substantive cleanup requirements, including oversight. Recently, EPA established a multi-agency and state workgroup to examine issues associated with overlapping cleanup obligations. Through the "Lead Regulator Workgroup" the Agency hopes to identify specific strategies for expediting cleanups through reducing or eliminating the transaction costs that may be associated with overlapping cleanup obligations. The Agency requests comments on the issue of coordination of overlapping RCRA and CERCLA cleanup requirements and suggestions for improvement to the Agency's current policy and regulatory approaches to coordination. For example, would using of the same terms for remedial activities, such as investigations or remedy selection, improve coordination at sites with overlapping RCRA corrective action and CERCLA cleanup obligations? Similarly, should the remedy selection criteria between the two programs be explicitly conformed?

While EPA's focus is on coordination between the RCRA and CERCLA programs, it also requests comments on coordination of overlapping state and Federal cleanup obligations.

7. ASTM RBCA Standard

EPA expects the number of identified releases from underground storage tanks (USTs) to increase to more than 400,000 as the 1998 deadline for upgrading, replacing, or closing UST systems approaches. To meet the challenge of addressing these releases in a timely manner, EPA is working with states to streamline their administrative processes and to encourage the use of expedited site assessment and alternative cleanup technologies. The Agency is also encouraging state and local agencies to incorporate risk-based decision-making into their corrective action programs.

Risk based decision-making is a process UST implementing agencies can use to: focus site assessment data gathering; conduct initial response actions; categorize or classify sites; determine what, if any, further action is necessary to remediate a site; help establish cleanup goals; and decide on the level of oversight provided to cleanups conducted by UST owners and operators. To provide support for the use of risk-based decision-making, EPA's Office of Underground Storage Tanks, within the Office of Solid Waste and Emergency Response (OSWER), issued Directive 9610.17: Use of Risk-

Based Decision-Making in UST Corrective Action Programs. The American Society for Testing and Materials (ASTM) has also developed guidance addressing risk-based decision-making in its recently issued standard ASTM E1739-95, Risk Based Corrective Action Applied at Petroleum Release Sites (referred to as RBCA). The ASTM standard is one example of how risk-based decision-making can be incorporated into state UST corrective action programs. EPA believes the ASTM standard may be a good starting point for the development of a risk-based process tailored to applicable state and local laws and regulatory practices. In addition, state UST RBCA processes may often be applicable to petroleum releases from sources other than leaking USTs.

EPA requests general comment on the use of the ASTM RBCA approach in the corrective action program; it is especially interested in comments which address: the appropriateness of using RBCA-like programs to address releases from sources other than leaking underground storage tanks (e.g., petroleum spills and contamination at refineries); whether the ASTM RBCA approach is acceptable for releases of chemicals other than petroleum products; and, whether there have been, or could be, conflicts between the result of a cleanup conducted using the ASTM RBCA approach and cleanups conducted using the RCRA corrective action or CERCLA approaches.

8. Definition of Facility for Corrective Action

As discussed in Section III.B.3.a of today's Notice, EPA's definition of facility for purposes of corrective action has been problematic in some situations. In certain circumstances, the concept of contiguity can bring large tracts of land not involved with hazardous waste management under corrective action authorities. In many cases, these large tracts of land are being (or could be) addressed using another cleanup authority (e.g., CERCLA or state cleanup programs); in other cases, they may not be a high priority for cleanup. For example, EPA indicated in the 1990 proposal that, if five acres of a one hundred-acre parcel of land were leased to a company that engaged in hazardous waste management, the facility for purposes of corrective action could be the entire 100-acre parcel. EPA also stated that if (in the same example) the lessee/operator also owned 20 acres of land adjacent to the 100-acre parcel (but not necessarily adjacent to the five acres used for hazardous waste management), the facility might include that 20 acres

as well. (See, 55 FR 30808, July 27, 1990.) In practice, EPA has found that imposing this interpretation of contiguity on situations such as industrial parks, port districts, and large areas of Federally owned land (e.g., national forests) can, in some cases, force the Agency to address sites which are not engaged in hazardous waste management and which may not be a high priority for cleanup using limited corrective action resources. Another concern has been that it may be seen as inequitable to require the operator of a small facility to be responsible for the cleanup of a much larger parcel that he or she does not own. Accordingly, EPA is requesting comment on whether corrective action requirements should apply more narrowly (e.g., only to the portion of the facility under the control of the operator engaged in hazardous waste management). EPA requests that commenters endorsing a narrow definition of facility address the concern that it would encourage facility owners/operators to narrowly define their facilities in an effort to avoid legitimate corrective action obligations and also address other potential consequences and concerns, if any, of a facility definition which is too narrow.

E. Balance Between Site-specific Flexibility and National Consistency

To account for the variety of circumstances at corrective action facilities, EPA has emphasized a flexible, facility-specific approach to cleanup; however, using a facility-specific approach can raise issues associated with national consistency and minimum national standards. The Agency requests general comment on the appropriate balance between national consistency and site-specific decision-making in the corrective action program. The Agency is specifically interested in comments which address:

1. Land Use

EPA has been criticized for too often assuming that the future uses of facilities undergoing cleanups will be residential. Residential use is considered unrestricted land use and carries the greatest potential for exposures and the most conservative exposure assessments. As discussed in Section III.C.5.j of today's Notice, the Agency believes that the 1990 proposal adequately provides for reasonable consideration of future land use during development of remedial goals at corrective action facilities; however, it recognizes that the uncertainties surrounding land use assumptions may cause many program implementors and facility owners/operators to choose a

conservative approach to future land use issues. Today the Agency invites comment on the general issues associated with consideration of future land use in the corrective action context. EPA is specifically interested in comments which address:

(a) *Effect.* EPA is interested in comments on the effect of a non-residential land use determination on a facility owner/operator's corrective action obligations and the need (if any) for additional regulations to address incorporation of land use determination in the corrective action process. For example, how, if at all, should non-residential land use determinations affect the scope of facility investigations? Should land use determinations be explicitly required as part of remedy selection?

(b) *Institutional controls.* When final remedies rely on non-residential exposure assumptions, steps must be taken to ensure the non-residential exposure assumptions remain valid and to trigger additional cleanups should exposures change. EPA is interested in comments which address the role of the government, if any, in ensuring the continued application of exposure assumptions and in imposing additional cleanups as necessary. In addition to the role of government, commenters should list other factors, incentives or institutions they believe will play a role in this process. The Agency is particularly interested in comment on the adequacy of institutional controls (e.g., deed notices, easements, or local land use controls) to ensure that changes in land use trigger additional cleanups as appropriate, the advantages or disadvantages associated with such controls as opposed to direct governmental oversight.

(c) *Additional cleanup necessitated by changing land use.* EPA requests that commenters specifically address completion of any additional increment of cleanup necessitated by changing land use. The Agency is also interested in comments which address the continuing obligation, if any, of the facility owner/operator to ensure that (should land use change) additional cleanups will be effected, the obligation (if any) on the person who changes the land use at the facility, the legal mechanisms that might be used to impose these obligations, the role of the Agency and/or facility owner/operator in monitoring land use changes and the necessity, if any, for the facility owner/operator or others to provide financial assurance in case an additional cleanup should become necessary.

(d) *Periodic review of remedies.* The Superfund program periodically reviews

remedies to ensure their continued effectiveness. EPA requests commenters address the need for and potential benefits or problems associated with periodic review of RCRA corrective action remedies. Commenters who believe periodic review of remedies is desirable should address the frequency and content of such reviews.

2. Points of Compliance

The location at which media cleanup levels must be attained (point of compliance or POC) has significant implications for the scope, magnitude and cost of corrective actions. Comments regarding the POC for corrective actions were received in response to the 1990 proposal; this issue has remained controversial and EPA believes it is appropriate to provide another opportunity for public review and comment at this time. The Agency requests general comment on its implementation of the point of compliance concept in the corrective action program and other POC issues. EPA is especially interested in comments which address:

(a) *Alternatives to the throughout-the-plume/unit boundary POC.* EPA requests suggestions on alternative POCs, especially groundwater POCs. Commenters should address the factors, scenarios, and decision-making criteria that should be considered in justifying alternatives to a throughout-the-plume/unit boundary POC (e.g., a facility boundary POC). In supplying input on alternative POCs for groundwater, commenters should consider the Agency's expectations for groundwater cleanups, (1) returning groundwater to its maximum beneficial uses wherever practicable; (2) preventing or minimizing further migration, preventing exposure to the contaminated groundwater and evaluating further risk-reduction; and, (3) controlling or eliminating surface and subsurface sources of groundwater contamination. Commenters who believe that changes to EPA's expectations for groundwater are necessary to support appropriate POCs are also invited to comment on EPA's groundwater expectations in general.

(b) *Points of compliance for stabilization.* EPA requests comments on whether it should develop a stabilization point of compliance or to support the Stabilization Initiative. As discussed in Section II.E.1 of today's Notice, the Stabilization Initiative is EPA's primary corrective action implementation strategy. Stabilization actions for groundwater often involve source control and hydraulic containment. A stabilization point of

compliance could be used to help define the location at which a performance measure of groundwater plume containment would be measured.

(c) *Point of compliance for surface water.* Typically, the point of compliance for releases to surface water is at the point where the release enters the surface water. EPA requests comments regarding factors that should be considered in selecting the appropriate standards that must be achieved at the point where the release enters surface water. For example, is it appropriate to consider the mixing that occurs within the receiving surface water when establishing points of compliance for surface water discharges? Mixing zones are often considered when evaluating the acceptability of waste water discharges regulated by the National Pollution Discharge Elimination System (NPDES).

EPA also requests comments on the differences between evaluating the actual and potential impact from point source "pipeline" NPDES discharge and a more widespread discharge of groundwater entering as base-flow into the surface water body. Of particular interest associated with groundwater discharge to surface water is the potential for, and impacts from accumulation of contaminants in sediments. Also, the Agency is interested in feedback regarding the degree to which monitoring would be capable of assessing impacts of both the short- and long-term discharge of groundwater to surface and the associated standard of protection being afforded. The Agency is interested in examples where a discharge to surface water of certain loadings of contaminated groundwater was determined to be harmful or not harmful to human or ecologic receptors.

3. Standardized Lists of Action Levels and Media Cleanup Levels

The attempt to balance flexibility with the need for national consistency can be particularly contentious in the area of media-specific action and cleanup levels. Some stakeholders argue that lists of clearly defined action and cleanup levels will reduce transaction costs, increase the pace of cleanups and encourage voluntary actions; many program implementors and facility owners/operators currently use lists of standardized action or cleanup levels when implementing corrective action requirements (e.g., some states have lists of standardized media-specific cleanup levels). Other stakeholders argue that standardized lists of action or cleanup levels are too often developed based on conservative residential exposure

scenarios, can be too easily misapplied, and often result in overly stringent cleanup actions. As an alternative to lists of standardized action and cleanup levels, some Agencies have developed standardized approaches (i.e., formulas) that allow for consideration of site-specific conditions. EPA has recently taken this approach in developing the Superfund Soil Screening Guidance (see, Section II.F.6.b of today's Notice).

EPA invites general comments and suggestions pertaining to the development, distribution and use of media-specific action and cleanup levels. The Agency is specifically interested in comments which address the advantages, disadvantages and preferences regarding standardized approaches versus publishing lists of standardized levels (note, lists of standardized levels would be developed using standardized approaches, the difference is in consideration of site-specific factors, such as depth to groundwater). Since many states have already developed standardized approaches or lists of action and cleanup levels, EPA requests commenters also address the role of EPA in developing, distributing, and periodically updating national approaches or lists and the relationship of any standardized approaches or lists developed at the national level to existing state programs.

4. Area Wide Contamination Issues

In some cases corrective action facilities are located in areas of widely dispersed contamination. For example, some corrective action facilities may be located in tidal areas which were reclaimed by placement of fill materials now considered contaminated. In other cases, an RCRA corrective action facility may be impacted by releases from off-site source areas not subject to RCRA corrective action (e.g., sources at an adjacent facility not seeking an RCRA permit). In some of these circumstances, cleanup of the corrective action facility to risk based media cleanup levels, while desirable in the long term, might not make sense in the short term because contamination from off-site or otherwise unrelated sources would quickly re-contaminate the facility. EPA requests comments on application of corrective action requirements in areas of widely dispersed contamination and when the RCRA facility is otherwise impacted by releases from off-site sources. EPA requests that commenters specifically address the obligation, if any, a facility owner/operator should have to address the area-wide contamination to the extent it is present at his or her facility. If commenters

believe facility owners/operators should not be required to address area-wide contamination, the Agency requests comments on the continuing obligation under RCRA, if any, such facility owners/operators should have for an eventual cleanup to risk based levels.

5. Ecological Risk

As described in Section III.C.5.g of today's Notice, EPA's mandate is to protect both human health and the environment; therefore, assessing risks to ecologic receptors may be warranted in the context of implementing RCRA corrective action at many sites. The Agency recognizes, however, that assessing impact to ecologic receptors from environmental contamination is a rapidly evolving field of study. Therefore, the Agency is interested in receiving comments and data pertaining to: state-of-the-art approaches and tools for conducting ecologic-risk assessment, including initial screening as well as detailed assessments; availability of identification of useful guidance; availability of standardized eco-based action levels and cleanup levels, or standardized approaches for developing site-specific levels; site-specific examples of impacts to ecologic receptors from RCRA corrective action sites, and examples of successful remedial actions implemented to address these impacts; limitations associated with assessing ecologic risks, and taking remedial actions to protect ecologic receptors in general; specific needs for additional guidance and research; and suggestions regarding the scope of specific corrective action regulations dealing with assessment and protection of ecologic receptors.

6. Risk Assessment Methods

EPA has been criticized for relying on uniform, "one size fits all" risk assessment methods, particularly in the context of its remedial action programs. According to critics, often, the default assumptions or models incorporated into Agency risk assessment guidance documents do not adequately reflect site-specific conditions. The use of empirical data collected from a site, or methods developed expressly for application at specific sites or types of sites, could result in more valid and reliable characterizations of risks to human health and the environment. On the other hand, not every site would benefit from a comprehensive site-specific evaluation. EPA thus needs to strike a balance between the ease of uniform risk assessment methods and the improved targeting and effectiveness associated with accounting for site-specific conditions.

EPA is interested in the effect of provisions which would encourage the expanded consideration of site-specific conditions and other innovative risk assessment methods where such provisions would enhance program effectiveness or efficiency. For example, how could the Agency provide for the use of site-specific or innovative approaches to risk assessment while still enabling EPA or state agencies to maintain adequate oversight? Are there mechanisms available for risk assessment to be independently validated as reasonable characterizations of site risk, thereby reducing the demands for technical oversight and the time required to approve site-specific decisions. What incentives (if any) should EPA provide to encourage these efforts? What provisions or procedures, either in the 1990 proposal or in existing regulations, inhibit the effective use of site-specific risk assessments?

Significant improvements in risk assessment methodology have occurred since the 1990 proposal. EPA is interested in capturing these benefits in the corrective action program. The Agency thus seeks comments concerning how RCRA corrective action regulations might be constructed so as to maximize the extent to which these improvements are reflected in site evaluations, as well as the development and selection of remedial alternatives. Further, EPA is interested in comments addressing actions the Agency could take to act as a positive force for change in the evolutionary improvement of risk assessment methods.

F. Public Participation and Environmental Justice

EPA intends for the final corrective action regulations to be consistent with the Agency's efforts to improve permitting and public participation while providing sufficient flexibility to meet site-specific goals. The Agency believes that facility owners/operators, state environmental agencies, tribes, and private citizens are often in the best positions to determine what modes of communication and participation will work best in their communities. EPA believes the final rule should provide the flexibility necessary to find the best local solutions.

EPA requests general comment on the role of public participation in the corrective action program and on opportunities to improve public participation, especially the participation of any communities which have not been effectively involved in the corrective action process to date.

The Agency is particularly interested in comments which address:

(a) Public participation tools.

Currently, most public participation opportunities center around use of public notices (usually in a local newspaper) and public meetings. EPA requests that commenters address the use of additional public participation tools (such as public participation plans, community advisory panels, fact sheets, workshops, on-line communications, and informal meetings) which might be more effective in reaching communities.

(b) Public participation responsibility.

EPA believes there may be situations where the corrective action process would benefit if the facility initiated the permit modifications under 40 CFR 270.42, rather than the Agency initiating permit modifications under 40 CFR 270.41. For instance, if a facility owner/operator must undertake an interim action, it may be more appropriate for the facility to request a permit modification. EPA anticipates that allowing this flexibility would improve interaction between the public and the facility and allow owners/operators to streamline the process by combining modifications, where appropriate. We request comment on this approach and the use of owner/operator initiated permit modifications to provide public participation opportunities.

(c) Tailoring public participation to the level of interest. EPA encourages facility owners/operators and regulatory agencies to choose a level of public participation that is commensurate with the level of public interest. The Agency is aware of innovative approaches to public participation where the level of public participation opportunities increase dramatically if a certain number of citizens from the affected community request increase public participation. The Agency realizes that every corrective action process is different and may involve overlapping and varied activities. EPA requests comments on public participation tools which could be used to tailor public participation opportunities to the level of interest in the affected community and to the significance of any given corrective action activity. The Agency requests that commenters who support tailoring public participation requirements to the level of interest at any given facility also address the degree to which the Agency or the facility owner/operator should take steps to inform the public of the onset of corrective actions to initiate public interest.

G. When Permits Can Be Terminated

The 1990 proposal contained a provision requiring owners and operators to obtain RCRA permits for the entire "period necessary to comply with the requirements of Subpart S" (proposed 40 CFR 270.1(c)). As discussed in the preamble to the 1990 proposal (see, 55 *FR* at 30846) this was intended to apply even where the hazardous waste management activities that originally triggered the need to obtain a permit were no longer continuing. The aim of this provision was to ensure that corrective action was carried to its conclusion. Furthermore, EPA believed that if corrective action obligations ceased when the need for the permit otherwise ended, an artificial incentive would be created to terminate viable facilities (e.g., facility owners/operators would choose to curtail management of hazardous waste—and the need for an RCRA permit—in to avoid completing corrective actions).

When the CAMU rule was promulgated, EPA reiterated its view that facilities undergoing corrective action must continue to renew their permits, even if the original regulated hazardous waste activity has ceased, until the corrective action has been completed. See 58 *FR* at 8676–77. EPA clarified that this obligation arises under existing statutes and regulations, even pending final promulgation of the additional language proposed in 1990. EPA indicated at that time that it would determine whether further regulatory clarification of this issue was necessary.

At this time, EPA is inviting comment on whether, as a policy matter, extended permitting is the best approach to ensuring that corrective action is carried out over the long term, or whether other alternatives should be considered. For example, one approach might be to terminate the permit when active hazard waste management ceased, but to continue the cleanup obligation through some other vehicle, possibly an enforcement order. Any alternatives proposed should address such matters as the reliability of the approach over the very long term, the level of administrative oversight required, the legal basis in RCRA for imposing the requirement if a permit is not issued and whether the RCRA statute would allow terminating a permit before the corrective action was complete. Commenters proposing alternatives are particularly encouraged to address options for the situation where engineering or institutional controls must be managed indefinitely into the future and whether permits can or should be terminated when the final

remedy involves some form of engineering or institutional controls. Commenters who support permit termination when final remedies involve engineering or institutional controls are encouraged to address what other mechanisms, if any, should be used to ensure continued reliability of the engineering or institutional control and the role of EPA, if any, in imposing, maintaining and enforcing such mechanisms.

H. Effect of Property Transfer on Corrective Action Requirements

The transfer of part of a facility subject to corrective action creates questions regarding which corrective action obligations continue at the transferred parcel and which party has the corrective action responsibility. The 1990 proposal discussed this issue, and EPA is still interested in general comments in this area. The 1990 proposal identified two options: requiring the permittee to complete corrective action even on parcels sold to others, and requiring the purchaser of the parcel to complete the corrective action. EPA continues to be interested in comments on these two options.

A related issue is the point in time at which the extent of the facility is defined. For example, if a parcel were transferred after a permit application had been submitted, but before a permit or corrective action order was issued, the implications might be different from if the transfer occurred after the permit was issued. The 1990 proposal also suggested that it might make a difference whether the transfer occurred before implementation of the remedy. Since RCRA corrective action requirements apply to the current owner and operator of an RCRA facility and do not routinely extend to past facility owners/operators, EPA believes there may be some incentive for facility owners/operators to sell portions of their facilities before corrective action requirements can be imposed. EPA is aware of situations where a facility owner/operator has sold entire facilities, excluding only the closed RCRA regulated units, in what seems to be an effort to avoid application of RCRA corrective action requirements. While EPA has numerous authorities that could be used to address cleanup requirements even after portions of the facility had been sold, EPA believes application of these other authorities, rather than RCRA corrective action authorities, could increase transaction costs and delay cleanups.

I. Financial Assurance for Corrective Action

Currently, Financial Assurance for Corrective Action or FACA is required under 40 CFR 264.101. More detailed requirements for financial assurance for corrective action were proposed on October 24, 1986 (51 *FR* 37854) and in the 1990 proposal. EPA requests general comment on the need for detailed corrective action financial assurance regulations and the utility of the 1986 and 1990 proposals as guidance in this area. Commenters should address whether regulations or guidance would better promote the goals of the corrective action program and financial assurance for corrective action, and whether the flexibility inherent in the FACA proposals has been useful or detrimental. In addition, EPA is interested in comments which address:

(a) *Timing of financial assurance.* EPA requests commenters address both the stages in the corrective action process where FACA requirements have proven most useful (e.g., should financial assurance be required before a remedy is selected, perhaps to ensure completion of facility investigations) and the stages, if any, where FACA requirements have been of limited utility. In its previous notices, EPA has said that financial assurance should be required at the time of remedy selection. Is this still an appropriate policy? EPA is especially interested in comments that address whether financial assurance has been an impediment to corrective actions due to the investment entailed. In addition, the Agency requests comments on how the amount of financial assurance required should be determined. For example, should financial assurance be required for operation and maintenance costs in perpetuity or should it be required for a standardized length of time (e.g., five, ten or twenty years)? Should the financial assurance timing be adjusted to address interim measures and support the stabilization initiative? Because cost estimations at certain stages in the process can be inaccurate, should financial assurance requirements cover shorter time frames, such as two years? Should EPA be concerned with financial assurance for short term investigation and construction costs, or should we focus on assuring long term operations and maintenance expenses?

(b) *Design of a FACA rule.*

Commenters who believe that EPA should promulgate detailed regulations on financial assurance for corrective action should address the design of such rules. Alternatively, are the current general rules sufficient or more

appropriate? Are there algorithms or decision guidelines which have proven successful in ensuring adequate financial assurance; should EPA adopt these guidelines as guidance or in regulation for corrective action financial assurance? How should financial capability enter into decisions on stabilization or corrective measures? How well is the current financial assurance for corrective action program working? EPA is interested in alternative approaches to ensuring the completion of corrective actions. For example, are there particular state rules which have proven effective in dealing with both financially sound and financially weak firms? Are there other clean up programs which address financial assurance more effectively than the current corrective action program? Should evidence of corporate commitments to cleanups such as continuing construction and progress affect financial assurance requirements? If so, how?

(d) *Cost estimates.* EPA requests that commenters address the accuracy and timing of FACA cost estimates. EPA is interested in comments which address the causes for differences among FACA estimates at various stages in the corrective action process, differences between estimates and actual figures, particular stages of the corrective action process which are more prone to cost errors than others, the time period over which cost estimates are most accurate, and the relationship between costs reported to permitting authorities and costs reported in financial reports. Some permittees have suggested that cost estimates cover only a period of two to three years with annual updates. Would this be adequate and appropriate?

(e) *Discounting.* EPA requests that commenters address the use of discounting in the FACA process. For example, would discounting produce better estimates of corrective action costs or change corrective action

decisions? If commenters believe discounting is appropriate, the Agency requests that comments address the effect of discounting on FACA instruments, appropriate discount factors and time frames and, if discounting is used, the bases for requiring or not requiring FACA for the whole process.

(f) *Use of the 1986 Proposal As Guidance.* EPA requests that commenters provide information on when the 1986 proposal has been useful as guidance. Have the mechanisms in the proposal provided for clean ups or clean up activities which would not have occurred without them? Have the mechanisms or requirements diverted resources from actual clean up activities? Are the proposal mechanisms unnecessary, insufficient, or outdated?

J. State Authorization

EPA requests comments on general issues associated with state authorization for corrective action and the relative roles of state and Federal agencies in authorized states. EPA is particularly interested in comments which address:

(a) *Rate and pace of authorization.* EPA intends for states to be the primary implementors of the RCRA program. Although 49 states and territories are authorized to implement the RCRA program, many of these states are also authorized for significant amendments to the RCRA program, including 29 states which are authorized for corrective action. EPA requests comments on incentives (and disincentives) to corrective action authorization and suggestions for improving the efficiency of authorization processes.

(b) *Role of EPA in authorized states.* As more states become authorized, EPA's role is changing. For example, in many states EPA is doing much less direct program implementation. EPA is interested in defining its role in

authorized states and in developing oversight models which use state and Federal resources most efficiently (e.g., focus on results, rather than process).

(c) *Effect of promulgation of corrective action rules on authorized state programs.* Final corrective action regulations will be promulgated pursuant to HSWA. Ordinarily, more stringent HSWA rules are immediately effective in authorized states (RCRA Section 3006(g)(1)). However, EPA is concerned about potential disruptions to ongoing cleanup being conducted pursuant to authorized state corrective action programs and does not want authorized state corrective action programs to revert back to EPA. Therefore, in 1990, EPA proposed that any revisions to final Subpart S corrective action regulations would not become effective in states authorized for Subpart S until those states had adopted the new rules. Currently 29 states are authorized for the existing corrective action regulations, EPA believes the same logic that led it to propose that revisions to the corrective action regulations proposed in 1990 would not become effective in authorized states until states adopted them could arguably be applied to the current situation; therefore, EPA requests comments on whether final corrective action regulations should not be effective in states authorized for the existing corrective action program until those states adopt the final rules. EPA also requests comments on approaches to authorization which will minimize disruption of existing state corrective action programs upon promulgation of new Federal corrective action requirements.

Dated: April 12, 1996.

Carol M. Browder,
Administrator.

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II.B.4

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HSWA CORRECTIVE ACTION

4.0 Document Formats

These standardized document formats are provided as guidance to both the reviewer of HSWA Corrective Action documents and the regulated community. Written variances from these document formats may be requested of the RPMP Facility Manager.

FACILITY-WIDE WORKPLANS OUTLINE

1.0 PROJECT MANAGEMENT PLAN

1.1 Background

1.2 Purpose and Scope

1.2.1 Statutory and Regulatory Framework

1.2.1.1 Resource Conservation and Recovery Act (RCRA)

1.2.1.2 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

1.2.1.3 Integration of the Provisions of RCRA and CERCLA

1.2.1.4 Integration of the Provisions of RCRA and the National Environmental Protection Act

1.2.1.5 Other Statutes and Regulations

(a) Federal Statutes

(b) State Statutes

(c) DOE Orders, Executive Orders and Secretary of Energy Notices

1.3 Project Structure

1.3.1 Organization of the Project Office

1.3.1.1 Management Team

1.3.1.2 Regulatory Compliance Manager

1.3.1.3 Project Consistency Manager

1.3.1.4 Field Managers

1.3.1.5 Other Key Personnel and Functions in the Project

1.3.2 Project Planning and Control System

1.3.3 Reporting Requirements

2.0 FACILITY DESCRIPTION

2.1 Description

2.1.1 Operational History

2.1.2 Geography

2.1.3 Land Use

2.1.4 Population Distribution

2.2 Environmental Setting

2.2.1 Geology

2.2.1.1 Regional Setting

2.2.1.2 Stratigraphy

2.2.1.3 Soils

2.2.1.4 Geologic Structure

2.2.1.5 Seismicity and Volcanism

2.2.1.6 Geomorphic Processes

FACILITY-WIDE WORKPLANS OUTLINE

- 2.2.2 Hydrology
 - 2.2.2.1 Surface Water
 - 2.2.2.2 Ground Water
- 2.2.3 Ecology
 - 2.2.3.1 Flora
 - 2.2.3.2 Fauna
 - 2.2.3.3 Surface Water
- 2.2.4 Meteorology
- 3.0 QUALITY ASSURANCE PROJECT PLAN
 - 3.1 Background
 - 3.2 Assessment Strategy
 - 3.2.1 Corrective Action Process Decisions
 - 3.2.2 Approach to Data Collection and Evaluation
 - 3.3 Field Sampling
 - 3.3.1 Objectives
 - 3.3.1.1 Data Collection
 - (a) Sample Location and Frequency
 - (b) Sample Designation
 - 3.3.1.2 Field Measurements
 - 3.3.2 Field QA/QC Program
 - 3.3.3 Sampling Equipment and Procedures
 - 3.3.3.1 Sampling Procedures
 - 3.3.3.2 Field Quality Control Sampling Guidance
 - 3.3.3.3 Equipment Decontamination
 - 3.3.4 Sample Handling and Analysis Procedures
 - 3.4 Site Management and Record Keeping
 - 3.4.1 Site Access and Security
 - 3.4.2 Temporary Facilities
 - 3.4.3 Waste Disposal
 - 3.4.4 Contingency Plans
 - 3.4.5 Record Keeping
- 4.0 RECORDS MANAGEMENT PLAN
 - 4.1 Organization
 - 4.1.1 Regulatory Mandate
 - 4.1.2 Objectives
 - 4.1.3 Terminology

FACILITY-WIDE WORKPLANS OUTLINE

- 4.2 Description
 - 4.2.1 Work Flow, Procedures and Control
 - 4.2.2 Implementation
- 4.3 Description of Records Management Facilities
- 4.4 Coordination
 - 4.4.1 Quality Program
 - 4.4.2 Project Planning and Control Team
 - 4.4.3 Public Involvement Program
- 5.6 HEALTH AND SAFETY PLAN
 - 5.1 Introduction
 - 5.1.1 Purpose and Applicability
 - 5.1.2 Review and Approval
 - 5.2 Personnel
 - 5.2.1 Organization
 - 5.2.1.1 Project Team
 - (a) Line Managers
 - (b) Field Teams
 - 5.2.1.2 Health and Safety Personnel
 - 5.2.1.3 Health Physics Personnel
 - 5.2.1.4 Project Support
 - 5.2.2 Training Requirements
 - 5.2.2.1 HAZWOPER Requirements
 - 5.2.2.2 First Aid Requirements
 - 5.2.2.3 Other OSHA Requirements
 - 5.2.2.4 Other Requirements
 - 5.2.3 Medical Surveillance
 - 5.3 Site History and Description
 - 5.4 Hazard Assessment
 - 5.4.1 Task Hazard Analysis
 - 5.4.1.1 Chemical
 - 5.4.1.2 Radiological
 - 5.4.1.3 Physical
 - 5.4.1.4 Biological
 - 5.4.1.5 Job Hazard Analyses

FACILITY-WIDE WORKPLANS OUTLINE

- 5.4.2 Site Control
 - 5.4.2.1 Administrative Controls
 - 5.4.2.2 Engineered Controls
 - 5.4.2.3 Communication
- 5.5 Personal Protective Equipment
- 5.6 Decontamination
- 5.7 Emergency and Contingency Plan
- 5.8 Record Keeping
- 6.0 WASTE MANAGEMENT PLAN
 - 6.1 Introduction
 - 6.2 Regulatory Requirements
 - 6.2.1 Waste Characterization/Classification
 - 6.2.2 Hazardous Waste
 - 6.2.3 Special Waste
 - 6.2.4 Surface/Ground Water Discharges
 - 6.3 Waste Management
 - 6.3.1 Waste Types
 - 6.3.1.1 Investigation-derived Waste
 - (a) Well Development, Purge and Decontamination Water
 - (b) Personal Protective Equipment
 - 6.3.1.2 Remedial Action Waste Streams
 - 6.3.1.3 Radioactive Wastes
 - 6.3.1.4 Other Wastes
 - 6.3.2 Control Measures
 - 6.3.3 Documentation
 - 6.3.3.1 Transportation
 - (a) Manifests
 - (b) LDR Certification
 - (c) Special Waste
 - 6.3.3.2 Record Keeping and Reporting Requirements
 - (a) RCRA Waste
 - (b) Radioactive Waste
- 7.0 PUBLIC INVOLVEMENT PLAN
 - 7.1 Introduction

FACILITY-WIDE WORKPLANS OUTLINE

- 7.2 Involvement Process**
 - 7.2.1 Information Preparation**
 - 7.2.2 Information Dissemination**
 - 7.2.2.1 Community Meetings**
 - 7.2.2.2 Tours**
 - 7.2.2.3 Educational Programs**
 - 7.2.3 Public Input**

SAMPLING AND ANALYSIS PLANS/WORKPLANS OUTLINE

- 1.0 Introduction**
 - 1.1 Objectives and Scope**
 - 1.2 Approach and Implementation**
 - 1.3 Background Issues**
 - 1.3.1 Regulatory Requirements**
 - 1.3.2 Other Issues**
 - 1.4 Data Quality Objectives Process**
- 2.0 Solid Waste Management Unit/Area of Concern (SWMU/AOC) X**
 - 2.1 Characterization and Setting**
 - 2.1.1 Site Description**
 - 2.1.2 Operational History**
 - 2.1.3 Waste Characteristics**
 - 2.2 Investigatory Approach**
 - 2.2.1 Existing Data**
 - 2.2.1.1 Non-sampling**
 - 2.2.1.2 Sampling**
 - 2.2.2 Conceptual Model**
 - 2.2.2.1 Nature and Extent of Contamination**
 - 2.2.2.2 Fate and Transport**
 - 2.2.2.3 Data Gaps**
 - 2.2.3 Sampling Activities**
 - 2.2.3.1 Contaminant Source**
 - 2.2.3.2 Media Characterization**
- 3.0 SWMU/AOC Y...**
- 4.0 Data Collection Design and Procedures**
 - 4.1 Data Quality Objectives**
 - 4.2 Quality Assurance/Quality Control**
 - 4.3 Field Activities**
- 5.0 Project Management**
 - 5.1 Project Scheduling and Reporting Requirements**
 - 5.2 Health and Safety Plan (see Attachment)**
 - 5.3 Investigation-derived Waste Plan (SOP)**
 - 5.4 Community Relations Plan (SOP)**

SAMPLING AND ANALYSIS PLANS/WORKPLANS OUTLINE

REFERENCES

Table 1 - Proposed Samples

Figure 1 - Sample Locations: Source, Surface Water, Sediment and Soil

Figure 2 - Sample Locations: Ground Water

ATTACHMENT A - Health and Safety Plan

II.B.4.a.(3)

RCRA FACILITY INVESTIGATION REPORT OUTLINE

EXECUTIVE SUMMARY

1.0 INTRODUCTION

2.0 Solid Waste Management Unit/Area of Concern (SWMU/AOC) X

2.1 Summary

2.2 Description and Operational History

2.2.1 Site Description

2.2.2 Operational History

2.3 Investigatory Activities

2.3.1 Summary

2.3.2 Previous Investigations

2.3.3 Preliminary Conceptual Model

2.3.4 Field Investigation and Data Evaluation

2.3.4.1 Summary

2.3.4.2 Field Investigation

2.3.4.3 Data Review

(a) Inorganic Chemical Comparison with Background

(b) Radionuclide Comparison with Background/Fallout
Radionuclide Concentrations

(c) Evaluation of Organic Chemicals

(d) Other Applicable Data

2.3.5 Revised Site Conceptual Model

2.3.5.1 Nature and Extent of Contamination

2.3.5.2 Environmental Fate

2.4 Site Assessments

2.4.1 Summary

2.4.2 Screening Assessments

2.4.2.1 Human Health

(a) Scoping

(b) Screening Evaluation

(c) Uncertainty Analysis

(d) Interpretation

2.4.2.2 Ecological

(a) Scoping

(b) Screening Evaluation

(c) Uncertainty Analysis

(d) Interpretation

RCRA FACILITY INVESTIGATION REPORT OUTLINE

2.4.3 Risk Assessments

2.4.3.1 Human Health

- (a) Selection of Chemical(s) of Concern**
- (b) Exposure Assessment**
- (c) Toxicity Assessment**
- (d) Risk and Dose Characterization**
- (e) Uncertainty Analysis**
- (f) Interpretation**

2.4.3.2 Ecological Risk Assessment

- (a) Selection of Chemical(s) of Concern**
- (b) Exposure Assessment**
- (c) Toxicity Assessment**
- (d) Risk and Dose Characterization**
- (e) Uncertainty Analysis**
- (f) Interpretation**

2.4.4 Other Applicable Assessments

2.4.4.1 Surface Water

2.4.4.2 Ground Water

2.4.4.3 Underground Storage Tanks

2.4.4.4 Other

2.5 Conclusions and Recommendations

3.0 SWMU/AOC Y...

HSWA/CA-RELATED PERMIT MODIFICATION REQUESTS NO FURTHER ACTION PROPOSALS

EXECUTIVE SUMMARY

- 1.0 INTRODUCTION
- 2.0 Solid Waste Management Unit/Area of Concern (SWMU/AOC) X
 - 2.1 Summary
 - 2.2 Description and Operational History
 - 2.2.1 Site Description
 - 2.2.2 Operational History
 - 2.3 Land Use
 - 2.3.1 Current
 - 2.3.2 Future/Proposed
 - 2.4 Investigatory Activities
 - 2.4.1 Summary
 - 2.4.2 Investigation #1
 - 2.4.2.1 Non-sampling Data Collection
 - 2.4.2.2 Sampling Data Collection
 - 2.4.2.3 Data Gaps
 - 2.4.2.4 Results and Conclusions
 - 2.4.3 Investigation #2...
 - 2.5 Site Conceptual Model
 - 2.5.1 Nature and Extent of Contamination
 - 2.5.2 Environmental Fate
 - 2.6 Site Assessments
 - 2.6.1 Summary
 - 2.6.2 Screening Assessments
 - 2.6.2.1 Human Health
 - 2.6.2.2 Ecological
 - 2.6.3 Risk Assessments
 - 2.6.3.1 Human Health
 - 2.6.3.2 Ecological
 - 2.6.4 Other Applicable Assessments
 - 2.6.4.1 Surface Water
 - 2.6.4.2 Ground Water
 - 2.6.4.3 Underground Storage Tanks
 - 2.6.4.4 Other
 - 2.7 No Further Action Proposal
 - 2.7.1 Rationale
 - 2.7.2 Criterion
- 3.0 SWMU/AOC Y...

NO FURTHER ACTION (NFA) PROPOSALS CRITERIA

- NFA Criterion 1** The Solid Waste Management Unit/Area of Concern (SWMU/AOC) cannot be located, does not exist or is a duplicate SWMU/AOC.
- NFA Criterion 2** The SWMU/AOC has never been used for the management (i.e., generation, treatment, storage and/or disposal) of Resource Conservation and Recovery Act (RCRA) solid waste or hazardous wastes and/or constituents or other Comprehensive Environmental Response, Conservation and Liability Act (CERCLA) hazardous substances.
- NFA Criterion 3** No release to the environment has occurred or is likely to occur in the future from the SWMU/AOC.
- NFA Criterion 4** A release from the SWMU/AOC to the environment has occurred, but the SWMU/AOC was characterized and/or remediated under another authority (such as the New Mexico Environment Department's Underground Storage Tank or Ground Water Quality Bureaus), which adequately addressed RCRA corrective action, and documentation, such as a closure letter, is available.
- NFA Criterion 5** The SWMU/AOC has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

RCRA FACILITY INVESTIGATION REPORT OUTLINE CHECKLIST

✓	ITEM
	EXECUTIVE SUMMARY
	1.0 INTRODUCTION
	2.0 Solid Waste Management Unit/Area of Concern (SWMU/AOC) X
	2.1 Summary
	2.2 Description and Operational History
	2.2.1 Site Description
	2.2.2 Operational History
	2.3 Investigatory Activities
	2.3.1 Summary
	2.3.2 Previous Investigations
	2.3.3 Preliminary Conceptual Model
	2.3.4 Field Investigation and Data Evaluation
	2.3.4.1 Summary
	2.3.4.2 Field Investigation
	2.3.4.3 Data Review
	(a) Inorganic Chemical Comparison with Background
	(b) Radionuclide Comparison with Background/Fallout Radionuclide Concentrations
	(c) Evaluation of Organic Chemicals
	(d) Other Applicable Data
	2.3.5 Revised Site Conceptual Model
	2.3.5.1 Nature and Extent of Contamination
	2.3.5.2 Environmental Fate
	2.4 Site Assessments
	2.4.1 Summary

RCRA FACILITY INVESTIGATION REPORT OUTLINE CHECKLIST

✓	ITEM
	2.4.2 Screening Assessments
	2.4.2.1 Human Health
	(a) Scoping
	(b) Screening Evaluation
	(c) Uncertainty Analysis
	(d) Interpretation
	2.4.2.2 Ecological
	(a) Scoping
	(b) Screening Evaluation
	(c) Uncertainty Analysis
	(d) Interpretation
	2.4.3 Risk Assessments
	2.4.3.1 Human Health
	(a) Selection of Chemical(s) of Concern
	(b) Exposure Assessment
	(c) Toxicity Assessment
	(d) Risk and Dose Characterization
	(e) Uncertainty Analysis
	(f) Interpretation

RCRA FACILITY INVESTIGATION REPORT OUTLINE CHECKLIST

✓	ITEM
	2.4.3.2 Ecological Risk Assessment
	(a) Selection of Chemical(s) of Concern
	(b) Exposure Assessment
	(c) Toxicity Assessment
	(d) Risk and Dose Characterization
	(e) Uncertainty Analysis
	(f) Interpretation
	2.4.4 Other Applicable Assessments
	2.4.4.1 Surface Water
	2.4.4.2 Ground Water
	2.4.4.3 Underground Storage Tanks
	2.4.4.4 Other
	2.5 Conclusions and Recommendations
	3.0 SWMU/AOC Y...

HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

Position Paper

SITE-SPECIFIC BACKGROUND

The New Mexico Environment Department Hazardous and Radioactive Materials Bureau shall approve all site-wide and/or site-specific background values.

A background value is defined as a naturally-occurring concentration of inorganic constituent in an environmental medium (sediment, soil, air and water) **not** affected by facility operations.

HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

Position Paper

COMPOSITING OF SOIL SAMPLES DURING SITE CHARACTERIZATION

Without prior New Mexico Environment Department Hazardous and Radioactive Materials Bureau approval, the appropriate method of sample collection for the purposes of site characterization is to obtain discrete samples by depth intervals.

Compositing is one of the sampling methodologies which may be appropriate for evaluating average waste characteristic properties for disposal purposes. Composite sampling should **not** be used as the only input to risk assessment; discrete soil depth intervals are needed to characterize site contaminants to determine or predict exposure.

BACKGROUND

Composite samples are combinations of more than one sample collected at various sampling location and/or different times. Analysis of composite samples yields a value representing an average over the sampling locations which may not accurately describe the distribution of contaminant concentrations or identify hot spots. Compositing can mask problems by diluting contaminants through mixing samples of higher concentration with samples of lower concentration resulting in dilution of contaminant concentrations below limits of concern or detection.

Compositing does not allow the spatial variability of data to be determined and the confidence in a composite value may be impossible to discern (EPA, 1997). Furthermore, chemical changes may occur in a composite sample due to mixing of different chemicals. Compositing will cause the volatilization of organic constituents resulting in sample degradation.

As discussed in the RAGS document (*EPA, 1989b*), one of the major problems in sampling soil (and other solid materials) is its generally heterogeneous nature (due to the heterogeneous soil matrix and/or contaminant soil distribution) which makes collection of representative samples difficult. Thus, a number of grab soil samples are required to obtain sufficient data to characterize the spatial and vertical distribution of contaminants in soil and to identify areas with similar (homogeneous) contaminant patterns. Grab samples represent a single unique part of a medium (in this case soil) collected at a specific location and time.

Because composite samples combine sub-samples from different locations and/or times, composite samples may dilute or otherwise misinterpret contaminant concentrations by masking hot spots (areas of high contamination relative to other areas of the site) as well as areas of low contaminant concentrations. Therefore, hot spots or areas of low contaminant concentration cannot be determined using composite samples. If a hot spot is located near an area which is visited frequently, exposure to the hot spot should be assessed separately.

After appropriate site characterization (i.e., the nature and extent of contamination determined) and with prior Administrative Authority approval, compositing can be an acceptable and a cost-effective soil sampling method to determine the exposure concentrations in areas of homogeneous contaminant soil distribution and when the soil matrix is homogeneous.

HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

Position Paper

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)

The use of TCLP is inappropriate for the purposes of site characterization.

TCLP is used for the following activities:

- simulating the leaching a waste will undergo if disposed of in a landfill (SW-846)
- characterizing waste for determining if a solid waste exhibits the characteristic of toxicity and is, therefore, a characteristic hazardous waste (40 CFR 261.24)
- determining disposal options - solid waste versus hazardous waste

TCLP should not be used for the following activities:

- site characterization in determining the nature, rate and extent of contamination (screening action levels, standards, etc.)
- release determination
- risk assessment
- soil screening action levels
- confirmation sampling

REFERENCES

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, 3rd Edition.

40 Code of Federal Regulations (40 CFR) 260.11, 261.24, and 261 Appendix II.

RCRA Corrective Action Training manual, U.S. EPA, September 1996.

RCRA Facility Investigation (RFI) Guidance, EPA 530/SW-89-031, May 1989.

REFERENCES

EPA, 1987. *Data Quality Objectives for Remedial Response Activities. Volume 1 - Development Process. EPA 540/G-87/003A (OSWER Directive 9335.0-).* March, 1987. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, Washington, D.C.

EPA, 1989a. *RCRA Facility Investigation (RFI) Guidance, Interim Final, Volume I of IV, Development of an RFI Work Plan and General Considerations for RCRA Facility Investigations. OSWER Directive 9502.00-6D, EPA 530/SW-89-031, May 1989.* U.S. Environmental Protection Agency, Waste Management Division, Office of Solid Waste and Emergency Response, Washington, D.C.

EPA, 1989b. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, EPA/540/1-89/002,* U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C.

EPA, 1996. *Soil Screening Guidance: Technical Background Document. 9355.4-17A EPA/540/R-95/128, PB96-963502, May, 1996.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

EPA, 1996. *Federal Facilities Forum Issue: Field Sampling and Selecting On-Site Analytical Methods for Explosives in Soil. EPA/540/R97/501, November 1996.* U.S. Environmental Protection Agency, Office of Research and Development and Office of Solid Waste and Emergency Response, Washington, D.C.

EPA, 1997. *RCRA Sampling Procedures Handbook.* U.S. Environmental Protection Agency, Region 6, Austin, Texas.

III.B.1.d

HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

Position Paper

FIELD SCREENING/FIELD ANALYTICAL TECHNOLOGIES

The facility must develop standard operating procedures (SOPs) for each field screening or field analytical technique. The New Mexico Environment Department Hazardous and Radioactive Materials Bureau (HRMB) shall approve each field screening or field analytical technique SOP prior to implementation by the facility if the technique is to be utilized for substantiating information to HRMB.

Each SOP must include the following information at a minimum:

- Name of the field screening or field analytical technique
- Application and limitations of the field screening or field analytical technique
 - Situations in which the technologies will be utilized
- QA/QC procedures specific to that particular field screening or field analytical technique
 - Intended use or application of the data (site characterization, risk assessment, etc.)
- Sample collection methodologies specific to that particular field screening or field analytical technique, and
- Available correlation and/or validation of the new field screening or field analytical technique

HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

Position Paper

VARIANCES FROM APPROVED WORKPLANS

The New Mexico Environment Department Hazardous and Radioactive Materials Bureau (HRMB) shall approve all significant/substantial variances from approved **Corrective Action (CA) workplans**. Upon approval of any CA workplan, the facility must not significantly revise the scope of the workplan without obtaining approval from HRMB. Approved/revised sampling and analysis plans will be documented within the appropriate CA report.

- "Significant" is defined in the *Accelerated Corrective Action Process*. When significant deviations from the workplan are identified prior to the initiation of field work, the facility will formally request HRMB approval of the workplan modifications.
- The reporting requirements for variances from the approved workplan will be as outlined in the document entitled the *Accelerated Corrective Action Process* and the approved *RFI Report Framework* document, if appropriate. A specific section in the RFI report will identify deviations from the approved RFI Workplan or other sampling plan.
- The deviation section within the RFI report will be used to document insignificant variances from the approved RFI workplan.

Post-It® Fax Note		7671	Date	7.2.02	# of pages	3
To	K. Poloncarz		From	C. Thayer		
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HAZARDOUS AND RADIOACTIVE MATERIALS BUREAU

New Mexico Environment Department



Position Paper

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FILTERED VS. UNFILTERED GROUND WATER SAMPLES

Those inorganic ground water samples obtained for site characterization must be unfiltered.

Filtered inorganic ground water samples must also be obtained if one or more of the following circumstances exists for a particular potential release site or area of concern under investigation:

- barium, chromium or cobalt are suspected site-related contaminants (WQCC standards for these constituents are lower than MCLs),
- aquatic life criteria (which are based on filtered water samples) are needed to perform a risk assessment, or
- contaminant fate and transport (which require dissolved analytical results) are data quality objectives.

BACKGROUND

US EPA Region 6 Position: Ground water samples must be analyzed prior to filtration based on the following considerations:

- filtration removes colloidal particles which are mobile in ground water and capable of transporting contaminants,
- analyses have generally shown a large portion of metals load associated with the mobile colloidal fraction of ground water,
- low turbidity ground water samples can be obtained from most aquifers using properly constructed wells and appropriate sampling techniques, and
- most domestic wells do not have a filtration system capable of removing the colloidal fraction of ground water.

REFERENCES

Environmental Restoration Document of Understanding, November 1995. Annex G, Sampling and Analysis Guidelines.

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Accelerated Corrective Action Approach

Introduction

The Accelerated Corrective Action Approach (ACAA) is an enhancement of the sequential process generally followed under Resource Conservation and Recovery Act (RCRA) Corrective Action. This general term covers several processes: Voluntary Corrective Action (VCA), Expedited Cleanup (EC) and Voluntary Corrective Measure (VCM).

- VCAs or ECs are intended for fairly simple sites where the remedy is obvious (e.g. - sites with promulgated remediation criteria; non-systematic releases). VCAs or ECs are typically low cost, short term corrective action sites. VCAs and ECs may be implemented at risk by the facility without prior approval from NMED. VCAs and ECs are intended to be final remedies. Approval of the VCA or EC must be obtained from NMED prior to being proposed for no further action. Sites appropriate for VCAs are typically low priority sites.
- VCMs is an accelerated corrective action process that is applied to relatively small scale sites with obvious remedies. VCMs are similar to VCAs, however, because of complexity, cost, or location of these corrective actions, enhanced regulatory involvement is required (e.g. - sites with larger volumes of contaminated media; units with multiple contaminants of concern resulting in complex risk assessment issues from cumulative effects). VCMs are intended to be final remedies. Approval of the VCM Plan must be given prior to field activities and approval of the VCM Report must be obtained from NMED prior to being proposed for no further action. Field activities may be implemented at risk by the facility without prior approval from NMED.

The purpose of the ACAA is to provide for: 1) efficient evaluation of the corrective action site under the Hazardous and Solid Waste Amendments (HSWA), 2) determination of the extent of investigations required, 3) determination of whether corrective action is required, and 4) after necessary implementation, documentation necessary to petition for No Further Action (NFA).

An ACAA as identified above may be used for any Area of Concern (AOC) or Solid Waste Management Unit (SWMU). An accelerated approach is used to replace the standard RCRA Facility Investigation (RFI) Work Plan Report sequence with a more flexible decision-making approach, in that the permitted facility (the Facility) has more control over the timing of the required actions. The ACAA process allows a Facility to exit the schedule contained in the Facility's Hazardous and Solid Waste Amendments (HSWA) module for one or more specific site(s) and proceed on an accelerated time-frame for these sites. Thus, the ACAA process can be entered at several points in the process, e.g., before or after an RFI Work Plan.

The New Mexico Environment Department (NMED) approves sites for NFA through established permit modification processes. Public involvement is ensured through access to project documents, site tours, public meetings and the permit modification process (20 NMAC 4.1, Subpart IX, 40 CFR 270.42).

All proposed documents are submitted to NMED for review. However, NMED involvement may or may not be continuous throughout the process, depending upon NMED's work load, project complexity, and the priority given to the action. Early consultation with NMED is encouraged. In cases where NMED cannot respond

a timely manner, the permitted facility (Facility) may proceed **at risk**.

The complete ACAA process, assuming continuous NMED involvement, is discussed below and illustrated in Figure 1. The process without NMED involvement is also discussed.

Figure 1 Discussion

- Step 1. The Facility prepares an RFI Work Plan or Sampling and Analysis Plan (SAP) for any AOC/SWMU. A copy is sent to NMED. For AOC/SWMUs that are on the HSWA Module, NMED reviews the SAP; regulatory review may include an Request for Supplemental Information/Notice of Deficiency (RSI/NOD) cycle¹ (RSI/NOD loops are not shown in Figure 1). When NMED has completed the review, the document is either approved or denied. If a document is denied, the Facility may prepare another Work Plan or SAP or decide to withdraw from the ACAA process for the site. If the document is approved, the Facility proceeds to Step 2.
- Step 2. The Facility performs the field investigation as detailed in the approved Work Plan or SAP.
- Step 3. The Facility performs a data assessment and compares results to the objectives within the approved Work Plan or SAP for the site.
- Step 4. **QUESTION: Do the data support a proposal for an NFA decision?**

If the answer is YES, the Facility proceeds to Step 5.
If the answer is NO, the Facility proceeds to Step 7.
- Step 5. If the Facility believes the answer in Step 4 is YES, the Facility prepares and submits a petition for an NFA determination to NMED, accompanied by a Final Report supporting the NFA recommendation. This report must follow the format and content outlined in the Standard Operating Procedure for NFA submittals. Risk assessments included in the Final Report must follow the process detailed in the HRMB Position Paper on this process. NMED reviews the RFI Report. Regulatory review may contain an RSI/NOD cycle. If NMED concurs with the NFA proposal, the Facility proceeds to Step 6. Concurrence from NMED must be received before the Facility proceeds with a formal permit modification request.
- Step 6. The Facility prepares and submits a permit modification request for No Further Action for the site. (This step follows the RCRA permit modification process).
- Step 7. If the answer in Step 4 is NO, or if NMED denies the NFA petition in Step 5, the Facility must consider whether further investigation/data acquisition is required.

If the answer is YES, the Facility proceeds to Step 13.
If the answer is NO, the Facility proceeds to Step 8.
- Step 8. If the answer in Step 7 is NO: **QUESTION: Do the data support an corrective accelerated action?**

¹The NOD cycle is a regulatory process in which NMED sends one Request for Supplemental Information (RSI) if necessary, followed if necessary by one Notice of Deficiency (NOD) to the Facility

The criteria for corrective accelerated actions are:

- **Clean-up levels** are based on NMED-approved background concentrations, promulgated standards, or risk-based levels developed in accordance with an NMED-approved risk assessment protocol;
- the potential remedy is obvious and can be readily applied;
- acceptable knowledge (e.g. - adequate previous sampling data and/or other existing data, is available to adequately identify constituents of concern);
- adequate treatment, storage, and disposal (TSD) capacity is available for all expected waste types; and
- nature, rate and extent of contamination have been determined.

If the answer is YES, the Facility proceeds to Step 9.

If the answer is NO, the Facility proceeds to Step 14.

- Step 9. If the answer in Step 8 is YES, The Facility provides information (e.g. - fact sheet, presentation, site tour) that supports the ACAA process to NMED for concurrence. If NMED concurs, the Facility proceeds to Step 10. If NMED does not concur, the Facility proceeds to Step 7 to acquire additional data. Please discuss Step 9 with the NMED Facility Manager as this step may or may not be applicable.
- Step 10. If the answer to Step 9 is YES, the Facility develops an appropriate ACAA Plan and sends the Plan to NMED for review. When comments are reviewed an RSI/NOD cycle may result; however, if NMED does not provide comments within 45 days of receiving the plan, the Facility may choose to proceed at risk with corrective action activities.
- Step 11. The Facility conducts public involvement via a public notice, distribution of fact sheets and a public meeting. Public involvement will take place prior to performing the corrective action but may not always take place after the plan is generated; flexibility in moving the sequence for public involvement allows grouping of ACAA actions at several sites for the public information sessions.
- Step 12. The Facility conducts a corrective action and proceeds to Step 5.
- Step 13. If the answer to Step 7 is YES, the Facility revises the Work Plan or SAP. [NOTE: This step can be taken at any point in the process, especially during Steps 2 and 3.] NMED must approve or deny, with an RSI/NOD cycle if necessary, "significant" revisions and additions (see Examples 1 and 2 for "insignificant" and "significant" modifications). If the Work Plan or SAP revision is not approved, the Facility must prepare an approvable SAP or exit the ACAA process for the site. If the **SAP** revision is approved, the Facility returns to Step 2. (If NMED does not provide comment within 45 days, the Facility may choose to proceed at risk with the activities identified in the Work Plan or SAP.)
- Step 14. If the answer in Step 8 is NO: QUESTION: Do the data support a Corrective Measures Study (CMS)?

If the answer is YES, the Facility proceeds to Step 15.

If the answer is NO, the Facility returns to Step 13.

- Step 15. If the answer in Step 14 is YES, the Facility prepares an RFI Report, with an attached recommendation for the CMS Plan. NMED reviews, possibly involving an RSI/NOD cycle, and approves or denies the RFI Report and CMS recommendation. If the RFI Report and CMS recommendation are approved, the Facility proceeds to Step 16.
- Step 16. The Facility conducts the CMS Plan and proceeds to Step 17.
- Step 17. The Facility implements the CMI and proceeds to Step 5.

Examples

Example 1. Non-significant revision: Field work shows that a "non-significant" revision to the SAP is needed, e.g., a limited number of additional samples should be collected to define the nature and extent of contamination to support the ACAA or an NFA proposal. In this case, the additional sampling required does not represent a change in approach to the approved sampling plan. Internally, planning for such revisions can be added directly to the existing framework under which the sampling was initiated, e.g., supporting outlines/plans such as the DQOs, QAPP, H&S Plans, etc. Initiation of a DQO revision is not indicated.

This additional work shall be documented in the following manner:

1. Inform NMED of the revision.
2. Describe and explain the revision in the Final Report.
3. Provide the 10-day notification of field work to NMED in the event that remobilization is required.

Example 2. Significant Revision: An SAP previously approved by NMED is significantly revised, e.g., the changes require the development of a new framework to support the revision (e.g., new DQOs, QAPP, H&S Plan, etc.); the cost and schedule to support the changes may also require revision. Examples of significant revisions include (1) the addition of a substantial area to the AOC/SWMU (e.g., field work leads to the discovery of contamination in a channel not previously believed to be connected to the AOC/SWMU), and/or (2) a decrease in the number of samples and/or analytes is proposed. A copy of the new/revised plan is sent to NMED for approval.

This additional work shall be documented in the following manner:

1. Inform NMED of the revision.
2. Provide review copies of the new/revised SAP to NMED for approval.
3. Reference the new/revised SAP in the RFI or Final Report.
4. Provide the 10-day notification of field work to NMED.

Example 3. Significant Additions: Additions to an approved SAP require the development of a new framework to support the work (e.g., new DQOs, QAPP, and H&S Plans) in order to more fully define the nature and extent of contamination for completing the RFI. This revision is approved by NMED, possibly after an RSI/NOD cycle.

Document this additional work in the following manner:

1. Inform NMED of the revision.
2. Provide review copies of the new/revised SAP to NMED for approval.
3. Reference the new/revised SAP in the RFI or Final Report.
5. Provide the 10-day notification of field work to the NMED.

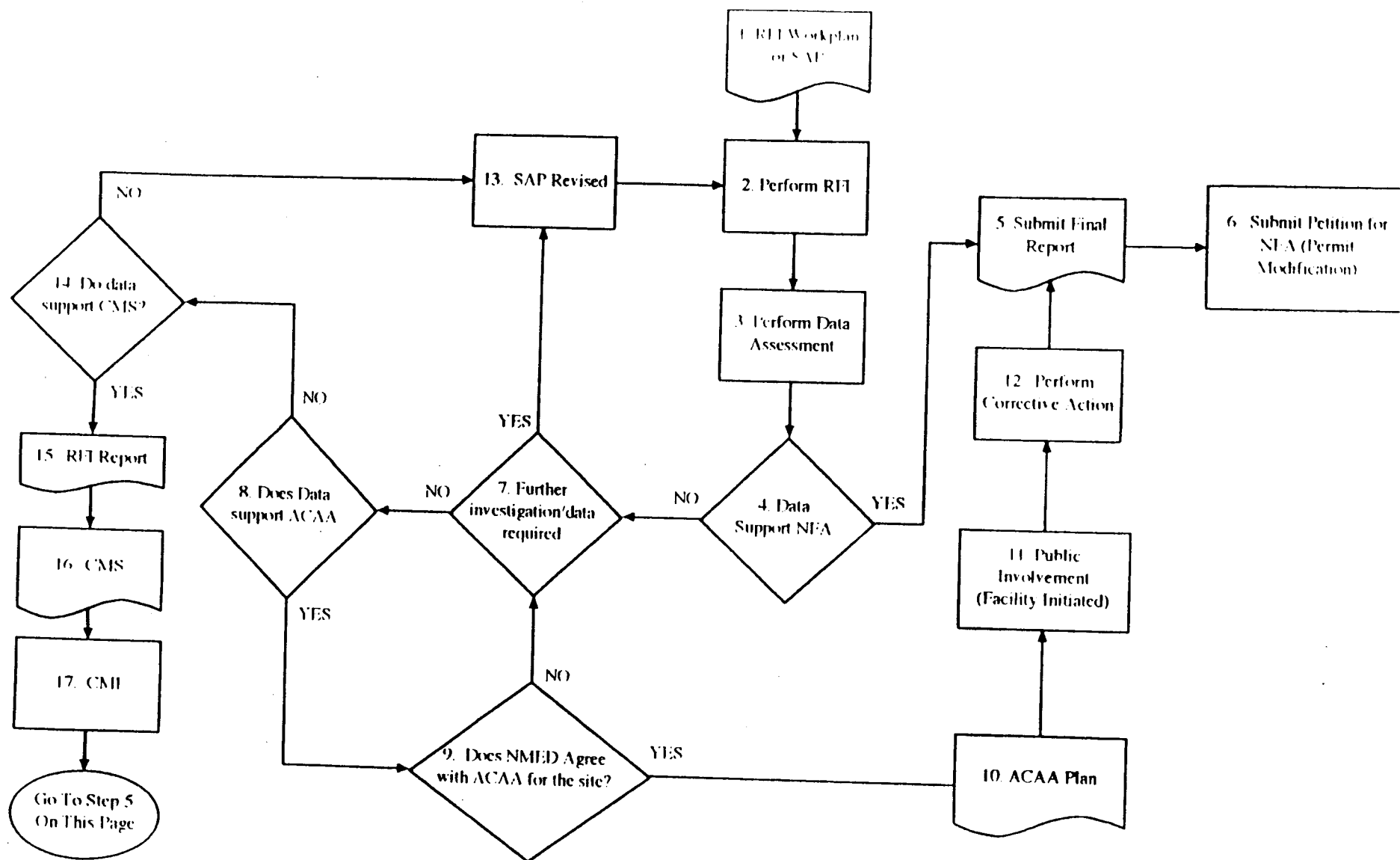


Figure 1. ACCELERATED CORRECTIVE ACTION APPROACH DIAGRAM

RISK-BASED DECISION TREE

RISK-BASED DECISION TREE

Description

All or portions of this Risk-based Decision Tree may not be applicable to all facilities. Please contact the RPMP Facility Manager if applicability is questionable.

Box 1: Perform RCRA Facility Investigation (RFI) or equivalent project.

Box 2: Perform Data Assessment. (This step corresponds to Step 3 in the Accelerated Corrective Action Process [ACAP]).

Criteria:

1. Compare results to data quality objectives (DQOs);
2. Determine the nature, rate, and extent (vertical and horizontal) of contamination;
3. Compare the maximum constituent concentrations to the Administrative Authority (AA)-approved:
 1. Background for inorganic constituent concentrations,
 2. Fallout for radionuclide concentrations, or
 3. MDLs, PQLs, or EQLs for organic constituent concentrations; and
4. Compare the maximum constituent concentrations to AA applicable standards or other approved values.

Box 3: Are there contaminants above Criterion 3 and 4?

If **NO**, move to Box 4

If **YES**, move to Box 5

Box 4: Use this determination in conjunction with other criteria to support a petition for NFA (HSWA Corrective Action Process).

Box 5: Assess Environmental Fate & Transport from the Source Term. (This step corresponds to Step 7 of the ACAP.)

Consider the following:

1. Determine if bioaccumulation in plant and/or animal tissue is of concern. The constituent is considered a bioaccumulator, if:
 - a. For inorganics (including radionuclides), the bioconcentration factor (BCF) exceeds 40, or
 - b. For organics, the logarithm of the octanol-water partition coefficient ($\log K_{ow}$) exceeds 4.
2. Other important environmental fate processes to be evaluated include, but

RISK-BASED DECISION TREE

Description

are not limited to the following:

- a. Soil/sediment sorption/desorption potential;
- b. Leaching to underlying ground water and discharging into surface water and/or other habitats;
- c. Vertical migration in unsaturated zone;
- d. Erosion of contaminated soils as a potential contaminant transport pathway;
- e. Other movement of contaminant within various components of the ecosystem (e.g., plant uptake, soil or aquatic invertebrate uptake); and
- f. Chemical and biological transformation and degradation processes in abiotic media.

Box 6: Are bioaccumulators present at the site?

The constituent is considered a bioaccumulator, if:

1. for inorganics (including radionuclides), the bioconcentration factor (BCF) exceeds 40, or
2. for organics, the logarithm of the octanol-water partition coefficient ($\log K_{ow}$) exceeds 4.

If **YES**, move to Box 7.

If **NO**, move to Box 10.

Box 7 : Determine if there is a fate and transport mechanism?

If bioaccumulators are present at the site, evaluate the following environmental fate and transport processes:

1. Soil/sediment sorption/desorption potential;
2. Leaching to underlying ground water and discharging into surface water and/or other habitats;
3. Vertical migration in unsaturated zone;
4. Erosion of contaminated soils as a potential contaminant transport pathway;
5. Other movement of contaminant within various components of the ecosystem (e.g., plant uptake, soil or aquatic invertebrate uptake); and
6. Chemical and biological transformation and degradation processes in abiotic media.

If, as a result of this evaluation the environmental transport is of concern, move to

RISK-BASED DECISION TREE

Description

Box 8.

If, as a result of this evaluation the environmental transport is not of concern, move to Box 11.

Box 8: No risk assessment needed: clean up the site to AA-approved site background levels or risk-based concentrations or non-detect.

Criteria:

1. Background constituent level is the naturally occurring concentration of inorganic chemicals (including naturally occurring radionuclides) present in the area upgradient or upwind from the site prior to industrial or hazardous waste operations in the area. Fallout concentrations of man-made radionuclides derived from sources unrelated to the facility activities are considered baseline levels. A facility shall have its background inorganic constituent concentrations (including naturally occurring radionuclides) and baseline fallout concentrations of man-made radionuclides approved by the AA prior to their use.
2. Risk-based concentrations are represented by ecological or toxicological benchmarks/criteria developed on a case by case basis, addressing the results of the fate and transport evaluation to protect human health and the environment.
3. The concept of "non detect" applies to man-made organic constituents that shall be cleaned up to levels of their PQLs, EQLs, or an analytical method detection limit, if cleanup to "non detect" is the elected remedy for the site.

Box 9: Submit final report. (This step corresponds to Step 5 of the ACAP.)

Box 10: Determine if there is a fate and transport mechanism.

If BIOACCUMULATORS are NOT present at the site, at a minimum, evaluate the following environmental fate and transport processes. The results of this evaluation shall be used to adequately focus a screening assessment (see Box 11).

1. Soil/sediment sorption/desorption potential;
2. Leaching to underlying ground water and discharging into surface water and/or other habitats;

RISK-BASED DECISION TREE

Description

3. Vertical migration in unsaturated zone;
4. Erosion of contaminated soils as a potential contaminant transport pathway;
5. Other movement of contaminant within various components of the ecosystem (e.g., plant uptake, soil or aquatic invertebrate uptake); and
6. Chemical and biological transformation and degradation processes in abiotic media.

Box 11: Perform Screening Assessment.

1. Perform Ecological Screening Assessment:
 - a. Develop site conceptual model and relevant food webs, and select receptors representing all feeding guilds and trophic levels;
 - b. In the absence of site-specific data, estimate potential exposure of these receptors to site contaminants using the following conservative/protective assumptions and exposure parameter values:
 - i. Use the highest measured contaminant concentrations at a site to represent the exposure point concentration to biota;
 - ii. Use the highest (conservative) literature transfer coefficients to address constituents bioconcentration/bioaccumulation and biomagnification potential and food chain transfer;
 - iii. Assume the receptor resides 100% of time in the contaminated area;
 - iv. Assume the constituents bioavailability to be 100%;
 - v. Assume the most sensitive life stage of the receptor for the exposure assessment;
 - vi. Use minimum body weight and maximum ingestion rate;
 - vii. Assume that 100% of diet consists of the most contaminated dietary component; however, if evaluating potential exposure of an omnivore receptor, it acceptable to assume that diet consists of e.g., about 50% of plant material and about 50% of invertebrates (with soil ingestion rate estimate at less than 1%);

In the subsequent phases of the ACAP (e.g., ecological baseline risk assessment) following collection of additional information/data, these conservative assumptions can be examined and adjusted (relaxed) to better reflect site and receptor-specific conditions.

- c. Select a current literature no-observed-adverse-effect level (NOAEL) to represent the ecotoxicity screening reference value (ESRV) (i.e., exposure dose). NOAELs shall be derived for each ecologically significant exposure pathway/route and they shall:

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- i. Utilize the most sensitive species (select most sensitive assessment endpoints);
- ii. Be derived from chronic mortality, reproduction, and growth studies; and
- iii. Utilize the lowest NOAEL.

In the absence of a literature NOAEL, the NOAEL can be estimated by applying an uncertainty/safety factor of 10 for the lowest available lowest-observed-adverse-effect level (LOAEL) or of 100 for the lowest available acute toxicity value (LD50 or LC50) or effective concentration (EC50). If toxicity values are not available for the habitat of interest (e.g., terrestrial or aquatic), toxicity values derived from other habitat studies should not be used, and the constituent should be retained for further evaluation in the ecological (baseline) risk assessment. In any case, the original study (i.e., primary literature from which the ESRV is derived) shall be examined and referenced.

- d. Calculate hazard quotients (HQs) and hazard indices (HIs) for exposure to multiple contaminants of receptors of concern.
- e. And/or estimate abiotic media (e.g., soil, sediment, or water) ecological screening levels (ESLs) from calculated HQs (for receptor's exposure to a single contaminant) or HIs (for receptor's exposure to multiple contaminants) assuming $HQ=1$ or $HI=1$, respectively;
- f. Perform an uncertainty analysis; at a minimum, analysis should focus on the following key sources of uncertainty associated with a screening assessment:
 - i. Definition of a site physical setting (e.g., exposure assumptions such as the likelihood of exposure pathways and land uses actually occurring, and receptors selected for evaluation);
 - ii. environmental monitoring data (e.g., media-contaminant distribution, using laboratory or otherwise qualified data, lack of quantitation, high detection limits);
 - iii. Environmental fate and transport models;
 - iv. Constituent toxicity values (or their lack) and interactions;
 - v. Intake parameters and their assumed values; and
 - vi. Multiple pathway exposure assumptions.
- g. Combine the results of Steps (d) or (e) and (f) above.

In the subsequent phases of the Corrective Action process (e.g., ecological

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baseline risk assessment) and following collection of additional information/data, these conservative assumptions can be examined and adjusted (relaxed) to better reflect site and receptor-specific conditions.

2. Perform Human Health Screening Assessment:

- a. Follow the process presented in the RCRA Permits Management Program (RPMP) position paper entitled "*Human Health Risk-Based Screening Action Levels and Screening-Level Assessment*".

Note, that although food-chain transfer of contaminants has been excluded from consideration in calculation of human health screening action levels (HHSALs) it may be important under certain exposure scenarios (e.g., agricultural) or for certain exposure pathways (e.g., human consumption of home-grown produce under residential exposure scenario). Therefore, when these exposure scenarios or pathways are of potential concern at a site, a contaminant food-chain transfer shall also be evaluated and the results shall be incorporated into the revised HHSAL.

- b. Perform an uncertainty analysis; at a minimum, analysis should focus on the following key sources of uncertainty associated with a screening assessment:
 - i. Definition of a site physical setting (e.g., exposure assumptions such as the likelihood of exposure pathways and land uses actually occurring, and receptors selected for evaluation);
 - ii. Environmental monitoring data (e.g., media-contaminant distribution, using laboratory or otherwise qualified data, lack of quantitation, high detection limits);
 - iii. Environmental fate and transport models;
 - iv. Constituent toxicity values (or their lack) and interactions;
 - v. Intake parameters and their assumed values; and
 - vi. Multiple pathway exposure assumptions.
- c. Combine the results of Steps (1) or (2) and (3) above.

In the subsequent phases of the Corrective Action process (e.g., human health baseline risk assessment) and following collection of additional information/data, these conservative assumptions can be examined and adjusted (relaxed) to better reflect site-specific conditions.

Box 12: Is risk acceptable?

RISK-BASED DECISION TREE

Description

Use both ecological and human health screening assessment determinations.

1. Ecological

Ecological risk is considered acceptable, if:

- a. $HQ < 1$ (for receptor's exposure to a single contaminant) or $HI < 1$ (for receptor's exposure to multiple contaminants); and/or
- b. The maximum constituent media concentrations are below their respective media ecological screening level (ESL)s.

2. Human Health

Human health risk is considered acceptable, if:

- a. For noncarcinogens, $HQ < 1$ (for exposure to a single contaminant) or $HI < 1$ (for exposure to multiple contaminants), and for carcinogens, excess lifetime risk of developing cancer by an individual is less than 10^{-6} for Class A and B carcinogens and less than 10^{-5} for Class C carcinogens; and/or
- b. The maximum constituent media concentrations are below their respective human health screening action levels (HHSALs).

If answer to both 1 and 2 is **YES**, move to Box 13.

If answer to either 1 and 2 is **NO**¹, move to Box 14.

Box 13: Use this determination in conjunction with other criteria to support a petition for NFA (HSWA Corrective Action Process).

Box 14: Risk Management Decision

A risk management decision (RMD) must be made at this point. It should be determined whether it would be less costly to clean up the site to generic preliminary cleanup levels (PCLs) based on risk-based concentrations (HHSALs and/or ESLs, whichever is more stringent) or to collect more site-specific data and conduct baseline risk assessment (i.e., ecological and/or human health baseline risk assessments [EBRA and/or HHBRA]). As a result

¹

This determination does not automatically require corrective action (e.g., cleanup) but may require more analysis (e.g., a baseline risk assessment should be conducted).

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of these EBRA and HHBRA, site-specific risk-based cleanup levels (CLs) could be established. Consideration should be given to fact that even after considerable expense conducting an EBRA or HHBRA, the site may still need to be cleaned up to PCLs.

Box 15: Conduct Baseline Risk Assessment.

Both ecological and human health baseline risk assessments should be performed, if warranted. Additional information and site-specific data shall be collected to address the critical data needs (gaps) identified during the ecological and human health screening assessments that will support baseline risk assessments. The following steps shall be considered for site-specific baseline risk assessments:

1. Collect additional information and/or site-specific data;
2. Select Contaminants of Potential Concern (COPCs);
3. Evaluate receptors exposure;
4. Evaluate contaminants toxicity, including potential interactions;
5. Estimate and characterize risk (including quantification of risk and uncertainty analysis);
6. Provide risk interpretation and recommendations; and
7. Calculate revised ESLs (RESLs) and/or HHSALs (RHHSALs) and obtain AA approval.

Box 16: Are concentrations of contaminants above AA approved risk-based concentrations?

Compare site-specific RESLs and RHHSALs to the site media constituent concentrations.

If site-specific RESLs and/or RHHSALs are below the site media constituent concentrations, move to Box 17.

If site-specific RESLs and/or RHHSALs exceed the site media constituent concentrations, move to Box 18.

Box 17: Use this determination in conjunction with other criteria to support a petition for NFA (HSWA Corrective Action Process).

Box 18: Risk Management Decision

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A risk management decision must be made at this point. A decision must be made to defer further action at this time (Box 19) or to cleanup the site to AA approved site-specific risk-based cleanup levels (CLs)(based on RESLs and/or RHHSALs, whichever is more stringent)(Box 20).

Box 19: Documentation prepared to justify deferral. To be incorporated into the schedule of compliance.

Prepare documentation to justify deferral. If approved by AA, deferral will be incorporated into the schedule of compliance.

Box 20: Cleanup site to AA-approved risk-based concentrations or background levels.

Cleanup the site to AA approved site-specific risk-based cleanup levels (CLs) or background levels or "non detects" (as defined in Box 8, Steps 1 and 3).

Box 21: Submit Final Report. (This step corresponds to Step 5 of the ACAP.)

Requirements:

1. Verification sampling and analysis is conducted to determine COPCs concentrations have been reduced to RCLs or background levels or "non-detects" (as defined in Box 8, Steps 1 and 3).
2. This determination should be used in conjunction with other criteria to support petition for NFA (HSWA CA Process).

Box 22: Cleanup site to AA-approved risk-based concentrations or background levels.

1. Calculate generic preliminary risk-based cleanup levels (PCLs) based on ESLs (RESLs) and/or HHSALs (RHHSALs) and obtain AA approval.
2. Cleanup the site to AA approved PCLs or background levels or "non-detects" (as defined in Box 8, Steps 1 and 3).

Box 23: Submit Final Report. (This step corresponds to Step 5 of the ACAP.)

Requirements:

1. Verification sampling and analysis is conducted to determine COPCs

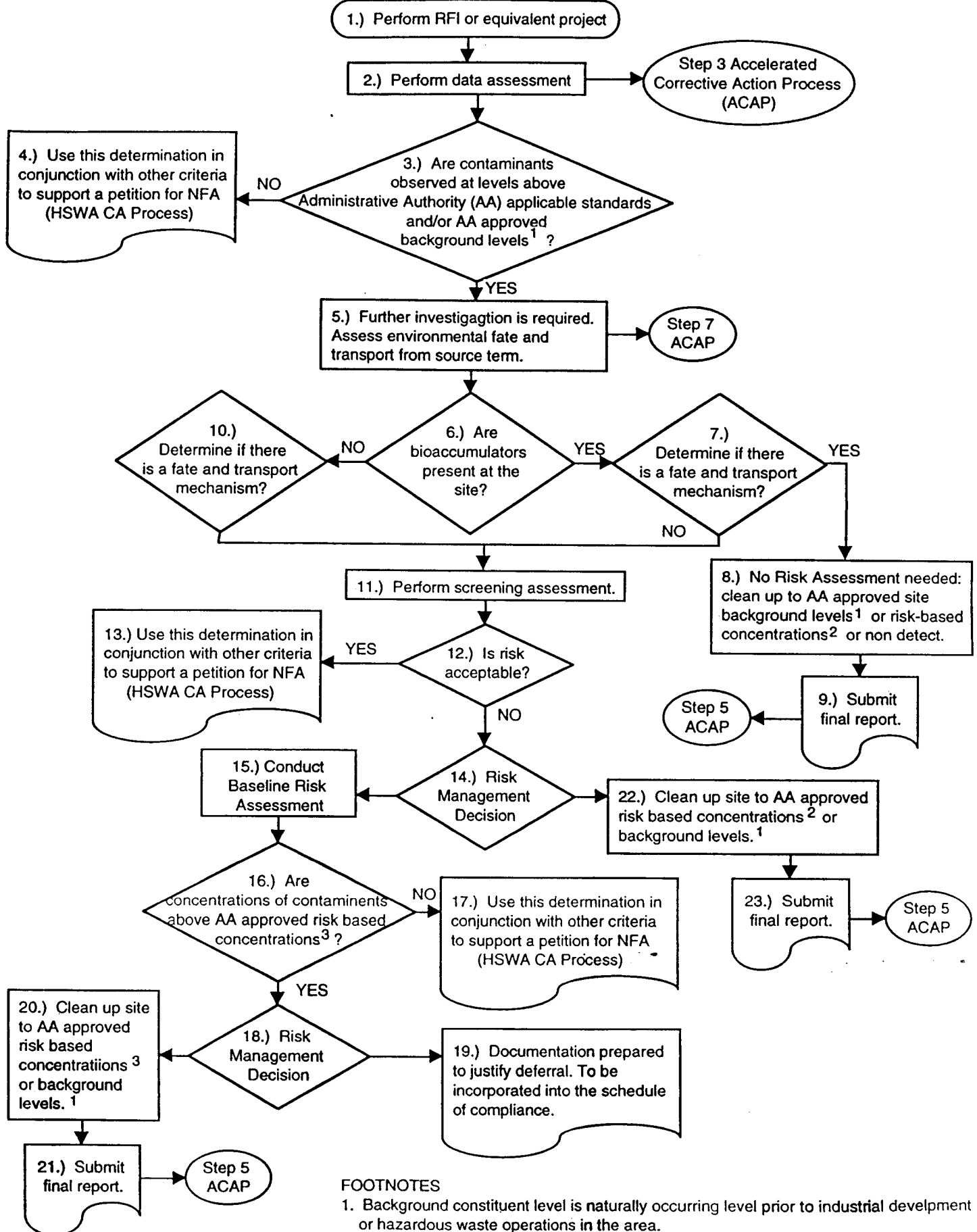
RISK-BASED DECISION TREE

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concentrations have been reduced to PCLs or background levels or "non detects" (as defined in Box 8, Steps 1 and 3).

2. This determination should be used in conjunction with other criteria to support petition for NFA (HSCA CA Process).

RISK BASED DECISION TREE



FOOTNOTES

1. Background constituent level is naturally occurring level prior to industrial development or hazardous waste operations in the area.
2. Using Ecological or Toxicological Benchmarks developed on a case by case basis.
3. Developed on a site specific basis by conducting a baseline risk assessment.

where such operating methods, techniques, and practices are conducted, taking into account the nature of the material to be disposed;

"(3) method for closing or upgrading open dumps for purposes of eliminating potential health hazards;

"(4) population density, distribution, and projected growth;

"(5) geographic, geologic, climatic, and hydrologic characteristics;

"(6) the type and location of transportation;

"(7) the profile of industries;

"(8) the constituents and generation rates of waste;

"(9) the political, economic, organizational, financial, and management problems affecting comprehensive solid waste management;

"(10) types of resource recovery facilities and resource conservation systems which are appropriate; and

"(11) available new and additional markets for recovered material and energy and energy resources recovered from solid waste as well as methods for conserving such materials and energy.

"REQUIREMENTS FOR APPROVAL OF PLANS

"Sec. 4003. (a) MINIMUM REQUIREMENTS.—In order to be approved under section 4007, each State plan must comply with the following minimum requirements—

"(1) The plan shall identify (in accordance with section 4006(b) (A) the responsibilities of State, local, and regional authorities in the implementation of the State plan, (B) the distribution of Federal funds to the authorities responsible for development and implementation of the State plan, and (C) the means for coordinating regional planning and implementation under the State plan.

"(2) The plan shall, in accordance with section 4004 (b) and 4005(a), prohibit the establishment of new open dumps within the State, and contain requirements that all solid waste (including solid waste originating in other States, but not including hazardous waste) shall be (A) utilized for resource recovery or (B) disposed of in sanitary landfills (within the meaning of section 4004 (a)) or otherwise disposed of in an environmentally sound manner.

"(3) The plan shall provide for the closing or upgrading of all existing open dumps with the State pursuant to the requirements of section 4005.

"(4) The plan shall provide for the establishment of such State regulatory powers as may be necessary to implement the plan.

"(5) The plan shall provide that no State or local government within the State shall be prohibited under State or local law from negotiating and entering into long-term contracts for the supply of solid waste to resource recovery facilities, from entering into long-term contracts for the operation of such facilities, or from securing long-term markets for material and energy recovered from such facilities or for conserving materials or energy by reducing the volume of waste.

"(6) The plan shall provide for such resource conservation or recovery and for the disposal of solid waste in sanitary landfills or any combination of practices so as may be necessary to use or dispose of such waste in a manner that is environmentally sound.

"(b) DISCRETIONARY PLAN PROVISIONS RELATING TO RECYCLED OIL.—Any State plan submitted under this subtitle may include, at the option of the State, provision to carry out each of the following:

"(1) Encouragement, to the maximum extent feasible and consistent with the protection of the public health and the environment, of the use of recycled oil in all appropriate areas of State and local government.

"(2) Encouragement of persons contracting with the State to use recycled oil to the maximum extent feasible, consistent with protection of the public health and the environment.

"(3) Informing the public of the uses of recycled oil.

"(4) Establishment and implementation of a program (including any necessary licensing of persons and including the use, where appropriate, of manifests) to assure that used oil is collected, transported, treated, stored, reused, and disposed of, in a manner which does not present a hazard to the public health or the environment.

Any plan submitted under this title before the date of the enactment of the Used Oil Recycling Act of 1980 may be amended, at the option of the State, at any time after such date to include any provision referred to in this subsection.

"(c) ENERGY AND MATERIALS CONSERVATION AND RECOVERY FEASIBILITY PLANNING AND ASSISTANCE.—(1) A State which has a plan approved under this subtitle or which has submitted a plan for such approval shall be eligible for assistance under section 4008(a)(3) if the Administrator determines that under such plan the State will—

"(A) analyze and determine the economic and technical feasibility of facilities and programs to conserve resources which contribute to the waste stream or to recover energy and materials from municipal waste;

"(B) analyze the legal, institutional, and economic impediments to the development of systems and facilities for conservation of energy or materials which contribute to the waste stream or for the recovery of energy and materials from municipal waste and make recommendations to appropriate governmental authorities for overcoming such impediments;

"(C) assist municipalities within the State in developing plans, programs, and projects to conserve resources or recover energy and materials from municipal waste; and

"(D) coordinate the resource conservation and recovery planning under subparagraph (C).

"(2) The analysis referred to in paragraph (1)(A) shall include—

"(A) the evaluation of, and establishment of priorities among, market opportunities for industrial and commercial users of all types (including public utilities and industrial parks) to utilize energy and materials recovered from municipal waste;

"(B) comparisons of the relative costs of energy recovered from municipal waste in relation to the costs of energy derived from fossil fuels and other sources;

"(C) studies of the transportation and storage problems and other problems associated with the development of energy and materials recovery technology, including curbside source separation;

"(D) the evaluation and establishment of priorities among ways of conserving energy or materials which contribute to the waste stream;

"(E) comparison of the relative total costs between conserving resources and disposing of or recovering such waste; and

"(F) studies of impediments to resource conservation or recovery, including business practices, transportation requirements, or storage difficulties.

Such studies and analyses shall also include studies of other sources of solid waste from which energy and materials may be recovered or minimized.

"(d) SIZE OF WASTE-TO-ENERGY FACILITIES.—Notwithstanding any of the above requirements, it is the intention of this Act and the planning process developed pursuant to this Act that in determining the size of the waste-to-energy facility,

adequate provision shall be given to the present and reasonably anticipated future needs of the recycling and resource recovery interest within the area encompassed by the planning process.

"CRITERIA FOR SANITARY LANDFILLS; SANITARY LANDFILLS REQUIRED FOR ALL DISPOSAL

"Sec. 4004. (a) CRITERIA FOR SANITARY LANDFILLS.—Not later than one year after the date of enactment of this section, after consultation with the States, and after notice and public hearings, the Administrator shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps within the meaning of this Act. At a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility. Such regulations may provide for the classification of the types of sanitary landfills.

"(b) DISPOSAL REQUIRED TO BE IN SANITARY LANDFILLS, ETC.—For purposes of complying with section 4003(2) each State plan shall prohibit the establishment of open dumps and contain a requirement that disposal of all solid waste within the State shall be in compliance with such section 4003(2).

"(c) EFFECTIVE DATE.—The prohibition contained in subsection (b) shall take effect on the date six months after the date of promulgation of regulations under subsection (a).

"UPGRADING OF OPEN DUMPS

"Sec. 4005. (a) CLOSING OR UPGRADING OF EXISTING OPEN DUMPS.—Upon promulgation of criteria under section 1008(a)(3), any solid waste management practice or disposal of solid waste or hazardous waste which constitutes the open dumping of solid waste or hazardous waste is prohibited, except in the case of any practice or disposal of solid waste under a timetable or schedule for compliance established under this section. The prohibition contained in the preceding sentence shall be enforceable under section 7002 against persons engaged in the act of open dumping. For purposes of complying with section 4003(2) and 4003(3), each State plan shall contain a requirement that all existing disposal facilities or sites for solid waste in such State which are open dumps listed in the inventory under subsection (b) shall comply with such measures as may be promulgated by the Administrator to eliminate health hazards and minimize potential health hazards. Each such plan shall establish, for any entity which demonstrates that it has considered other public or private alternatives for solid waste management to comply with the prohibition on open dumping and is unable to utilize such alternatives to so comply, a timetable or schedule for compliance for such practice or disposal of solid waste which specifies a schedule of remedial measures, including an enforceable sequence of actions or operations, leading to compliance with the prohibition on open dumping of solid waste within a reasonable time (not to exceed 5 years from the date of publication of the criteria under section 1008(a)(3)).

"(b) INVENTORY.—To assist the States in complying with section 4003(3), not later than one year after promulgation of regulations under section 4004, the Administrator, with the cooperation of the Bureau of the Census shall publish an inventory of all disposal facilities or sites in the United States which are open dumps within the meaning of this Act.

"(c) CONTROL OF HAZARDOUS DISPOSAL.—

"(1)(A) Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, each State shall adopt and

implement a permit program or other system of prior approval and conditions to assure that each solid waste management facility within such State which may receive hazardous household waste or hazardous waste due to the provision of section 3001(d) for small quantity generators (otherwise not subject to the requirement for a permit under section 3005) will comply with the applicable criteria promulgated under section 4004(a) and section 1008(a)(3).

"(B) Not later than 18 months after the promulgation of revised criteria under subsection 4004(a) (as required by section 4010(c)), each State shall adopt and implement a permit program or other system or prior approval and conditions, to assure that each solid waste management facility within such State which shall receive hazardous household waste or hazardous waste due to the provision of section 3001(d) for small quantity generators (otherwise not subject to the requirement for a permit under section 3005) will comply with the criteria revised under section 4004(a).

"(C) The Administrator shall determine whether each State has developed an adequate program under this paragraph. The Administrator may make such a determination in conjunction with approval, disapproval or partial approval of a State plan under section 4007.

"(2)(A) In any State that the Administrator determines has not adopted an adequate program for such facilities under paragraph (1) (B) by the date provided in such paragraph, the Administrator may use the authorities available under sections 3007 and 3008 of this title to enforce the prohibition contained in subsection (a) of this section with respect to such facilities.

"(B) For purposes of this paragraph, the term 'requirement of this subtitle' in section 3008 shall be deemed to include criteria promulgated by the Administrator under sections 1008(a)(3) and 4004(a) of this title and the term 'hazardous wastes' in section 3007 shall be deemed to include solid waste at facilities that may handle hazardous household wastes or hazardous wastes from small quantity generators.

"PROCEDURE FOR DEVELOPMENT AND IMPLEMENTATION OF STATE PLAN

"Sec. 4006. (a) IDENTIFICATION OF REGIONS.—Within one hundred and eighty days after publication of guidelines under section 4002(a) relating to identification of regions, the Governor of each State, after consultation with local elected officials, shall promulgate regulations based on such guidelines identifying the boundaries of each area within the State which, as a result of urban concentrations, geographic conditions, markets, and other factors, is appropriate for carrying out regional solid waste management. Such regulations may be modified from time to time (identifying additional or different regions) pursuant to such guidelines.

"(b) IDENTIFICATION OF STATE AND LOCAL AGENCIES AND RESPONSIBILITIES.—

"(1) Within one hundred and eighty days after the Governor promulgates regulations under subsection (a), for purposes of facilitating the development and implementation of a State plan which will meet the minimum requirements of section 4003, the State, together with appropriate elected officials of general purpose units of local government, shall jointly (A) identify an agency to develop the State plan and identify one or more agencies to implement such plan, and (B) identify which solid waste management activities will, under such State plan, be planned for and carried out by the State and which such management activities

will, under such State plan, be planned for and carried out by a regional or local authority or a combination of regional or local and State authorities. If a multi-functional regional agency authorized by State law to conduct solid waste planning and management (the members of which are appointed by the Governor) is in existence on the date of enactment of this Act, the Governor shall identify such authority for purposes of carrying out within such region clause (A) of this paragraph. Where feasible, designation of the agency for the affected area designated under section 208 of the Federal Water Pollution Control Act (86 Stat. 839) shall be considered. A State agency identified under this paragraph shall be established or designated by the Governor of such State. Local or regional agencies identified under this paragraph shall be composed of individuals at least a majority of whom are elected local officials.

"(2) If planning and implementation agencies are not identified and designated or established as required under paragraph (1) for any affected area, the governor shall, before the date two hundred and seventy days after promulgation of regulations under subsection (a), establish or designate a State agency to develop and implement the State plan for such area.

"(c) INTERSTATE REGIONS.—

"(1) In the case of any region which, pursuant to the guidelines published by the Administrator under section 4002(a) (relating to identification of regions), would be located in two or more States, the Governors of the respective States, after consultation with local elected officials, shall consult, cooperate, and enter into agreements identifying the boundaries of such region pursuant to subsection (a).

"(2) Within one hundred and eighty days after an interstate region is identified by agreement under paragraph (1), appropriate elected officials of general purpose units of local government within such region shall jointly establish or designate an agency to develop a plan for such region. If no such agency is established or designated within such period by such officials, the Governors of the respective States may, by agreement, establish or designate for such purpose a single representative organization including elected officials of general purpose units of local government within such region.

"(3) Implementation of interstate regional solid waste management plans shall be conducted by units of local government, for any portion of a region within their jurisdiction, or by multijurisdictional agencies or authorities designated in accordance with State law, including those designated by agreement by such units of local government for such purpose. If no such unit, agency, or authority is so designated, the respective Governors shall designate or establish a single interstate agency to implement such plan.

"(4) For purposes of this subtitle, so much of an interstate regional plan as is carried out within a particular State shall be deemed part of the State plan for such State.

"APPROVAL OF STATE PLAN; FEDERAL ASSISTANCE

"Sec. 4007. (a) PLAN APPROVAL.—The Administrator shall, within six months after a State plan has been submitted for approval, approve or disapprove the plan. The Administrator shall approve a plan if he determines that—

"(1) it meets the requirements of paragraphs (1), (2), (3), and (5) of section 4003; and

"(2) it contains provision for revision of such plan, after notice and public hearing, whenever the Administrator, by regulation determines—

“(A) that revised regulations respecting minimum requirements have been promulgated under paragraphs (1), (2), (3), and (5) of section 4003 with which the State plan is not in compliance;

“(B) that information has become available which demonstrates the inadequacy of the plan to effectuate the purposes of this subtitle; or

“(C) that such revision is otherwise necessary.

The Administrator shall review approved plans from time to time and if he determines that revision or corrections are necessary to bring such plan into compliance with the minimum requirements promulgated under section 4003 (including new or revised requirements), he shall, after notice and opportunity for public hearing, withdraw his approval of such plan. Such withdrawal of approval shall cease to be effective upon the Administrator's determination that such complies with such minimum requirements.

“(b) ELIGIBILITY OF STATES FOR FEDERAL FINANCIAL ASSISTANCE.—

“(1) The Administrator shall approve a State application for financial assistance under this subtitle, and make grants to such State, if such State and local and regional authorities within such State have complied with the requirements of section 4006 within the period required under such section and if such State has a State plan which has been approved by the Administrator under this subtitle.

“(2) The Administrator shall approve a State application for financial assistance under this subtitle, and make grants to such State, for fiscal years 1978 and 1979 if the Administrator determines that the State plan continues to be eligible for approval under subsection (a) and is being implemented by the State.

“(3) Upon withdrawal of approval of a State plan under subsection (a), the Administrator shall withhold Federal financial and technical assistance under this subtitle (other than such technical assistance as may be necessary to assist in obtaining the reinstatement of approval) until such time as such approval is reinstated.

“(c) EXISTING ACTIVITIES.—Nothing in this subtitle shall be construed to prevent or affect any activities respecting solid waste planning or management which are carried out by the State, regional, or local authorities unless such activities are inconsistent with a State plan approved by the Administrator under this subtitle.

“FEDERAL ASSISTANCE

“Sec. 4008. (a) AUTHORIZATION OF FEDERAL FINANCIAL ASSISTANCE.—

“(1) There are authorized to be appropriated \$30,000,000 for the fiscal year 1978, \$40,000,000 for fiscal year 1979, \$20,000,000 for fiscal year 1980, \$15,000,000 for fiscal year 1981, \$20,000,000 for fiscal year 1982, and \$10,000,000 for each of the fiscal years 1985 through 1988 for purposes of financial assistance to States and local, regional, and interstate authorities for the development and implementation of plans approved by the Administrator under this subtitle (other than the provisions of such plans referred to in section 4003(b), relating to feasibility planning for municipal waste energy and materials conservation and recovery).

“(2)(A) The Administrator is authorized to provide financial assistance to States, counties, municipalities, and intermunicipal agencies and State and local public solid waste management authorities for implementation of programs to provide solid waste management, resource recovery, and resource conservation services and hazardous waste management. Such assistance shall include assistance for facility planning and feasibility studies; expert consultation; surveys and analyses of market

needs; marketing of recovered resources; technology assessments; legal expenses; construction feasibility studies; source separation projects; and fiscal or economic investigations or studies; but such assistance shall not include any other element of construction, or any acquisition of land or interest in land, or any subsidy for the price of recovered resources. Agencies assisted under this subsection shall consider existing solid waste management and hazardous waste management services and facilities as well as facilities proposed for construction.

"(B) An applicant for financial assistance under this paragraph must agree to comply with respect to the project or program assisted with the applicable requirements of section 4005 and Subtitle C of this Act and apply applicable solid waste management practices, methods, and levels of control consistent with any guidelines published pursuant to section 1008 of this Act. Assistance under this paragraph shall be available only for programs certified by the State to be consistent with any applicable State or areawide solid waste management plan or program. Applicants for technical and financial assistance under this section shall not preclude or foreclose consideration of programs for the recovery of recyclable materials through source separation or other resource recovery techniques.

"(C) There are authorized to be appropriated \$15,000,000 for each of the fiscal years 1978 and 1979 for the purposes of this section. There are authorized to be appropriated \$10,000,000 for fiscal year 1980, \$10,000,000 for fiscal year 1981, \$10,000,000 for fiscal year 1982, and \$10,000,000 for each of the fiscal years 1985 through 1988 for purposes of this paragraph.

"(D) There are authorized—

"(i) to be made available \$15,000,000 out of funds appropriated for fiscal year 1985, and

"(ii) to be appropriated for each of the fiscal years 1986 through 1988, \$20,000,000

for grants to States (and where appropriate to regional, local, and interstate agencies) to implement programs requiring compliance by solid waste management facilities with the criteria promulgated under section 4004(a) and section 1008(a)(3) and with the provisions of section 4005. To the extent practicable, such programs shall require such compliance not later than 36 months after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

"(3)(A) There is authorized to be appropriated for the fiscal year beginning October 1, 1981, and for each fiscal year thereafter before October 1, 1986, \$4,000,000 for purposes of making grants to States to carry out section 4003(b). No amount may be appropriated for such purposes for the fiscal year beginning on October 1, 1986, or for any fiscal year thereafter.

"(B) Assistance provided by the Administrator under this paragraph shall be used only for the purposes specified in section 4003(b). Such assistance may not be used for purposes of land acquisition, final facility design, equipment purchase, construction, startup or operation activities.

"(C) Where appropriate, any State receiving assistance under this paragraph may make all or any part of such assistance available to municipalities within the State to carry out the activities specified in section 4003(b)(1)(A) and (B).

"(b) STATE ALLOTMENT.—The sums appropriated in any fiscal year under subsection (a)(1) shall be allotted by the Administrator among all States, in the ratio that

the population in each State bears to the population in all of the States, except that no State shall receive less than one-half of 1 per centum of the sums so allotted in any fiscal year. No State shall receive any grant under this section during any fiscal year when its expenditures of non-Federal funds for other than nonrecurrent expenditures for solid waste management control programs will be less than its expenditures were for such programs during fiscal year 1975, except that such funds may be reduced by an amount equal to their proportionate share of any general reduction of State spending ordered by the Governor or legislature of such State. No State shall receive any grant for solid waste management programs unless the Administrator is satisfied that such grant will be so used as to supplement and, to the extent practicable, increase the level of State, local, regional, or other non-Federal funds that would in the absence of such grant be made available for the maintenance of such programs.

"(c) DISTRIBUTION OF FEDERAL FINANCIAL ASSISTANCE WITHIN THE STATE.—The Federal assistance allotted to the States under subsection (b) shall be allocated by the State receiving such funds to State, local, regional, and interstate authorities carrying out planning and implementation of the State plan. Such allocation shall be based upon the responsibilities of the respective parties as determined pursuant to section 4006(b).

"(d) TECHNICAL ASSISTANCE.—

"(1) The Administrator may provide technical assistance to State and local governments for purposes of developing and implementing State plans. Technical assistance respecting resource recovery and conservation may be provided through resource recovery and conservation panels, established in the Environmental Protection Agency under subtitle B, to assist the State and local governments with respect to particular resource recovery and conservation projects under consideration and to evaluate their effect on the State plan.

"(2) In carrying out this subsection, the Administrator may, upon request, provide technical assistance to States to assist in the removal or modification of legal, institutional, economic, and other impediments to the recycling of used oil. Such impediments may include laws, regulations, and policies, including State procurement policies, which are not favorable to the recycling of used oil.

"(3) In carrying out this subsection, the Administrator is authorized to provide technical assistance to States, municipalities, regional authorities, and inter-municipal agencies upon request, to assist in the removal or modification of legal, institutional, and economic impediments which have the effect of impeding the development of systems and facilities to recover energy and materials from municipal waste or to conserve energy or materials which contribute to the waste stream. Such impediments may include—

"(A) laws, regulations, and policies, including State and local procurement policies, which are not favorable to resource conservation and recovery policies, systems, and facilities.

"(B) impediments to the financing of facilities to conserve or recover energy and materials from municipal waste through the exercise of State and local authority to issue revenue bonds and the use of State and local credit assistance; and

"(C) impediments to institutional arrangements necessary to undertake projects for the conservation or recovery of energy and materials from municipal waste, including the creation of special districts, authorities, or corporations where necessary having the power to secure the supply of waste of a project, to conserve resources, to implement the project, and to undertake related activities.

"(e) SPECIAL COMMUNITIES.—

"(1) The Administrator, in cooperation with State and local officials, shall identify local governments within the United States

(A) having a solid waste disposal facility

(i) which is owned by the unit of local government,

(ii) for which an order has been issued by the State to cease receiving solid waste for treatment, storage, or disposal, and

(iii) which is subject to a State-approved end-use recreation plan;

"(B) which are located over an aquifer which is the source of drinking water for any person or public water system and which has serious environmental problems resulting from disposal of such solid waste, including possible methane migration;

"(2) There is authorized to be appropriated to the Administrator \$2,500,000 for the fiscal year 1980, \$1,500,000 for each of the fiscal years 1981 and 1982, and \$500,000 for each of the fiscal years 1985 through 1988 to make grants to be used for the containment and stabilization of solid waste located at the disposal sites referred to in paragraph (1). Not more than one community in any State shall be eligible for grants under this paragraph and not more than one project in any State shall be eligible for such grants. No unit of local government shall be eligible for grants under this paragraph with respect to any site which exceeds 65 acres in size.

"(f) ASSISTANCE TO STATES FOR DISCRETIONARY PROGRAM FOR RECYCLED OIL.—

"(1) The Administrator may make grants to States, which have a State plan approved under section 4007, or which have submitted a State plan for approval under such section, if such plan includes the discretionary provisions described in section 4003(b). Grants under this subsection shall be for purposes of assisting the State in carrying out such discretionary provisions. No grant under this subsection may be used for construction or for the acquisition of land or equipment.

"(2) Grants under this subsection shall be allotted among the States in the same manner as provided in the first sentence of subsection (b).

"(3) No grant may be made under this subsection unless an application therefor is submitted to, and approved by, the Administrator. The application shall be in such form, be submitted in such manner, and contain such information as the Administrator may require.

"(4) For purposes of making grants under this subsection, there are authorized to be appropriated \$5,000,000 for fiscal year 1982, \$5,000,000 for fiscal year 1983, and \$5,000,000 for each of the fiscal years 1985 through 1988.

"(g) ASSISTANCE TO MUNICIPALITIES FOR ENERGY AND MATERIALS CONSERVATION AND RECOVERY PLANNING ACTIVITIES.—

"(1) The Administrator is authorized to make grants to municipalities, regional authorities, and intermunicipal agencies to carry out activities described in subparagraphs (A) and (B) of section 4003(b)(1). Such grants may be made only pursuant to an application submitted to the Administrator by the municipality which application has been approved by the State and determined by the State to be consistent with any State plan approved or submitted under this subtitle or any other appropriate planning carried out by the State.

"(2) There is authorized to be appropriated for the fiscal year beginning October 1, 1981, and for each fiscal year thereafter before October 1, 1986, \$8,000,000 for purposes of making grants to municipalities under this subsection. No amount may be appropriated for such purposes for the fiscal year beginning on October 1, 1986, or for any fiscal year thereafter.

"(3) Assistance provided by the Administrator under this subsection shall be used only for the purposes specified in paragraph (1). Such assistance may not be used for purposes of land acquisition, final facility design, equipment purchase, construction, startup or operation activities.

"RURAL COMMUNITIES ASSISTANCE

"Sec. 4009. (a) IN GENERAL.—The Administrator shall make grants to States to provide assistance to municipalities with a population of five thousand or less, or counties with a population of ten thousand or less or less than twenty persons per square mile and not within a metropolitan area, for solid waste management facilities (including equipment) necessary to meet the requirements of section 4005 of this Act or restrictions on open burning or other requirements arising under the Clean Air Act or the Federal Water Pollution Control Act. Such assistance shall only be available—

"(1) to any municipality or county which could not feasibly be included in a solid waste management system or facility serving an urbanized, multi-jurisdictional area because of its distance from such systems;

"(2) where existing or planned solid waste management services or facilities are unavailable or insufficient to comply with the requirements of section 4005 of this Act; and

"(3) for systems which are certified by the State to be consistent with any plans or programs established under any State or area-wide planning process.

"(b) ALLOTMENT.—The Administrator shall allot the sums appropriated to carry out this section in any fiscal year among the States in accordance with regulations promulgated by him on the basis of the average of the ratio which the population of rural areas of each State bears to the total population of rural areas of all the States the ratio which the population of counties in each State having less than twenty persons per square mile bears to the total population of such counties in all the States, and the ratio which the population of such low-density counties in each State having 33 per centum or more of all families with incomes not in excess of 125 per centum of the poverty level bears to the total population of such counties in all of the States.

"(c) LIMIT.—The amount of any grant under this section shall not exceed 75 per centum of the costs of the project. No assistance under this section shall be available for the acquisition of land or interests in land.

"(d) APPROPRIATIONS.—There are authorized to be appropriated \$25,000,000 for each of the fiscal years 1978 and 1979 to carry out this section. There are authorized to be appropriated \$10,000,000 for the fiscal year 1980 and \$15,000,000 for each of the fiscal years 1981 and 1982 to carry out this section.

"ADEQUACY OF CERTAIN GUIDELINES AND CRITERIA

"Sec. 4010. (a) STUDY.—The Administrator shall conduct a study of the extent to which the guidelines and criteria under this Act (other than guidelines and criteria for facilities to which subtitle C applies) which are applicable to solid waste management and disposal facilities, including, but not limited to landfills and surface impoundments, are adequate to protect human and health and the environment from ground water contamination. Such study shall include a detailed assessment of the degree to which the criteria under section 1008(a) and the criteria under section 4004 regarding monitoring, prevention of contamination, and remedial action are adequate to protect ground water and shall also include recommendation with respect to any additional enforcement authorities which the Administrator, in consultation with the Attorney General, deems necessary for such purposes.

"(b) REPORT.—Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall submit a report to the Congress setting forth the results of the study required under this section, together with any recommendations made by the Administrator on the basis of such study.

"(c) REVISIONS OF GUIDELINES AND CRITERIA.—Not later than March 31, 1988, the Administrator shall promulgate revisions of the criteria promulgated under paragraph (1) of section 4004(a) and under section 1008(a)(3) for facilities that may receive hazardous household wastes or hazardous wastes from small quantity generators under section 3007. The criteria shall be those necessary to protect human health and the environment and may take into account the practicable capability of such facilities. At a minimum such revisions for facilities potentially receiving such wastes should require ground water monitoring as necessary to detect contamination, establish criteria for the acceptable location of new or existing facilities, and provide for correction action as appropriate".

"SUBTITLE E—DUTIES OF THE SECRETARY OF COMMERCE IN RESOURCE AND RECOVERY

"FUNCTIONS

"Sec. 5001. The Secretary of Commerce shall encourage greater commercialization of proven resource recovery technology by providing—

- "(1) accurate specifications for recovered materials;**
- "(2) stimulation of development of markets for recovered materials;**
- "(3) promotion of proven technology; and**
- "(4) a forum for the exchange of technical and economic data relating to resource recovery facilities.**

"DEVELOPMENT OF SPECIFICATIONS FOR SECONDARY MATERIALS

"Sec. 5002. The Secretary of Commerce, acting through the National Bureau of Standards, and in conjunction with national standards-setting organizations in resource recovery, shall, after public hearings, and not later than two years after September 1, 1979, publish guidelines for the development of specifications for the classification of materials recovered from waste which were destined for disposal. The specifications shall pertain to the physical and chemical properties and characteristics of such materials with regard to their use in replacing virgin materials in various industrial, commercial, and governmental uses. In establishing such guidelines the Secretary shall also, to the extent feasible, provide such information as may be necessary to assist Federal agencies with procurement of items containing recovered materials. The Secretary shall continue to cooperate with national standards-setting organizations, as may be necessary, to encourage the publication, promulgation and updating of standards for recovered materials and for the use of recovered materials in various industrial, commercial, and governmental uses.

"DEVELOPMENT OF MARKETS FOR RECOVERED MATERIALS

"Sec. 5003. The Secretary of Commerce shall within two years after September 1, 1979 take such actions as may be necessary to—

- "(1) identify the geographical location of existing or potential markets for recovered materials;**
- "(2) identify the economic and technical barriers to the use of recovered materials; and**
- "(3) encourage the development of new uses for recovered materials.**

"TECHNOLOGY PROMOTION

"Sec. 5004. The Secretary of Commerce is authorized to evaluate the commercial feasibility of resource recovery facilities and to publish the results of such evaluation, and to develop a data base for purposes of assisting persons in choosing such a system.

"NONDISCRIMINATION REQUIREMENT

"Sec. 5005. In establishing any policies which may affect the development of new markets for recovered materials and in making any determination concerning whether or not to impose monitoring or other controls on any marketing or transfer of recovered materials, the Secretary of Commerce may consider whether to establish the same or similar policies or impose the same or similar monitoring or other controls on virgin materials.

"AUTHORIZATION OF APPROPRIATIONS

"Sec. 5006 There are authorized to be appropriated to the Secretary of Commerce \$5,000,000 for each of fiscal years 1980, 1981, and 1982 and \$1,500,000 for each of the fiscal years 1985 through 1988 to carry out the purposes of this subtitle.

"SUBTITLE F—FEDERAL RESPONSIBILITIES

"APPLICATION OF FEDERAL, STATE, AND LOCAL LAW TO FEDERAL FACILITIES

"Sec. 6001. Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief. The President may exempt any solid waste management facility of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriation. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

"FEDERAL PROCUREMENT

"Sec. 6002. (a) APPLICATION OF SECTION.—Except as provided in subsection (b), a procuring agency shall comply with the requirements set forth in this section and any regulations issued under this section, with respect to any purchase or acquisition of a procurement item where the purchase price of the item exceeds \$10,000 or where the quantity of such items or of functionally equivalent items purchased or acquired in the course of the preceding fiscal year was \$10,000 or more.

"(b) PROCUREMENT SUBJECT TO OTHER LAW.—Any procurement, by any procuring agency, which is subject to regulations of the Administrator under section 6004 (as promulgated before the date of enactment of this section under comparable provisions of prior law) shall not be subject to the requirements of this section to the extent that such requirements are inconsistent with such regulations.

"(c) REQUIREMENTS.—

"(1) After the date specified in applicable guidelines prepared pursuant to subsection (e) of this section, each procuring agency which procures any items designated in such guidelines shall procure such items composed of the highest percentage of recovered materials practicable (and in the case of paper, the highest percentage of the post-consumer recovered materials referred to in subsection (h)(1) practicable), consistent with maintaining a satisfactory level of competition, considering such guidelines. The decision not to procure such items shall be based on a determination that such procurement items—

"(A) are not reasonably available within a reasonable period of time;
"(B) fail to meet the performance standards set forth in the applicable specifications or fail to meet the reasonable performance standards of the procuring agencies; or

"(C) are only available at an unreasonable price. Any determination under subparagraph (B) shall be made on the basis of the guidelines of the Bureau of Standards in any case in which such material is covered by such guidelines.

"(2) Agencies that generate heat, mechanical, or electrical energy from fossil fuel in systems that have the technical capacity of using energy or fuels derived from solid waste as a primary or supplementary fuel shall use such capability to the maximum extent practicable.

"(3) After the date specified in any applicable guidelines prepared pursuant to subsection (e) of this section, contracting officers shall require that vendors:

"(A) certify that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by applicable specifications or other contractual requirements and

"(B) estimate the percentage of the total material utilized for the performance of the contract which is recovered materials.

"(d) SPECIFICATIONS.—All Federal agencies that have the responsibility for drafting or reviewing specifications for procurement items procured by Federal agencies shall—

"(1) as expeditiously as possible but in any event no later than 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, eliminate from such specifications—

"(A) any exclusion of recovered materials and

"(B) any requirement that items be manufactured from virgin materials; and

"(2) within one year after the date of publication of applicable guidelines under subsection (e), or as otherwise specified in such guidelines, assure that such specifications require the use of recovered materials to the maximum extent possible without jeopardizing the intended end use of the item.

"(e) GUIDELINES.—The Administrator, after consultation with the Administrator of General Services, the Secretary of Commerce (acting through the Bureau of Standards), and the Public Printer, shall prepare, and from time to time revise, guidelines for the use of procuring agencies in complying with the requirements of this section. Such guidelines shall—

"(1) designate those items which are or can be produced with recovered materials and whose procurement by procuring agencies will carry out the objectives of this section, and in the case of paper, provide for maximizing the use of post consumer recovered materials referred to in subsection (h)(1) and

"(2) set forth recommended practices with respect to the procurement of recovered materials and items containing such materials and with respect to certification by vendors of the percentage of recovered materials used, and shall provide information as to the availability, relative price, and performance of such materials and items and where appropriate shall recommend the level of recovered material to be contained in the procured product. The Administrator shall prepare final guidelines for paper within 180 days after the enactment of the Hazardous and Solid Waste Amendments of 1984, and for three additional product categories (including tires) by October 1, 1985. In making the designation under paragraph (1), the Administrator shall consider, but is not limited in his considerations, to—

"(A) the availability of such items;

"(B) the impact of the procurement of such items by procuring agencies on the volume of solid waste which must be treated, stored or disposed of;

"(C) the economic and technological feasibility of producing and using other items; and

"(D) other uses for such recovered materials.

"(f) **PROCUREMENT OF SERVICES.**—A procuring agency shall, to the maximum extent practicable, manage or arrange for the procurement of solid waste management services in a manner which maximizes energy and resource recovery.

"(g) **EXECUTIVE OFFICE.**—The Office of Procurement Policy in the Executive Office of the President, in cooperation with the Administrator, shall implement the requirements of this section. It shall be the responsibility of the Office of Procurement Policy to coordinate this policy with other policies for Federal procurement, in such a way as to maximize the use of recovered resources, and to annually report to the Congress on actions taken by Federal agencies and the progress made in the implementation of such policy, and to, every 2 years beginning in 1984, report to the Congress on actions taken by Federal agencies and the progress made in the implementation of this section, including agency compliance with subsection (d).

"(h) **DEFINITION.**—As used in this section, in the case of paper products, the term 'recovered materials' includes—

"(1) postconsumer materials such as—

"(A) paper, paperboard, and fibrous wastes from retail stores, office buildings, homes, and so forth, after they have passed through their end-use as a consumer item, including: used corrugated boxes, old newspapers; old magazines; mixed waste paper, tabulating cards; and used cordage; and

"(B) all paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste, and

"(2) manufacturing, forest residues, and other wastes such as—

"(A) dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste, resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

"(B) finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others;

"(C) fibrous byproducts of harvesting, manufacturing, extractive, or wood-cutting processes, flax, straw, linters, bagasse, slash, and other forest residues;

"(D) wastes generated by the conversion of goods made from fibrous material (that is, waste rope from cordage manufacture, textile mill waste, and cuttings); and

"(E) fibers recovered from waste water which otherwise would enter the waste stream.

"(i) **PROCUREMENT PROGRAM.**—

(1) Within 1 year after the date of publication of applicable guidelines under subsection (e), each procuring agency shall develop an affirmative procurement program which will assure that items composed of recovered

materials will be purchased to the maximum extent practicable and which is consistent with applicable provisions of Federal procurement law.

"(2) Each affirmative procurement program required under this subsection shall, at a minimum, contain—

"(A) a recovered materials preference program;

"(B) an agency promotion program to promote the preference program adopted under subparagraph (A);

"(C) a program for requiring estimates of the total percentage of recovered material utilized in the performance of a contract; certification of minimum recovered material content actually utilized, where appropriate; and reasonable verification procedures for estimates and certifications; and

"(D) annual review and monitoring of the effectiveness of an agency's affirmative procurement program.

In the case of paper, the recovered materials preference program required under subparagraph (A) shall provide for the maximum use of the post consumer recovered materials referred to in subsection (h)(1).

"(3) In developing the preference program, the following options shall be considered for adoption:

"(A) Case-by-Case Policy Development: Subject to the limitations of subsection (c)(1)(A) through (C), a policy of awarding contracts to the vendor offering an item composed of the highest percentage of recovered materials practicable (and in the case of paper, the highest percentage of the post consumer recovered materials referred to in subsection (h)(1)). Subject to such limitations, agencies may make an award to a vendor offering items with less than the maximum recovered materials content.

"(B) Minimum Content Standards: Minimum recovered materials content specifications which are set in such a way as to assure that the recovered materials content (and in the case of paper, the content of post consumer materials referred to in subsection (h)(1)) required is the maximum available without jeopardizing the intended end use of the item, or violating the limitations of subsection (c)(1)(A) through (C).

Procuring agencies shall adopt one of the options set forth in subparagraphs (A) and (B) or a substantially equivalent alternative, for inclusion in the affirmative procurement program.

"COOPERATION WITH THE ENVIRONMENTAL PROTECTION AGENCY

"Sec. 6003. (a) GENERAL RULE.—All Federal agencies shall assist the Administrator in carrying out his functions under this Act and shall promptly make available all requested information concerning past or present Agency waste management practices and past or present Agency owned, leased, or operated solid or hazardous waste facilities. This information shall be provided in such format as may be determined by the Administrator.

"(b) INFORMATION RELATING TO ENERGY AND MATERIALS CONSERVATION AND RECOVERY.—The Administrator shall collect, maintain, and disseminate information concerning the market potential of energy and materials recovered from solid waste, including materials obtained through source separation, and information concerning the savings potential of conserving resources contributing to the waste stream. The Administrator shall identify the regions in which the increased substitution of such energy for energy derived from fossil fuels and other sources is most likely to be feasible, and provide information on the technical and economic aspects of developing

integrated resource conservation or recovery systems which provide for the recovery of source-separated materials to be recycled or the conservation of resources. The Administrator shall utilize the authorities of subsection (a) in carrying out this subsection.

**"APPLICABILITY OF SOLID WASTE DISPOSAL GUIDELINES
TO EXECUTIVE AGENCIES**

"Sec. 6004. (a) COMPLIANCE.—

"(1) If—

"(A) an Executive agency (as defined in section 105 of title 5, United States Code) or any unit of the legislative branch of the Federal Government has jurisdiction over any real property or facility the operation or administration of which involves such agency in solid waste management activities, or

"(B) such an agency enters into a contract with any person for the operation by such person of any Federal property or facility, and the performance of such contract involves such person in solid waste management activities,

then such an agency shall insure compliance with the guidelines recommended under section 1008 and the purposes of this Act in the operation or administration of such property or facility, or the performance of such contract, as the case may be.

"(2) Each Executive agency or any unit of the legislative branch of the Federal Government which conducts any activity—

"(A) which generates solid waste, and

"(B) which, if conducted by a person other than such agency, would require a permit or license from such agency in order to dispose of such solid waste,

shall insure compliance with such guidelines and the purposes of this Act in conducting such activity.

"(3) Each Executive agency which permits the use of Federal property for purposes of disposal of solid waste shall insure compliance with such guidelines and the purposes of this Act in the disposal of such waste.

"(4) The President or the Committee on House Administration of the House of Representatives and the Committee on Rules and Administration of the Senate with regard to any unit of the legislative branch of the Federal Government shall prescribe regulations to carry out this subsection.

"(b) LICENSES AND PERMITS.—Each Executive agency which issues any license or permit for disposal of solid waste shall, prior to the issuance of such license or permit, consult with the Administrator to insure compliance with guidelines recommended under section 1008 and the purposes of this Act.

"SUBTITLE G—MISCELLANEOUS PROVISIONS

"EMPLOYEE PROTECTION

"Sec. 7001. (a) GENERAL.—No person shall fire, or in any other way discriminate against, or cause to be fired or discriminated against, any employee or any authorized representative of employees by reason of the fact that such employee or representative has filed, instituted, or caused to be filed or instituted any proceeding under this Act or under any applicable implementation plan, or has testified or is about to testify in any proceeding resulting from the administration or enforcement of the provisions of this Act or of any applicable implementation plan.

"(b) REMEDY.—Any employee or a representative of employees who believes that he has been fired or otherwise discriminated against by any person in violation of subsection (a) of this section may, within thirty days after such alleged violation occurs, apply to the Secretary of Labor for a review of such firing or alleged discrimination. A copy of the application shall be sent to such person who shall be the respondent. Upon receipt of such application, the Secretary of Labor shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of any party to such review to enable the parties to present information relating to such alleged violation. The parties shall be given written notice of the time and place of the hearing at least five days prior to the hearing. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Secretary of Labor shall make findings of fact. If he finds that such violation did occur, he shall issue a decision, incorporating an order therein and his findings, requiring the party committing such violation to take such affirmative action to abate the violation as the Secretary of Labor deems appropriate, including, but not limited to, the rehiring or reinstatement of the employee or representative of employees to his former position with compensation. If he finds that there was no such violation, he shall issue an order denying the application. Such order issued by the Secretary of Labor under this subparagraph shall be subject to judicial review in the same manner as orders and decisions of the Administrator or subject to judicial review under this Act.

"(c) COSTS.—Whenever an order is issued under this section to abate such violation, at the request of the applicant, a sum equal to the aggregate amount of all costs and expenses (including the attorney's fees) as determined by the Secretary of Labor, to have been reasonably incurred by the applicant for, or in connection with, the institution and prosecution of such proceedings, shall be assessed against the person committing such violation.

"(d) EXCEPTION.—This section shall have no application to any employee who, acting without direction from his employer (or his agent) deliberately violates any requirement of this Act.

"(e) EMPLOYMENT SHIFTS AND LOSS.—The Administrator shall conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of the provisions of this Act and applicable implementation plans, including where appropriate, investigating threatened plant closures or reductions in employment allegedly resulting from such administration or enforcement. Any employee who is discharged, or laid off, threatened with discharge or layoff, or otherwise discriminated against by any person because of the alleged results of such administration or enforcement, or any representative of such employee, may request the Administrator to conduct a full investigation of the matter. The Administrator shall thereupon investigate the matter and, at the request of any party,

shall hold public hearings on not less than five days' notice, and shall at such hearings require the parties, including the employer involved, to present information relating to the actual or potential effect of such administration or enforcement on employment and on any alleged discharge, layoff, or other discrimination and the detailed reasons or justification therefor. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Administrator shall make findings of fact as to the effect of such administration or enforcement on employment and on the alleged discharge, layoff, or discrimination and shall make such recommendations as he deems appropriate. Such report, findings, and recommendations shall be available to the public. Nothing in this subsection shall be construed to require or authorize the Administrator or any State to modify or withdraw any standard, limitation, or any other requirement of this Act or any applicable implementation plan.

"(f) OCCUPATIONAL SAFETY AND HEALTH.—In order to assist the Secretary of Labor and the Director of the National Institute for Occupational Safety and Health in carrying out their duties under the Occupational Safety and Health Act of 1970, the Administrator shall—

"(1) provide the following information, as such information becomes available, to the Secretary and the Director:

"(A) the identity of any hazardous waste generation, treatment, storage, disposal facility or site where cleanup is planned or underway;

"(B) information identifying the hazards to which persons working at a hazardous waste generation, treatment, storage, disposal facility or site or otherwise handling hazardous waste may be exposed, the nature and extent of the exposure, and methods to protect workers from such hazards; and

"(C) incidents of worker injury or harm at a hazardous waste generation, treatment, storage or disposal facility or site; and

"(2) notify the Secretary and the Director of the Administrator's receipt of notifications under section 3010 or reports under sections 3002, 3003, and 3004 of this title and make such notifications and reports available to the Secretary and the Director.

"CITIZEN SUITS

"Sec. 7002. (a) IN GENERAL.—Except as provided in subsection (b) or (c) of this section, any person may commence a civil action on his own behalf—

"(1)(A) against any person (including (a) the United States, and (b) any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to this Act; or

"(B) against any person, including the United States and any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution, and including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid waste which may present an imminent and substantial endangerment to health or the environment; or

"(2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary with the Administrator.

Any action under paragraph (a) (1) of this subsection shall be brought in the district court for the district in which the alleged violation occurred or the alleged endangerment may occur. An action brought under paragraph (a) (2) of this subsection may be brought in the district court for the district in which the alleged violation occurred or in the District Court of the District of Columbia. The district court shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce the permit, standard, regulation, condition, requirement, prohibition, or order, referred to in paragraph (1)(A), to restrain any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in paragraph (1)(B) to order such person to take such other action as may be necessary, or both, or to order the Administrator to perform the act or duty referred to in paragraph (2), as the case may be, and to apply any appropriate civil penalties under section 3008 (a) and (g)."

"(b) ACTIONS PROHIBITED.—

(1) No action may be commenced under paragraph (a) (1) (A) of this section—
"(A) prior to 60 days after the plaintiff has given notice of the violation to—

"(i) the Administrator;
"(ii) the State in which the alleged violation occurs; and
"(iii) to any alleged violator of such permit, standard, regulation, condition, requirement, prohibition, or order,
except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subtitle C of this Act; or

"(B) if the Administrator or State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance with such permit, standard, regulation, conditions, requirement, prohibition, or order.

In any action under subsection (a)(1)(A) in a court of the United States, any person may intervene as a matter of right.

"(2) No action may be commenced under subsection (a)(1)(B) of this section prior to 90 days after the plaintiff has given notice of the endangerment to—

"(A) the Administrator;
"(B) the State in which the alleged endangerment may occur;
"(C) any person alleged to have contributed or to be contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in subsection (a)(1)(B),
except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subtitle C of this Act.

"(B) No action may be commenced under subsection (a)(1)(B) of this section if the Administrator, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

"(i) has commenced and is diligently prosecuting an action under section 7003 of this Act or under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980,

"(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980;

"(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and is diligently proceeding with a remedial action under that Act; or

"(iv) has obtained a court order (including a consent decree) or issued an administrative order under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or section 7003 of this Act pursuant to which a responsible party is diligently conducting a removal action, Remedial Investigation and Feasibility Study (RIFS), or proceeding with a remedial action.

In the case of an administrative order referred to in clause (iv), actions under subsection (a)(1)(B) are prohibited only as to the scope and duration of the administrative order referred to in clause (iv).

"(C) No action may be commenced under subsection (a)(1)(B) of this section if the State, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

"(i) has commenced and is diligently prosecuting an action under subsection (a)(1)(B);

"(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980; or

"(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and is diligently proceeding with a remedial action under that Act.

"(D) No action may be commenced under subsection (a)(1)(B) by any person (other than a State or local government) with respect to the siting of a hazardous waste treatment, storage, or a disposal facility, nor to restrain or enjoin the issuance of a permit for such facility.

"(E) In any action under subsection (a)(1)(B) in a court of the United States, any person may intervene as a matter of right when the applicant claims an interest relating to the subject of the action and he is so situated that the disposition of the action may, as a practical matter, impair or impede his ability to protect that interest, unless the Administrator or the State shows that the applicant's interest is adequately represented by existing parties.

"(F) Whenever any action is brought under subsection (a)(1)(B) in a court of the United States, the plaintiff shall serve a copy of the complaint on the Attorney General of the United States and with the Administrator.

"(1) prior to sixty days after the plaintiff has given notice of the violation (A) to the Administrator; (B) to the State in which the alleged violation occurs; and (C) to any alleged violator of such permit, standard, regulation, condition, requirement, or order; or

"(2) if the Administrator or State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance with such permit, standard, regulation, condition, requirement, or order: PROVIDED, HOWEVER, That in any such action in a court of the United States any person may intervene as a matter of right.

"(c) NOTICE.—No action may be commenced under paragraph (a) (2) of this section prior to sixty days after the plaintiff has given notice to the Administrator that he will commence such action, except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of Subtitle C of this Act. Notice under this subsection shall be given in such manner as the Administrator shall prescribe by regulation. Any action respecting a violation under this Act may be brought under this section only in the judicial district in which such alleged violation occurs.

"(d) INTERVENTION.—In any action under this section the Administrator, if not a party, may intervene as a matter of right.

"(e) COSTS.—The court, in issuing any final order in any action brought pursuant to this section or section 7006 may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or substantially prevailing party whenever the court determines such an award is appropriate. The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.

"(f) OTHER RIGHTS PRESERVED.—Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any standard or requirement relating to the management of solid waste or hazardous waste, or to seek any other relief (including relief against the Administrator or a State agency).

"(g) TRANSPORTERS.—A transporter shall not be deemed to have contributed or to be contributing to the handling, storage, treatment, or disposal, referred to in subsection (a)(1)(B) taking place after such solid waste or hazardous waste has left the possession or control of such transporter, if the transportation of such waste was under a sole contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste".

"IMMINENT HAZARD

"Sec. 7003. (a) AUTHORITY OF ADMINISTRATOR.—Notwithstanding any other provision of this Act, upon receipt of evidence that the past or present handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may bring suit on behalf of the United States in the appropriate district court against any person (including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility) who has contributed or who is contributing to such handling, storage, treatment, transportation or disposal to restrain such person from such handling, storage, treatment, transportation, or disposal, to order such person to take such other action as may be necessary, or both. A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal taking place after such solid waste or hazardous waste has left the possession or control of such transporter if the transportation of such waste was under sole contractual arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste. The Administrator shall provide notice to the affected State of any such suit. The Administrator may also, after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and the environment.

"(b) VIOLATIONS.—Any person who willfully violates, or fails or refuses to comply with, any order of the Administrator under subsection (a) may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than \$5,000 for each day in which such violation occurs or such failure to comply continues.

"(c) IMMEDIATE NOTICE.—Upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment to human health or the environment, the Administrator shall provide immediate notice of such endangerment to be promptly posted at the sit where the waste is located.

"(d) PUBLIC PARTICIPATION IN SETTLEMENTS.—Whenever the United States or the Administrator proposes to covenant not to sue or to forbear from suit or to settle any claim arising under this section, notice, and opportunity for a public meeting in the affected area, and a reasonable opportunity to comment on the proposed settlement prior to its final entry shall be afforded to the public. The decision of the United States or the Administrator to enter into or not to enter into such Consent Decree, covenant or agreement shall not constitute a final agency action subject to judicial review under this Act or the Administrative Procedure Act."

"PETITION FOR REGULATIONS; PUBLIC PARTICIPATION

"Sec. 7004. (a) PETITION.—Any person may petition the Administrator for the promulgation, amendment, or repeal of any regulation under this Act. Within a reasonable time following receipt of such petition, the Administrator shall take action with respect to such petition and shall publish notice of such action in the Federal Register, together with the reasons therefor.

"(b) PUBLIC PARTICIPATION.—

(1) Public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish minimum guidelines for public participation in such processes.

"(2) Before the issuing of a permit to any person with any respect to any facility for the treatment, storage, or disposal of hazardous wastes under section 3005, the Administrator shall—

"(A) cause to be published in major local newspapers of general circulation and broadcast over local radio stations notice of the agency's intention to issue such permit, and

"(B) transmit in writing notice of the agency's intention to issue such permit to each unit of local government having jurisdiction over the area in which such facility is proposed to be located and to each State agency having any authority under State law with respect to the construction or operation of such facility.

If within 45 days the Administrator receives written notice of opposition to the agency's intention to issue such permit and a request for a hearing, or if the Administrator determines on his own initiative, he shall hold an informal public hearing (including an opportunity for presentation of written and oral views) on whether he should issue a permit for the proposed facility. Whenever possible the Administrator shall schedule such hearing at a location convenient to the nearest population center to such proposed facility and give notice in the aforementioned manner of the date, time, and subject matter of such hearing. No State program which provides for the issuance of permits referred to in this paragraph may be authorized by the Administrator under section 3006 unless such program provides for the notice and hearing required by the paragraph.

"SEPARABILITY

"Sec. 7005. If any provision of this Act, or the application of any provision of this Act to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances, and the remainder of this Act, shall not be affected thereby.

"JUDICIAL REVIEW

"Sec. 7006. (a) REVIEW OF FINAL REGULATIONS AND CERTAIN PETITIONS.— Any judicial review of final regulations promulgated pursuant to this Act and the Administrator's denial of any petition for the promulgation, amendment, or repeal of any regulation under this Act shall be in accordance with sections 701 through 706 of title 5 of the United States Code, except that—

"(1) a petition for review of action of the Administrator in promulgating any regulation, or requirement under this Act or denying any petition for promulgation, amendment or repeal of any regulation under this Act may be filed only in the United States Court of Appeals for the District of Columbia, and such petition shall be filed within ninety days from the date of such promulgation or denial, or after such date if such petition for review is based solely on grounds arising after such ninetieth day; action of the Administrator with respect to which review could have been obtained under this subsection shall not be subject to judicial review in civil or criminal proceedings for enforcement; and

"(2) in any judicial proceeding brought under this section in which review is sought of a determination under this Act required to be made on the record after notice and opportunity for hearing, if a party seeking review under this Act applied to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that the information is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, and to be adduced upon the hearing in such manner and upon such terms and conditions as the court may deem proper; the Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken, and he shall file with the court such modified or new findings and his recommendation, if any, for the modification or setting aside of his original order, with the return of such additional evidence.

"(b) REVIEW OF CERTAIN ACTIONS UNDER SECTIONS 3005 AND 3006.—Review of the Administrator's action

(1) in issuing, denying, modifying, or revoking any permit under section 3005 (or in modifying or revoking any permit which is deemed to have been issued under section 3012(d)(1)), or

(2) in granting, denying, or withdrawing authorization or interim authorization under section 3006, may be had by any interested person in the Circuit Court of Appeals of the United States for the Federal judicial district in which such person resides or transacts such business upon application by such person. Any such application shall be made within ninety days from the date of such issuance, denial, modification, revocation, grant, or withdrawal, or after such date only if such application is based solely on grounds which arose after such ninetieth day. Action of the Administrator with respect to which review could have been obtained under this subsection shall not be subject to judicial review in

civil or criminal proceedings for enforcement. Such review shall be in accordance with sections 701 through 706 of title 5 of the United States Code.

"GRANTS OR CONTRACTS FOR TRAINING PROJECTS

"Sec. 7007. (a) GENERAL AUTHORITY.—The Administrator is authorized to make grants to, and contracts with any eligible organization. For purposes of this section the term "eligible organization" means a State or interstate agency, a municipality, educational institution, and any other organization which is capable of effectively carrying out a project which may be funded by grant under subsection (b) of this section.

"(b) PURPOSES.—

"(1) Subject to the provisions of paragraph (2), grants or contracts may be made to pay all or a part of the costs, as may be determined by the Administrator, of any project operated or to be operated by an eligible organization, which is designed—

"(A) to develop, expand, or carry out a program (which may combine training, education, and employment) for training persons for occupations involving the management, supervision, design, operation, or maintenance of solid waste management and resource recovery equipment and facilities; or

"(B) to train instructors and supervisory personnel to train or supervise persons in occupations involving the design, operation, and maintenance of solid waste management and resource recovery equipment and facilities.

"(2) A grant or contract authorized by paragraph (1) of this subsection may be made only upon application to the Administrator at such time or times and containing such information as he may prescribe, except that no such application shall be approved unless it provides for the same procedures and reports (and access to such reports and to other records) as required by section 207(b) (4) and (5) (as in effect before the date of the enactment of Resource Conservation and Recovery Act of 1976) with respect to applications made under such section (as in effect before the date of the enactment of Resource Conservation and Recovery Act of 1976).

"(c) STUDY.—The Administrator shall make a complete investigation and study to determine—

"(1) the need for additional trained State and local personnel to carry out plans assisted under this Act and other solid waste and resource recovery programs;

"(2) means of using existing training programs to train such personnel; and

"(3) the extent and nature of obstacles to employment and occupational advancement in the solid waste management and resource recovery field which may limit either available manpower or the advancement of personnel in such field.

He shall report the results of such investigation and study, including his recommendations to the President and the Congress.

"PAYMENTS

"Sec. 7008. (a) GENERAL RULE.—Payments of grants under this Act may be made (after necessary adjustment on account of previously made underpayments or overpayments) in advance or by way of reimbursements, and in such installments and on such conditions as the Administrator may determine.

"(b) PROHIBITION.—No grant may be made under this Act to any private profitmaking organization.

"LABOR STANDARDS

"Sec. 7009. No grant for a project of construction under this Act shall be made unless the Administrator finds that the application contains or is supported by reasonable assurance that all laborers and mechanics employed by contractors or subcontractors on projects of the type covered by the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), will be paid wages at rates not less than those prevailing on similar work in the locality as determined by the Secretary of Labor in accordance with that Act; and the Secretary of Labor shall have with respect to the labor standards specified in this section the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 5 U.S.C. 133z-5) and section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c).

"INTERIM CONTROL OF HAZARDOUS WASTE INJECTION

"Sec. 7010. (a) UNDERGROUND SOURCE OF DRINKING WATER.—No hazardous waste may be disposed of by underground injection—

"(1) into a formation which contains (within one-quarter mile of the well used for such underground injection) an underground source of drinking water; or

"(2) above such a formation.

The prohibitions established under this section shall take effect 6 months after the enactment of the Hazardous and Solid Waste Amendments of 1984 except in the case of any State in which identical or more stringent prohibitions are in effect before such date under the Safe Drinking Water Act.

"(b) ACTIONS UNDER CERCLA.—Subsection (a) shall not apply to the injection of contaminated ground water into the aquifer from which it was withdrawn, if—

"(1) such injection is—

"(A) a response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, or

"(B) part of corrective action required under this title intended to clean up such contamination;

"(2) such contaminated ground water is treated to substantially reduce hazardous constituents prior to such injection; and

"(3) such response action or corrective action will, upon completion, be sufficient to protect human health and the environment.

"(c) ENFORCEMENT.—In addition to enforcement under sections 7002 and 7003 of this Act, the prohibitions established under paragraphs (1) and (2) of subsection (a) shall be enforceable under the Safe Drinking Water Act in any State—

"(1) which has adopted identical or more stringent prohibitions under part C of the Safe Drinking Water Act and which has assumed primary enforcement responsibility under that Act for enforcement of such prohibitions; or

"(2) in which the Administrator has adopted identical or more stringent prohibitions under the Safe Drinking Water Act and is exercising primary enforcement responsibility under that Act for enforcement of such prohibitions.

"(d) The terms 'primary enforcement responsibility', 'underground source of drinking water', 'formation' and 'well' have the same meanings as provided in regulations of the Administrator under the Safe Drinking Water Act. The term 'Safe Drinking Water Act' means title XIV of the Public Health Service Act."

"LAW ENFORCEMENT AUTHORITY

"Sec. 7012. The Attorney General of the United States shall, at the request of the Administrator and on the basis of a showing of need, deputize qualified employees of the Environmental Protection Agency to serve as special Deputy United States Marshals in criminal investigations with respect to violations of the criminals provisions of this Act."

"SUBTITLE H—RESEARCH, DEVELOPMENT, DEMONSTRATION, AND INFORMATION

"RESEARCH, DEMONSTRATIONS, TRAINING, AND OTHER ACTIVITIES

"Sec. 8001. (a) GENERAL AUTHORITY.—The Administrator, alone or after consultation with the Administrator of the Federal Energy Administration, the Administrator of the Energy Research and Development Administration, or the Chairman of the Federal Power Commission shall conduct, and encourage, cooperate with, and render financial and other assistance to appropriate public (whether Federal, State, interstate, or local) authorities, agencies, and institutions, private agencies and institutions, and individuals in the conduct of, and promote the coordination of, research, investigations, experiments, training, demonstrations, surveys, public education programs, and studies relating to—

"(1) any adverse health and welfare effects of the release into the environment of material present in solid waste, and methods to eliminate such effects;

"(2) the operation and financing of solid waste management programs;

"(3) the planning, implementation, and operation of resource recovery and resource conservation systems and hazardous waste management systems, including the marketing of recovered resources;

"(4) the production of usable forms of recovered resources, including fuel, from solid waste;

"(5) the reduction of the amount of such waste and unsalvageable waste materials;

"(6) the development and application of new and improved methods of collecting and disposing of solid waste and processing and recovering materials and energy from solid wastes;

"(7) the identification of solid waste components and potential materials and energy recoverable from such waste components;

"(8) small scale and low technology solid waste management systems, including but not limited to, resource recovery source separation systems;

"(9) methods to improve the performance characteristics of resources recovered from solid waste and the relationship of such performance characteristics to available and potentially available markets for such resources;

"(10) improvements in land disposal practices for solid waste (including sludge) which may reduce the adverse environmental effects of such disposal and other aspects of solid waste disposal on land, including means for reducing the harmful environmental effects of earlier and existing landfills, means for restoring areas damaged by such earlier or existing landfills, means for rendering landfills safe for purposes of construction and other uses, and techniques of recovering materials and energy from landfills;

"(11) methods for the sound disposal of, or recovery of resources, including energy, from, sludge (including sludge from pollution control and treatment facilities, coal slurry pipelines, and other sources);

"(12) methods of hazardous waste management, including methods of rendering such waste environmentally safe; and

"(13) any adverse effects on air quality (particularly with regard to the emission of heavy metals) which result from solid waste which is burned (either alone or in conjunction with other substances) for purposes of treatment, disposal or energy recovery.

"(b) MANAGEMENT PROGRAM.—

"(1)(A) In carrying out his functions pursuant to this Act, and any other Federal legislation respecting solid waste or discarded material research, development, and demonstrations, the Administrator shall establish a management program or system to insure the coordination of all such activities and to facilitate and accelerate the process of development of sound new technology (or other discoveries) from the research phase, through development, and into the demonstration phase.

"(B) The Administrator shall

"(i) assist, on the basis of any research projects which are developed with assistance under this Act or without Federal assistance, the construction of pilot plant facilities for the purpose of investigating or testing the technological feasibility of any promising new fuel, energy, or resource recovery or resource conservation method or technology; and

"(ii) demonstrate each such method and technology that appears justified by an evaluation at such pilot plant stage or at a pilot plant stage developed without Federal assistance. Each such demonstration shall incorporate new or innovative technical advances or shall apply such advances to different circumstances and conditions, for the purpose of evaluating design concepts or to test the performance, efficiency, and economic feasibility of a particular method or technology under actual operating conditions. Each such demonstration shall be so planned and designed that, if successful, it can be expanded or utilized directly as a full-scale operational fuel, energy, or resource recovery or resource conservation facility.

"(2) Any energy-related research, development, or demonstration project for the conversion including bioconversion, of solid waste carried out by the Environmental Protection Agency or by the Energy Research and Development Administration pursuant to this or any other Act shall be administered in accordance with the May 7, 1976, Interagency Agreement between the Environmental Protection Agency and the Energy Research and Development Administration on the Development of Energy from Solid Wastes and specifically, that in accordance with this agreement,

"(A) for those energy-related projects of mutual interest, planning will be conducted jointly by the Environmental Protection Agency and the Energy Research and Development Administration, following which project responsibility will be assigned to one agency;

"(B) energy-related portions of projects for recovery of synthetic fuels or other forms of energy from solid waste shall be the responsibility of the Energy Research and Development Administration;

"(C) the Environmental Protection Agency shall retain responsibility for the environmental, economic, and institutional aspects of solid waste projects and for assurance that such projects are consistent with any applicable suggested guidelines published pursuant to section 1008, and any applicable State or regional solid waste management plan; and

"(D) any activities undertaken under provisions of sections 8002 and 8003 as related to energy; as related to energy or synthetic fuels recovery from waste; or as related to energy conservation shall be accomplished through coordination and consultation with the Energy Research and Development Administration.

"(c) AUTHORITIES.—

"(1) In carrying out subsection (a) of this section respecting solid waste research, studies, development, and demonstration, except as otherwise specifically provided in section 8004(d), the Administrator may make grants to or enter into contracts (including contracts for construction) with, public agencies and authorities or private persons.

"(2) Contracts for research, development, or demonstrations or for both (including contracts for construction) shall be made in accordance with and subject to the limitations provided with respect to research contracts of the military departments in title 10, United States Code, section 2353, except that the determination, approval, and certification required thereby shall be made by the Administrator.

"(3) Any invention made or conceived in the course of, or under, any contract under this Act shall be subject to section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 to the same extent and in the same manner as inventions made or conceived in the course of contracts under such Act, except that in applying such section, the Environmental Protection Agency shall be substituted for the Energy Research and Development Administration and the words 'solid waste' shall be substituted for the word 'energy' where appropriate.

"(4) For carrying out the purpose of this Act the Administrator may detail personnel of the Environmental Protection Agency to agencies eligible for assistance under this section.

**"SPECIAL STUDIES; PLANS FOR RESEARCH, DEVELOPMENT,
AND DEMONSTRATIONS**

"Sec. 8002. (a) GLASS AND PLASTIC.—The Administrator shall undertake a study and publish a report on resource recovery from glass and plastic waste, including a scientific, technological, and economic investigation of potential solutions to implement such recovery.

"(b) COMPOSITION OF WASTE STREAM.—The Administrator shall undertake a systematic study of the composition of the solid waste stream and of anticipated future changes in the composition of such stream and shall publish a report containing the results of such study and quantitatively evaluating the potential utility of such components.

"(c) PRIORITIES STUDY.—For purposes of determining priorities for research on recovery of materials and energy from solid waste and developing materials and energy recovery research, development, and demonstration strategies, the Administrator shall review, and make a study of, the various existing and promising techniques of energy recovery from solid waste (including, but not limited to, waterwall furnace incinerators, dry shredded fuel systems, pyrolysis, densified refuse-derived fuel systems, anerobic digestion, and fuel and feedstock preparation systems). In carrying out such study the Administrator shall investigate with respect to each such technique—

"(1) the degree of public need for the potential results of such research, development, or demonstration,

"(2) the potential for research, development, and demonstration without Federal action, including the degree of restraint on such potential posed by risks involved, and

"(3) the magnitude of effort and period of time necessary to develop the technology to the point where Federal assistance can be ended.

"(d) SMALL-SCALE AND LOW TECHNOLOGY STUDY.—The Administrator shall undertake a comprehensive study and analysis of, and publish a report on, systems of small-scale and low technology solid waste management, including household resource recovery and resource recovery systems which have special application to multiple dwelling units and high density housing and office complexes. Such study and analysis shall include an investigation of the degree to which such systems could contribute to energy conservation.

"(e) FRONT-END SOURCE SEPARATION.—The Administrator shall undertake research and studies concerning the compatibility of front-end source separation systems with high technology resource recovery systems and shall publish a report continuing the results of such research and studies.

"(f) MINING WASTE.—The Administrator, in consultation with the Secretary of the Interior, shall conduct a detailed and comprehensive study on the adverse effects of solid wastes from active and abandoned surface and underground mines on the environment, including, but not limited to, the effects of such wastes on humans, water, air, health, welfare, and natural resources, and on the adequacy of means and measures currently employed by the mining industry, Government agencies, and others to dispose of and utilize such solid wastes and to prevent or substantially mitigate such adverse effects. Such study shall include an analysis of—

"(1) the sources and volume of discarded material generated per year from mining;

"(2) present disposal practices;

"(3) potential dangers to human health and the environment from surface runoff of leachate and air pollution by dust;

"(4) alternatives to current disposal methods;

"(5) the cost of those alternatives in terms of the impact on mine product costs; and

"(6) potential for use of discarded material as a secondary source of the mine product.

Not later than thirty-six months after the date of the enactment of the Solid Waste Disposal Act Amendments of 1980 the Administrator shall publish a report of such study and shall include appropriate findings and recommendations for Federal and non-Federal actions concerning such effects. Such report shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

"(g) SLUDGE.—The Administrator shall undertake a comprehensive study and publish a report on sludge. Such study shall include an analysis of—

"(1) what types of solid waste (including but not limited to sewage and pollution treatment residues and other residues from industrial operations such as extraction of oil from shale, liquefaction and gasification of coal and coal slurry pipeline operations) shall be classified as sludge;

"(2) the effects of air and water pollution legislation on the creation of large volumes of sludge;

"(3) the amounts of sludge originating in each State and in each industry producing sludge;

"(4) methods of disposal of such sludge, including the cost, efficiency, and effectiveness of such methods;

"(5) alternative methods for the use of sludge, including agricultural applications of sludge and energy recovery from sludge; and

"(6) methods to reclaim areas which have been used for the disposal of sludge or which have been damaged by sludge.

"(h) TIRES.—The Administrator shall undertake a study and publish a report respecting discarded motor vehicle tires which shall include an analysis of the problems involved in the collection, recovery of resources including energy, and use of such tires.

"(i) RESOURCE RECOVERY FACILITIES.—The Administrator shall conduct research and report on the economics of, and impediments, to the effective functioning of resource recovery facilities.

"(j) RESOURCE CONSERVATION COMMITTEE.—

"(1) The Administrator shall serve as Chairman of a Committee composed of himself, the Secretary of Commerce, the Secretary of Labor, the Chairman of the Council on Environmental Quality, the Secretary of Treasury, the Secretary of the Interior, the Secretary of Energy, the Chairman of the Council of Economic Advisors, and a representative of the Office of Management and Budget, which shall conduct a full and complete investigation and study of all aspects of the economic, social, and environmental consequences of resource conservation with respect to—

"(A) the appropriateness of recommended incentives and disincentives to foster resource conservation;

"(B) the effect of existing public policies (including subsidies and economic incentives and disincentives, percentage depletion allowances, capital gains treatment and other tax incentives and disincentives) upon resource conservation, and the likely effect of the modification or elimination of such incentives and disincentives upon resource conservation;

"(C) the appropriateness and feasibility of restricting the manufacture or use of categories of consumer products as a resource conservation strategy;

"(D) the appropriateness and feasibility of employing as a resource conservation strategy the imposition of solid waste management charges on consumer products, which charges would reflect the costs of solid waste management services, litter pickup, the value of recoverable components of such product, final disposal, and any social value associated with the nonrecycling or uncontrolled disposal of such product; and

"(E) the need for further research, development, and demonstration in the area of resource conservation.

"(2) The study required in paragraph (1)(D) may include pilot scale projects, and shall consider and evaluate alternative strategies with respect to—

"(A) the product categories on which such charges would be imposed;

"(B) the appropriate state in the production of such consumer product at which to levy such charge;

"(C) appropriate criteria for establishing such charges for each consumer product category;

"(D) methods for the adjustment of such charges to reflect actions such as recycling which would reduce the overall quantities of solid waste requiring disposal; and

"(E) procedures for amending, modifying, or revising such charges to reflect changing conditions.

"(3) The design for the study required in paragraph (1) of this subsection shall include timetables for the completion of the study. A preliminary report putting forth the study design shall be sent to the President and the Congress within six months following enactment of this section and followup reports shall be sent six months thereafter. Each recommendation resulting from the study shall include at least two alternatives to the proposed recommendation.

"(4) The results of such investigation and study, including recommendations, shall be reported to the President and the Congress not later than two years after enactment of this subsection.

"(5) There are authorized to be appropriated not to exceed \$2,000,000 to carry out this subsection.

"(k) AIRPORT LANDFILLS.—The Administrator shall undertake a comprehensive study and analysis of and publish a report on systems to alleviate the hazards to aviation from birds congregating and feeding on landfills in the vicinity of airports.

"(l) COMPLETION OF RESEARCH AND STUDIES.—The Administrator shall complete the research and studies, and submit the reports, required under subsection (b), (c), (d), (e), (f), (g), and (k) not later than October 1, 1978. The Administrator shall complete the research and studies, and submit the reports, required under subsections (a), (h), and (i) not later than October 1, 1979. Upon completion, each study specified in subsections (a) through (k) of this section, the Administrator shall prepare a plan for research, development, and demonstration respecting the findings of the study and shall submit any legislative recommendations resulting from such study to appropriate committees of Congress.

"(m) DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTES ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT, OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.—

"(1) The Administrator shall conduct a detailed and comprehensive study and submit a report on the adverse effects, if any, of drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy on human health and the environment, including, but not limited to, the effects of such wastes on humans, water, air, health, welfare, and natural resources and on the adequacy of means and measures currently employed by the oil and gas and geothermal drilling and production industry, Government agencies, and others to dispose of and utilize such wastes and to prevent or substantially mitigate such adverse effects. Such study shall include an analysis of—

"(A) the sources and volume of discarded material generated per year from such wastes;

"(B) present disposal practices;

"(C) potential danger to human health and the environment from the surface runoff or leachate;

"(D) documented cases which prove or have caused danger to human health and the environment from surface runoff or leachate;

"(E) alternatives to current disposal methods;

"(F) the cost of such alternatives; and

"(G) the impact of those alternatives on the exploration for, and development and production of, crude oil and natural gas or geothermal energy.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal agencies concerning such wastes with a view toward avoiding duplication of effort and the need to expedite such study. The Administrator shall publish a report of such study and shall include appropriate findings and recommendations for Federal and non-Federal actions concerning such effects.

"(2) The Administrator shall complete the research and study and submit the report required under paragraph (1) not later than twenty-four months from the date of enactment of the Solid Waste Disposal Act Amendments of 1980. Upon completion of the study, the Administrator shall prepare a summary of the

findings of the study, a plan for research, development, and demonstration respecting the findings of the study, and shall submit the findings and the study, along with any recommendations resulting from such study, to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

"(3) There are authorized to be appropriated not to exceed \$1,000,000 to carry out the provisions of this subsection.

"(n) MATERIALS GENERATED FROM THE COMBUSTION OF COAL AND OTHER FOSSIL FUELS.—The Administrator shall conduct a detailed and comprehensive study and submit a report on the adverse effects on human health and the environment, if any, of the disposal and utilization of fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, and other byproduct materials generated primarily from the combustion of coal or other fossil fuels. Such study shall include an analysis of—

- "(1) the source and volumes of such material generated per year;
- "(2) present disposal and utilization practices;
- "(3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials;
- "(4) documented cases in which danger to human health or the environment from surface runoff or leachate has been proved;
- "(5) alternatives to current disposal methods;
- "(6) the costs of such alternatives;
- "(7) the impact of those alternatives on the use of coal and other natural resources; and
- "(8) The current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such material and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report on such study, which shall include appropriate findings, not later than twenty-four months after the enactment of the Solid Waste Disposal Act Amendments of 1980. Such study and findings shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

"(o) CEMENT KILN DUST WASTE.—The Administrator shall conduct a detailed and comprehensive study of the adverse effects on human health and the environment, if any, of the disposal of cement kiln dust waste. Such study shall include an analysis of—

- "(1) the source and volumes of such materials generated per year;
- "(2) present disposal practices;
- "(3) potential danger, if any, to human health and the environment from the disposal of such materials;
- "(4) documented cases in which danger to human health or the environment has been proved;
- "(5) alternatives to current disposal methods;
- "(6) the costs of such alternatives;
- "(7) the impact of those alternatives on the use of natural resources; and
- "(8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such waste or materials and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report of such study, which shall include appropriate findings, not later than thirty-six months after the date of enactment of the Solid Waste

Disposal Act Amendments of 1980. Such report shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

"(p) **MATERIALS GENERATED FROM THE EXTRACTION, BENEFICIATION, AND PROCESSING OF ORES AND MINERALS, INCLUDING PHOSPHATE ROCK AND OVERBURDEN FROM URANIUM MINING.**—The Administrator shall conduct a detailed and comprehensive study on the adverse effects on human health and the environment, if any, of the disposal and utilization of solid waste from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from uranium mining. Such study shall be conducted in conjunction with the study of mining wastes required by subsection (f) of this section and shall include an analysis of—

- "(1) the source and volumes of such materials generated per year;
- "(2) present disposal and utilization practices;
- "(3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials;
- "(4) documented cases in which danger to human health or the environment has been proved;
- "(5) alternatives to current disposal methods;
- "(6) the costs of such alternatives;
- "(7) the impact of those alternatives on the use of phosphate rock and uranium ore, and other natural resources; and
- "(8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such waste or materials and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. The Administrator shall publish a report of such study, which shall include appropriate findings, in conjunction with the publication of the report of the study of mining wastes required to be conducted under subsection (f) of this section. Such report and findings shall be submitted to the Committee on Environment and Public Works of the United States Senate and the Committee on Interstate and Foreign Commerce of the United States House of Representatives.

"(q) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated not to exceed \$8,000,000 for the fiscal years 1978 and 1979 to carry out this section other than subsection (j).

"(r) **MINIMIZATION OF HAZARDOUS WASTE.**—The Administrator shall compile, and not later than October 1, 1986, submit to the Congress, a report on the feasibility and desirability of establishing standards of performance or of taking other additional actions under this Act to require the generators of hazardous waste to reduce the volume or quantity and toxicity of the hazardous waste they generate, and of establishing with respect to hazardous wastes required management practices or other requirements to assure such wastes are managed in ways that minimize present and future risks to human health and the environment. Such report shall include any recommendations for legislative changes which the Administrator determines are feasible and desirable to implement the national policy established by section 1003."

"(s) **EXTENDING LANDFILL LIFE AND REUSING LANDFILLED AREAS.**—The Administrator shall conduct detailed, comprehensive studies of methods to extend the useful life of sanitary landfills and to better use sites in which filled or closed landfills are located. Such studies shall address—

- "(1) methods to reduce the volume of materials before placement in landfills;
- "(2) more efficient systems for depositing waste in landfills;

(3) methods to enhance the rate of decomposition of solid waste in landfills, in a safe and environmentally acceptable manner;

"(4) methane production from closed landfill units;

"(5) innovative uses of closed landfill sites, including use for energy production such as solar or wind energy and use for metals recovery;

"(6) potential for use of sewage treatment sludge in reclaiming landfilled areas; and

"(7) methods to coordinate use of a landfill owned by one municipality by nearby municipalities, and to establish equitable rates for such use, taking into account the need to provide future landfill capacity to replace that so used.

The Administrator is authorized to conduct demonstrations in the areas of study provided in this subsection. The Administrator shall periodically report on the results of such studies, with the first such report not later than October 1, 1986. In carrying out this subsection, the Administrator need not duplicate other studies which have been completed and may rely upon information which has previously been compiled.

"COORDINATION, COLLECTION, AND DISSEMINATION OF INFORMATION

"Sec. 8003. (a) INFORMATION.—The Administrator shall develop, collect, evaluate, and coordinate information on—

"(1) methods and costs of the collection of solid waste;

"(2) solid waste management practices, including data on the different management methods and the cost, operation, and maintenance of such methods;

"(3) the amounts and percentages of resources (including energy) that can be recovered from solid waste by use of various solid waste management practices and various technologies;

"(4) methods available to reduce the amount of solid waste that is generated;

"(5) existing and developing technologies for the recovery of energy or materials from solid waste and the costs, reliability, and risks associated with such technologies;

"(6) hazardous solid waste, including incidents of damage resulting from the disposal of hazardous solid wastes; inherently and potentially hazardous solid wastes; methods of neutralizing or properly disposing of hazardous solid wastes; facilities that properly dispose of hazardous wastes;

"(7) methods of financing resource recovery facilities or, sanitary landfills, or hazardous solid waste treatment facilities, whichever is appropriate for the entity developing such facility or landfill (taking into account the amount of solid waste reasonably expected to be available to such entity);

"(8) the availability of markets for the purchase of resources, either materials or energy, recovered from solid waste; and

"(9) research and development projects respecting solid waste management.

"(b) LIBRARY.—

(1) The Administrator shall establish and maintain a central reference library for

(A) the materials collected pursuant to subsection (a) of this section and

(B) the actual performance and cost effectiveness records and other data and information with respect to—

"(i) the various methods of energy and resource recovery from solid waste,

"(ii) the various systems and means of resource conservation,

"(iii) the various systems and technologies for collection, transport, storage, treatment, and final disposition of solid waste, and

"(iv) other aspects of solid waste and hazardous solid waste management.

Such central reference library shall also contain, but not be limited to, the model codes and model accounting systems developed under this section, the information collected under subsection (d), and, subject to any applicable requirements of confidentiality, information respecting any aspect of solid waste provided by officers and employees of the Environmental Protection Agency which has been acquired by them in the conduct of their functions under this Act and which may be of value to Federal, State, and local authorities and other persons.

"(2) Information in the central reference library shall, to the extent practicable, be collated, analyzed, verified, and published and shall be made available to State and local governments and other persons at reasonable times and subject to such reasonable charges as may be necessary to defray expenses of making such information available.

"(c) MODEL ACCOUNTING SYSTEM.—In order to assist State and local governments in determining the cost and revenues associated with the collection and disposal of solid waste and with resource recovery operations, the Administrator shall develop and publish a recommended model cost and revenue accounting system applicable to the solid waste management functions of State and local governments. Such system shall be in accordance with generally accepted accounting principles. The Administrator shall periodically, but not less frequently than once every five years, review such accounting system and revise it as necessary.

"(d) MODEL CODES.—The Administrator is authorized, in cooperation with appropriate State and local agencies, to recommend model codes, ordinances, and statutes, providing for sound solid waste management.

"(e) INFORMATION PROGRAMS.—

"(1) The Administrator shall implement a program for the rapid dissemination of information on solid waste management, hazardous waste management, resource conservation, and methods of resource recovery from solid waste, including the results of any relevant research, investigations, experiments, surveys, studies, or other information which may be useful in the implementation of new or improved solid waste management practices and methods and information on any other technical, managerial, financial, or market aspect of resource conservation and recovery facilities.

"(2) The Administrator shall develop and implement educational programs to promote citizen understanding of the need for environmentally sound solid waste management practices.

"(f) COORDINATION.—In collecting and disseminating information under this section, the Administrator shall coordinate his actions and cooperate to the maximum extent possible with State and local authorities.

"(g) SPECIAL RESTRICTION.—Upon request, the full range of alternative technologies, programs or processes deemed feasible to meet the resource recovery or resource conservation needs of a jurisdiction shall be described in such a manner as to provide a sufficient evaluative basis from which the jurisdiction can make its decisions. but no officer or employee of the Environmental Protection Agency shall, in an official capacity, lobby for or otherwise represent an agency position in favor of resource recovery or resource conservation, as a policy alternative for adoption into ordinances, codes, regulations, or law by any State or political subdivision thereof.

"FULL-SCALE DEMONSTRATION FACILITIES

"Sec. 8004. (a) **AUTHORITY.**—The Administrator may enter into contracts with public agencies or authorities or private persons for the construction and operation of a full-scale demonstration facility under this Act, or provide financial assistance in the form of grants to a full-scale demonstration facility under this Act only if the Administrator finds that—

"(1) such facility or proposed facility will demonstrate at full scale a new or significantly improved technology or process, a practical and significant improvement in solid waste management practice, or the technological feasibility and cost effectiveness of an existing, but unproven technology, process, or practice, and will not duplicate any other Federal, State, local, or commercial facility which has been constructed or with respect to which construction has begun (determined as of the date action is taken by the Administrator under this Act),

"(2) such contract or assistance meets the requirements of section 8001 and meets other applicable requirements of the Act,

"(3) such facility will be able to comply with the guidelines published under section 1008 and with other laws and regulations for the protection of health and the environment,

"(4) in the case of a contract for construction or operation, such facility is not likely to be constructed or operated by State, local, or private persons or in the case of an application for financial assistance, such facility is not likely to receive adequate financial assistance from other sources, and

"(5) any Federal interest in, or assistance to, such facility will be disposed of or terminated, with appropriate compensation, within such period of time as may be necessary to carry out the basic objectives of this Act.

"(b) **TIME LIMITATION.**—No obligation may be made by the Administrator for financial assistance under this subtitle for any full-scale demonstration facility after the date ten years after the enactment of this section. No expenditure of funds for any such full-scale demonstration facility under this subtitle may be made by the Administrator after the date fourteen years after such date of enactment.

"(c) **COST SHARING.**—

"(1) Wherever practicable, in constructing, operating, or providing financial assistance under this subtitle to a full-scale demonstration facility, the Administrator shall endeavor to enter into agreements and make other arrangements for maximum practicable cost sharing with other Federal, State, and local agencies, private persons, or any combination thereof.

"(2) The Administrator shall enter into arrangements, wherever practicable and desirable, to provide monitoring of full-scale solid waste facilities (whether or not constructed or operated under this Act) for purposes of obtaining information concerning the performance, and other aspects, of such facilities. Where the Administrator provides only monitoring and evaluation instruments or personnel (or both) or funds for such instruments or personnel and provides no other financial assistance to a facility, notwithstanding section 8001(c)(3), title to any invention made or conceived of in the course of developing, constructing, or operating such facility shall not be required to vest in the United States and patents respecting such invention shall not be required to be issued to the United States.

"(d) **PROHIBITION.**—After the date of enactment of this section, the Administrator shall not construct or operate any full-scale facility (except by contract with public agencies or authorities or private persons).

"SPECIAL STUDY AND DEMONSTRATION PROJECTS ON RECOVERY OF USEFUL ENERGY AND MATERIALS

"Sec. 8005. (a) STUDIES.—The Administrator shall conduct studies and develop recommendations for administrative or legislative action on—

"(1) means of recovering materials and energy from solid waste, recommended uses of such materials and energy for national or international welfare, including identification of potential markets for such recovered resources, the impact of distribution of such resources on existing markets, and potentials for energy conservation through resource conservation and resource recovery;

"(2) actions to reduce waste generation which have been taken voluntarily or in response to governmental action, and those which practically could be taken in the future, and the economic, social, and environmental consequences of such actions;

"(3) methods of collection, separation, and containerization which will encourage efficient utilization of facilities and contribute to more effective programs of reduction, reuse, or disposal of wastes;

"(4) the use of Federal procurement to develop market demand for recovered resources;

"(5) recommended incentives (including Federal grants, loans and other assistance) and disincentives to accelerate the reclamation or recycling of materials from solid wastes, with special emphasis on motor vehicle hulks;

"(6) the effect of existing public policies, including subsidies and economic incentives and disincentives, percentage depletion allowances, capital gains treatment and other tax incentives and disincentives, upon the recycling and reuse of materials, and the likely effect of the modification or elimination of such incentives and disincentives upon the reuse, recycling and conservation of such materials;

"(7) the necessity and method of imposing disposal or other charges on packaging, containers, vehicles, and other manufactured goods, which charges would reflect the cost of final disposal, the value of recoverable components of the item, and any social costs associated with nonrecycling or uncontrolled disposal of such items; and

"(8) the legal constraints and institutional barriers to the acquisition of land needed for solid waste management, including land for facilities and disposal sites;

"(9) in consultation with the Secretary of Agriculture, agricultural waste management problems and practices, the extent of reuse and recovery of resources in such wastes, the prospects for improvement, Federal, State, and local regulations governing such practices, and the economic, social, and environmental consequences of such practices; and

"(10) in consultation with the Secretary of the Interior, mining waste management problems, and practices, including an assessment of existing authorities, technologies, and economics, and the environmental and public health consequences of such practices.

"(b) DEMONSTRATION.—The Administrator is also authorized to carry out demonstration projects to test and demonstrate methods and techniques developed pursuant to subsection (a).

"(c) APPLICATION OF OTHER SECTIONS.—Section 8001(b) and (c) shall be applicable to investigations, studies, and projects carried out under this section.

**"GRANTS FOR RESOURCE RECOVERY SYSTEMS AND IMPROVED
SOLID WASTE DISPOSAL FACILITIES**

"Sec. 8006. AUTHORITY.— The Administrator is authorized to make grants pursuant to this section to any State, municipal, or interstate or intermunicipal agency for the demonstration of resource recovery systems or for the construction of new or improved solid waste disposal facilities.

"(b) CONDITIONS.—

"(1) Any grant under this section for the demonstration of a resource recovery system may be made only if it (A) is consistent with any plans which meet the requirements of subtitle D of this Act; (B) is consistent with the guidelines recommended pursuant to section 1008 of this Act; (C) is designed to provide area-wide resource recovery systems consistent with the purposes of this Act, as determined by the Administrator, pursuant to regulations promulgated under subsection (d) of this section; and (D) provides an equitable system for distributing the costs associated with construction, operation, and maintenance of any resource recovery system among the users of such system.

"(2) The Federal share for any project to which paragraph (1) applies shall not be more than 75 percent.

"(c) LIMITATIONS.—

"(1) A grant under this section for the construction of a new or improved solid waste disposal facility may be made only if—

"(A) a State or interstate plan for solid waste disposal has been adopted which applies to the area involved, and the facility to be constructed (i) is consistent with such plan, (ii) is included in a comprehensive plan for the area involved which is satisfactory to the Administrator for the purposes of this Act, and (iii) is consistent with the guidelines recommended under section 1008, and

"(B) the project advances the state of the art by applying new and improved techniques in reducing the environmental impact of solid waste disposal, in achieving recovery of energy or resources, or in recycling useful materials.

"(2) The Federal share for any project to which paragraph (1) applies shall not be more than 50 percent in the case of a project serving an area which includes only one municipality, and not more than 75 percent in any other case.

"(d) REGULATIONS.—

"(1) The Administrator shall promulgate regulations establishing a procedure for awarding grants under this section which—

"(A) provides that projects will be carried out in communities of varying sizes, under such conditions as will assist in solving the community waste problems of urban-industrial centers, metropolitan regions, and rural areas, under representative geographic and environmental conditions; and

"(B) provides deadlines for submission of, and action on, grant requests.

"(2) In taking action on applications for grants under this section, consideration shall be given by the Administrator (A) to the public benefits to be derived by the construction and the propriety of Federal aid in making such grant; (B) to the extent applicable, to the economic and commercial viability of the project (including contractual arrangements with the private sector to market any resources recovered); (C) to the potential of such project for general application to community solid waste disposal problems; and (D) to the use by the applicant of comprehensive regional or metropolitan area planning.

"(e) ADDITIONAL LIMITATIONS.—A grant under this section—

: "(1) may be made only in the amount of the Federal share of (A) the estimated total design and construction costs, plus (B) in the case of a grant to which subsection (b)(1) applies, the first-year operation and maintenance costs;

"(2) may not be provided for land acquisition or (except as otherwise provided in paragraph (1) (B)) for operating or maintenance costs;

: "(3) may not be made until the applicant has made provision satisfactory to the Administrator for proper and efficient operation and maintenance of the project (subject to paragraph (1) (B)); and

"(4) may be made subject to such conditions and requirements, in addition to those provided in this section, as the Administrator may require to properly carry out his functions pursuant to this Act.

For purposes of paragraph (1), the non-Federal share may be in any form, including, but not limited to, lands or interests therein needed for the project or personal property or services, the value of which shall be determined by the Administrator.

"(f) SINGLE STATE.—

(1) Not more than 15 percent of the total of funds authorized to be appropriated for any fiscal year to carry out this section shall be granted under this section for projects in any one State.

"(2) The Administrator shall prescribe by regulation the manner in which this subsection shall apply to a grant under this section for a project in an area which includes all or part of more than one State.

"AUTHORIZATION OF APPROPRIATIONS

"Sec. 8007. There are authorized to be appropriated not to exceed \$35,000,000 for the fiscal year 1978 to carry out the purposes of this subtitle (except for section 8002).

SUBTITLE I—REGULATION OF UNDERGROUND STORAGE TANKS

"DEFINITIONS AND EXEMPTIONS

"Sec. 9001. For the purposes of this subtitle—

"(1) The term 'underground storage tank' means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. Such term does not include any—

"(A) farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes.

"(B) tank used for storing heating oil for consumptive use on the premises where stored.

"(C) septic tank,

"(D) pipeline facility (including gathering lines) regulated under—

"(i) the Natural Gas Pipeline Safety Act of 1968, (49 U.S.C.App. 1671, et seq.),

"(ii) the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C.App. 2001, et seq.), or

"(iii) which is an intrastate pipeline facility regulated under State laws comparable to the provisions of law referred to in clause (i) or (ii) of this subparagraph;

"(E) surface impoundment, pit, pond, or lagoon,

"(F) storm water or waste water collection system.

"(G) flow-through process tank;

"(H) liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

"(I) storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term 'underground storage tank' shall not include any pipes connected to any tank which is described in subparagraphs (A) through (I).

"(2) The term 'regulated substance' means—

"(A) any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and

"(B) petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute);

"(3) The term 'owner' means—

"(A) in the case of an underground storage tank in use on the date of enactment of the Hazardous and Solid Waste Amendments of 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

"(B) in the case of any underground storage tank in use before the date of enactment of the Hazardous and Solid Waste Amendments of 1984, but no longer in use on the date of enactment of such Amendments, any person who owned such tank immediately before the discontinuation of its use.

"(4) The term 'operator' means any person in control of, or having responsibility for, the daily operation of the underground storage tank.

"(5) The term 'release' means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank into ground water, surface water or subsurface soils.

"(6) The term 'person' has the same meaning as provided in section 1004(15), except that such term includes a consortium, a joint venture, and a commercial entity, and the United States Government.

"(7) The term 'nonoperational storage tank' means any underground storage tank in which regulated substances will not be deposited or from which regulated substances will not be dispensed after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

"NOTIFICATION

"Sec. 9002. (a) UNDERGROUND STORAGE TANKS.—

"(1) Within 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, each owner of an underground storage tank shall notify the State or local agency or department designated pursuant to subsection (b)(1) of the existence of such tank, specifying the age, size, type, location, and uses of such tank.

"(2)(A) For each underground storage tank taken out of operation after January 1, 1974, the owner of such tank shall, within 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, notify the State or local agency, or department designated pursuant to subsection (b)(1) of the existence of such tanks (unless the owner knows the tank subsequently was removed from the ground). The owner of a tank taken out of operation on or before January 1, 1974, shall not be required to notify the State or local agency under this subsection.

"(B) Notice under subparagraph (A) shall specify, to the extent known to the owner—

"(i) the date the tank was taken out of operation;

"(ii) the age of the tank on the date taken out of operation,

"(iii) the size, type and location of the tank, and

"(iv) the type and quantity of substances left stored in such tank on the date taken out of operation.

"(3) Any owner which brings into use an underground storage tank after the initial notification period specified under paragraph (1), shall notify the designated State or local agency or department within 30 days of the existence of such tank, specifying the age, size, type, location and uses of such tank.

"(4) Paragraphs (1) through (3) of this subsection shall not apply to tanks for which notice was given pursuant to section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

"(5) Beginning 30 days after the Administrator prescribes the form of notice pursuant to subsection (b)(2) and for 18 months thereafter, any person who deposits regulated substances in an underground storage tank shall reasonably notify the owner or operator of such tank of the owner's notification requirements pursuant to this subsection.

"(6) Beginning 30 days after the Administrator issues new tank performance standards pursuant to section 9003(3) of this subtitle, any person who sells a tank intended to be used as an underground storage tank shall notify the purchaser of such tank of the owner's notification requirements pursuant to this subsection.

"(b) AGENCY DESIGNATION.—

"(1) Within 180 days after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Governors of each State shall designate the appropriate State agency or department or local agencies or departments to receive the notifications under subsection (a)(1), (2), or (3).

"(2) Within 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator, in consultation with State and local officials designated pursuant to subsection (b)(1), and after notice and opportunity for public comment, shall prescribe the form of the notice and the information to be included in the notifications under subsection (a)(1), (2), or (3). In prescribing the form of such notice, the Administrator shall take into account the effect on small businesses and other owners and operators.

**"RELEASE DETECTION, PREVENTION, AND
CORRECTION REGULATIONS**

"Sec. 9003. (a) REGULATIONS.—The Administrator, after notice and opportunity for public comment, and at least 3 months before the effective dates specified in subsection (f), shall promulgate release detection, prevention, and correction regulations applicable to all owners and operators of underground storage tanks, as may be necessary to protect human health and the environment.

"(b) DISTINCTIONS IN REGULATIONS.—In promulgating regulations under this section, the Administrator may distinguish between types, classes, and ages of underground storage tanks. In making such distinctions, the Administrator may take into consideration factors, including, but not limited to: location of the tanks, soil and climate conditions, uses of the tanks, history of maintenance, age of the tanks, current industry recommended practice: national consensus codes, hydrogeology, water table, size of the tanks, quantity of regulated substances periodically deposited in or dispensed from the tank, the technical capability of the owners and operators, and the compatibility of the regulated substance and the materials of which the tank is fabricated.

"(c) REQUIREMENTS.—The regulations promulgated pursuant to this section shall include, but need not be limited to, the following requirements respecting all underground storage tanks—

"(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designated to identify releases in a manner consistent with the protection of human health and the environment.

"(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing or comparable system;

"(3) requirements for reporting of releases and corrective action taken in response to a release from an underground storage tank;

"(4) requirements for taking corrective action in response to a release from an underground storage tank; and

"(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment.

"(d) FINANCIAL RESPONSIBILITY.—

"(1) As he deems necessary or desirable, the Administrator shall promulgate regulations containing requirements for maintaining evidence of financial responsibility as he deems necessary and desirable for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank.

"(2) Financial responsibility required by this subsection may be establishing in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this subsection, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

"(3) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in any State court of the Federal Courts cannot be obtained over an owner or operator likely to be solvent at the time of judgement, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

"(4) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other state or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

"(5) For the purpose of this subsection, the term 'guarantor' means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

"(e) NEW TANK PERFORMANCE STANDARDS.—The Administrator shall, not later than 3 months prior to the effective date specified in subsection (f), issue performance standards for underground storage tanks brought into use on or after the effective date of such standards. The performance standards for new underground storage tanks shall include, but need not be limited to, design, construction, installation, release detection, and compatibility standards.

"(f) EFFECTIVE DATES.—

"(1) Regulations issued pursuant to subsection (c) and (d) of this section, and standards issued pursuant to subsection (e) of this section, for underground storage tanks containing regulated substances defined in section 9001(2)(B) (petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure) shall be effective not later than 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(2) Standards issued pursuant to subsection (e) of this section (entitled 'New Tank Performance Standards') for underground storage tanks containing regulated substances defined in section 9001(2)(A) shall be effective not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(3) Regulations issued pursuant to subsection (c) of this section (entitled 'Requirements') and standards issued pursuant to subsection (d) of this section (entitled 'Financial Responsibility') for underground storage tanks containing regulated substances defined in section 9001(2)(A) shall be effective not later than 48 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(g) INTERIM PROHIBITION.—

"(1) Until the effective date of the standards promulgated by the Administrator under subsection (e) and after 180 days after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, no person may install an underground storage tank for the purpose of storing regulated substances unless such tank (whether of single or double wall construction)—

"(A) will prevent releases due to corrosion or structural failure for the operational life of the tank;

"(B) is cathodically protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed in a manner to prevent the release of threatened release of any stored substance; and

"(C) the material used in the construction or lining of the tank is compatible with the substance to be stored.

"(2) Notwithstanding paragraph (1), if soil tests conducted in accordance with ASTM Standard G57-78, or another standard approved by the Administrator, show that soil resistivity in an installation location is 12,000 ohm/cm or more (unless a more stringent standard is prescribed by the Administrator by rule), a storage tank without corrosion protection may be installed in that location during the period referred to in paragraph (1).

"APPROVAL OF STATE PROGRAMS

"Sec. 9004. (a) ELEMENT OF STATE PROGRAM.—

"(1) Beginning 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, any State may, submit an underground storage tank release detection, prevention, and correction program for review and approval by the Administrator. The program may cover tanks used to store regulated substances referred to in 9001(2)(A) or (B) or both.

"(2) A State program may be approved by the Administrator under this section only if the State demonstrates that the State program includes the following requirements and standards and provided for adequate enforcement of compliance with such requirements and standards—

"(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designed to identify releases in a manner consistent with the protection of human health and the environment;

"(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing system;

"(3) requirements for reporting of any releases and corrective action taken in response to a release from an underground storage tank;

"(4) requirements for taking corrective action in response to a release from an underground storage tank;

"(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment;

"(6) requirements for maintaining evidence of financial responsibility for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank;

"(7) standards of performance for new underground storage tanks; and

"(8) requirements—

"(A) for notifying the appropriate State agency or department (or local agency or department) designated according to section 9002(b)(1) of the existence of any operational or non-operational underground storage tank; and

"(B) for providing the information required on the form issued pursuant to section 9002(b)(2).

"(b) FEDERAL STANDARDS.—

(1) A state program submitted under this section may be approved only if the requirements under paragraphs (1) through (7) of subsection (a) are no less stringent than the corresponding requirements standards promulgated by the Administrator pursuant to section 9003(a).

"(2)(A) A State program may be approved without regard to whether or not the requirements referred to in paragraphs (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the 1-year period commencing on the date of promulgation of regulations under section 9003(a) if State regulatory action but no State legislative action is required in order to adopt a State program.

"(B) If such State legislative action is required, the State program may be approved without regard to whether or not the requirements referred to in paragraph (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the 2-year period commencing on the date of promulgation of regulations under section 9003(a) (and during an additional 1-year period after such legislative action if regulations are required to be promulgated by the State pursuant to such legislative action).

"(c) FINAL RESPONSIBILITY.—

"(1) Corrective action and compensation programs financed by fees on tank owners and operators and administered by State or local agencies or departments may be submitted for approval under subsection (a)(6) as evidence of financial responsibility.

"(2) Financial responsibility required by this subsection may be established in accordance with regulations promulgated by the Administrator by any one, or any combination of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this subsection, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

"(3) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in any State court of the Federal Courts cannot be obtained over an owner or operator likely to be solvent at the time of judgement, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and

defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

"(4) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

"(5) For the purpose of this subsection, the term 'guarantor' means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

"(d) EPA DETERMINATION.—

"(1) Within 180 days of the date of receipt of a proposed State program, the Administrator shall, after notice and opportunity for public comment, make a determination whether the State's program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section.

"(2) If the Administrator determines that a State program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section, he shall approve the State program in lieu of the Federal program and the State shall have primary enforcement responsibility with respect to the requirements of its program.

"(e) **WITHDRAWAL OF AUTHORIZATION.**—Whenever the Administrator determines after public hearing that a State is not administering and enforcing a program authorized under this subtitle in accordance with the provisions of this section, he shall so notify the State. If appropriate action is not taken within a reasonable time, not to exceed 120 days after such notification, the Administrator shall withdraw approval of such program and reestablish the Federal program pursuant to this subtitle.

"INSPECTIONS, MONITORING, AND TESTING

"Sec. 9005. (a) FURNISHING INFORMATION.—For the purposes of developing or assisting in the development of any regulations, conducting any study, or enforcing the provisions of this subtitle, any owner or operator of an underground storage tank (or any tank subject to study under section 9009 that is used for storing regulated substances) shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee, or representative of a State with an approved program, furnish information relating to such tanks, their associated equipment, their contents, conduct monitoring or testing, and permit such officer at all reasonable times to have access to, and to copy all records relating to such tanks. For the purposes of developing or assisting in the development of any regulation, conducting any study, or enforcing, employee, or representatives are authorized—

"(1) to enter at reasonable times any establishment or other place where an underground storage tank is located;

"(2) to inspect and obtain samples from any person of any regulated substances contained in such tank; and

"(3) to conduct monitoring or testing of the tanks, associated equipment, contents, or surrounding soils, air, surface water or ground water.

Each such inspection shall be commenced and completed with reasonable promptness.

"(b) CONFIDENTIALITY.—

(1) Any records, reports, or information obtained from any persons under this section shall be available to the public, except that upon a showing satisfactory to the Administrator (or the State, as the case may be) by any person that records, reports, or information, or a particular part thereof, to which the Administrator (or the State, as the case may be) or any officer, employee, or representative thereof has access under this section if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, such information or particular portion thereof shall be considered confidential in accordance with the record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the this Act, or when relevant in any proceeding under this Act.

"(2) Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

"(3) In submitting data under this subtitle, a person required to provide such data may—

"(A) designate the data which such person believes is subtitled to protection under this subsection, and

"(B) submit such designated data separately from other data submitted under this subtitle.

A designation under this paragraph shall be made in writing and in such manner as the Administrator may prescribe.

"(4) Notwithstanding any limitation contained in this section or any other provision of law, all information reported to, or otherwise obtained, by the Administrator (or by representative of the Administrator) under this Act shall be made available, upon written request of any duly authorized committee of the Congress, to such committee (including records, reports, or information obtained by representatives of the Environmental Protection Agency).

"FEDERAL ENFORCEMENT

"Sec. 9006. (a) COMPLIANCE ORDERS.—

"(1) Except as provided in paragraph (2), whenever on the basis of any information, the Administrator determines that any person is in violation of any requirement of this subtitle, the Administrator may issue an order requiring compliance within a reasonable specified time period or the Administrator may commence a civil action in the United States district court in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

"(2) In the case of a violation of any requirement of this subtitle where such violation occurs in a State with a program approved under section 9004, the Administrator shall give notice to the State in which such violation has occurred prior to issuing an order or commencing a civil action under this section.

"(3) If a violation fails to comply with an order under this subsection within the time specified in the order, he shall be liable for a civil penalty of not more than \$25,000 for each day of continued noncompliance.

"(b) PROCEDURE.—Any order issued under this section shall become final unless, no later than 30 days after the order is served, the person or persons named therein request a public hearing. Upon such request the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.

"(c) CONTENTS OF ORDER.—Any order issued under this section shall state with reasonable specificity the nature of the violation, specify a reasonable time for compliance, and assess a penalty, if any, which the Administrator determines is reasonable taking into account the seriousness of the violation and any good faith efforts to comply with the applicable requirements.

"(d) CIVIL PENALTIES.—

"(1) Any owner who knowingly fails to notify or submits false information pursuant to section 9002(a) shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or false information is submitted.

"(2) Any owner or operator of an underground storage tank who fails to comply with—

"(A) any requirement or standard promulgated by the Administrator under section 9003;

"(B) any requirement of standard of a State program approved pursuant to section 9004, or

"(C) the provisions of section 9003(g) (entitled "Interim Prohibition")

shall be subject to a civil penalty not to exceed \$10,000 for each tank for each day of violation.

"FEDERAL FACILITIES

Sec. 9007. (a) APPLICATION OF SUBTITLE—Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any underground storage tank shall be subject to and comply with all Federal, State, interstate, and local requirements, applicable to such tank, both substantive and procedural, in the same manner, and to the same extent, as any other person is subject to such requirements, including payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief.

"(b) PRESIDENTIAL EXEMPTION.—The President may exempt any underground storage tanks of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriations. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

"STATE AUTHORITY

"Sec. 9008. Nothing in this subtitle shall preclude or deny any right of any State or political subdivision thereof to adopt or enforce any regulation, requirement or standard of performance respecting underground storage tanks that is more stringent than a regulation, requirement, or standard of performance in effect under this subtitle.

"STUDY OF UNDERGROUND STORAGE TANKS

"Sec. 9009. (a) PETROLEUM TANKS.—Not later than 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of underground storage tanks used for the storage of regulated substances defined in section 9001(2)(B).

"(b) OTHER TANKS.—Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of all other underground storage tanks.

"(c) ELEMENTS OF STUDIES.—The studies under subsections (a) and (b) shall include an assessment of the ages, types (including methods of manufacture, coatings, protection system, the compatibility of the construction materials and the installation methods) and locations (including the climate of the locations) of such tanks; soil conditions, water tables, and the hydrogeology of tank locations; the relationship between the foregoing factors and likelihood of releases from underground storage tanks; the effectiveness and costs of inventory systems, tank testing, and leak detection systems; and such other factors as the Administrator deems appropriate.

"(d) FARM, AND HEATING OIL TANKS.—Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall conduct a study regarding the tanks referred to in section 9001(1)(A) and (B). Such study shall include estimates of the number and location of such tanks and the analysis of the extent to which there may be releases of threatened releases from such tanks into the environment.

"(e) REPORTS.—Upon completion of the studies authorized by this section, the Administrator shall submit reports to the President and to the Congress containing the results of the studies and recommendations respecting whether or not such tanks should be subject to the preceding provisions of this subtitle.

"(f) REIMBURSEMENT.—

(1) If any owner or operator (excepting an agency, department, or instrumentality of the United States Government, a State or a political subdivision thereof) shall incur costs, including the loss of business opportunity, due to the closure or interruption of operation of an underground storage tank solely for the purposes of conducting studies authorized by this section, the Administrator shall provide such person fair and equitable reimbursement for such costs.

"(2) All claims for reimbursement shall be filed with the Administrator not later than 90 days after the closure or interruption which gives rise to the claim.

"(3) Reimbursements made under this section shall be from funds appropriated by the Congress pursuant to the authorization contained in section 2007(g).

"(4) For purposes of judicial review, a determination by the Administrator under this subsection shall be considered final agency action.

"AUTHORIZATION OF APPROPRIATIONS

"Sec. 9010. For authorization of appropriations to carry out this subtitle, see section 2007(g)."

AMENDMENTS FROM PUBLIC LAW 98-45—JULY 12, 1983

ENVIRONMENTAL PROTECTION AGENCY

Salaries and Expenses

For necessary expenses, not otherwise provided for, including hire of passenger motor vehicles; hire, maintenance, and operation of aircraft; uniforms, or allowances therefor, as authorized by 5 U.S.C. 5901-5902; services as authorized by 5 U.S.C. 3109, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18; purchase of reprints; library memberships in societies or associations which issue publications to members only or at a price to members lower than to subscribers who are not members; and not to exceed \$3,000 for official reception and representation expenses; \$574,900,000: PROVIDED, That none of these funds may be expended for purposes of Resource Conservation and Recovery Panels established under section 2003 of the Resource Conservation and Recovery Act, as amended (42 U.S.C. 6913).

Research and Development

For research and development activities, \$142,700,000, to remain available until September 30, 1985.

Abatement, Control, and Compliance

For abatement, control, and compliance activities, \$393,900,000, to remain available until September 30, 1985; PROVIDED, That none of these funds may be expended for purposes of Resource Conservation and Recovery Panels established under section 2003 of the Resource Conservation and Recovery Act, as amended (42 U.S.C. 6913), or for support to State, regional, local and interstate agencies in accordance with subtitle D of the Solid Waste Disposal Act, as amended, other than section 4008(a)(2) or 4009.

SOLID WASTE DISPOSAL ACT AMENDMENTS OF 1980

**Sections that do not amend the Solid Waste Disposal Act
(Resource Conservation and Recovery Act of 1976)**

Section 1. This Act may be cited as the "Solid Waste Disposal Act Amendments of 1980."

Sections 2 through 31 amend the Solid Waste Disposal Act (Resource Conservation and Recovery Act of 1976).

Section 3. [Repealed by PL 96-482]

Section 4. (a) In order to demonstrate effective means of dealing with contamination of public water supplies by leachate from abandoned or other landfills, the Administrator of the Environmental Protection Agency is authorized to provide technical and financial assistance for a research program to control leachate from the Llangollen Landfill in New Castle County, Delaware.

(b) The research program authorized by this section shall be designed by the New Castle County areawide waste treatment management program, in cooperation with the Environmental Protection Agency, to develop methods for controlling leachate contamination from abandoned and other landfills that may be applied at the Llangollen Landfill and other landfills throughout the Nation. Such research program shall investigate all alternative solutions or corrective actions, including—

- (1) hydrogeologic isolation of the landfill combined with the collection and treatment of leachate;
- (2) excavation of the refuse, followed by some type of incineration;
- (3) excavation and transportation of the refuse to another landfill; and
- (4) collection and treatment of contaminated leachate or ground water.

Such research program shall consider the economic, social, and environmental consequences of each such alternative.

(c) The Administrator of the Environmental Protection Agency shall make available personnel of the Agency, including those of the Solid and Hazardous Waste Research Laboratory (Cincinnati, Ohio), and shall arrange for other Federal personnel to be made available, to provide technical assistance and aid in such research. The Administrator may provide up to \$250,000, of the sums appropriated under the Solid Waste Disposal Act, to the New Castle County areawide waste treatment management program to conduct such research, including obtaining consultant services.

(d) In order to prevent further damage to public water supplies during the period of this study, the Administrator of the Environmental Protection Agency shall provide up to \$200,000 in each of fiscal years 1977 and 1978, of the sums appropriated under the Solid Waste Disposal Act for the operating costs of a counterpumping program to contain the leachate from the Llangollen Landfill.

Section 32. (a) ENERGY AND MATERIALS CONSERVATION AND RECOVERY. (a) The Congress finds that—

- (1) significant savings could be realized by conserving materials in order to reduce the volume or quantity of material which ultimately becomes waste;

(2) solid waste contains valuable energy and material resources which can be recovered and used thereby conserving increasingly scarce and expensive fossil fuels and virgin materials;

(3) the recovery of energy and materials contributing to such waste streams, can have the effect of reducing the volume of the municipal waste stream and the burden of disposing of increasing volumes of solid waste;

(4) the technology to conserve resources exists and is commercially feasible to apply;

(5) the technology to recover energy and materials from solid waste is of demonstrated commercial feasibility; and

(6) various communities throughout the nation have different needs and different potentials for conserving resources and for utilizing techniques for the recovery of energy and materials from waste, and Federal assistance in planning and implementing such energy and materials conservation and recovery programs should be available to all communities on an equitable basis in relation to their needs and potential.

Sections 32 (b) through (g) amend the Solid Waste Disposal Act.

Section 33. NATIONAL ADVISORY COMMISSION ON RESOURCE CONSERVATION AND RECOVERY. (a)(1) There is hereby established in the executive branch of the United States the National Advisory Commission on Resource Conservation and Recovery, hereinafter in this section referred to as the "Commission".

(2) The Commission shall be composed of nine members to be appointed by the President. Such members shall be qualified by reason of their education, training, or experience to represent the view of consumer groups, industry associations, and environmental and other groups concerned with resource conservation and recovery and at least two shall be elected or appointed State or local officials. Members shall be appointed for the life of the Commission.

(3) A vacancy in the Commission shall be filled in the manner in which the original appointment was made.

(4) Five members of the Commission shall constitute a quorum for transacting business of the Commission except that a lesser number may hold hearings and conduct information-gathering meetings.

(5) The Chairperson of the Commission shall be designated by the President from among the members.

(6) Upon the expiration of the two-year period beginning on (A) the date when all initial members of the Commission have been appointed or when (B) the date when initial funds become available to carry out this section, whichever is later, the Commission shall transmit to the President, and to each House of the Congress, a final report containing a detailed statement of the findings and conclusions of the Commission, together with such recommendations as it deems advisable.

(7) The Commission shall submit an interim report on February 15, 1982, and the Commission may also submit, for legislative and administrative actions relating to the Solid Waste Disposal Act, other interim reports prior to the submission to its final report.

(8) The Commission shall cease to exist 30 days after the submission of its final report.

(b) The Commission shall—

(1) after consultation with the appropriate Federal agencies, review budgetary priorities relating to resource conservation and recovery, determine to what extent program goals relating to resource conservation and recovery are being realized, and make recommendations concerning the appropriate program balance and priorities.

(2) review any existing or proposed resource conservation and recovery guidelines or regulations;

(3) determine the economic development or savings potential of resource conservation and recovery, including the availability of markets for recovered energy and materials, for economic materials savings through conservation, and make recommendations concerning the utilization of such potential;

(4) identify, and make recommendations addressing, institutional obstacles impeding the development of resource conservation and resource recovery; and

(5) evaluate the status of resource conservation and recovery technology and systems including both materials and energy recovery technologies, recycling methods, and other innovative methods for both conserving energy and materials extractable from solid waste.

The review referred to in paragraph (1) should include but not be limited to an assessment of the effectiveness of the technical assistance panels, the public participation program and other program activities under the Solid Waste Disposal Act.

(c)(1) Members of the Commission while serving on business of the Commission, shall be compensated at a rate not to exceed the rate specified at the time of such service for grade GS-16 of the General Schedule for each day they are engaged in the actual performance of Commission duties, including travel time; and while so serving away from their homes or regular places of business, all members of the Commission may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in Government service employed intermittently.

(2) Subject to such rules as may be adopted by the Commission, the Chairperson, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service and without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, shall have the power to—

(A) appoint a Director, who shall be paid at a rate not to exceed the rate of basic pay for level I, GS-16 of the General Schedule; and

(B) appoint and fix the compensation of not more than 5 additional staff personnel.

(3) This Commission is authorized to procure temporary and intermittent services of experts and consultants as are necessary to the extent authorized by section 3109 of title 5, United States Code, but at rates not to exceed the rate specified at the time of such service for grade GS-16 in section 5332 of such title. Experts and consultants may be employed without compensation if they agree to do so in advance.

(4) Upon request of the Commission, the head of any Federal agency is authorized to detail on a reimbursable or nonreimbursable basis any of the personnel of such agency to the Commission to assist the Commission in carrying out its duties under this section.

(5) The Commission is exempt from the requirements of sections 4301 through 4308 of title 5, United States Code.

(6) The Commission is authorized to enter into contracts with Federal and State agencies, private firms, institutions, and individuals for the conduct of research or surveys, the preparation of reports, and other activities necessary to the discharge of its duties and responsibilities.

(7) In order to expedite matters pertaining to the planning for, and work of, the Commission, the Commission is authorized to make purchases and contracts without regard to section 252 of title 41 of the United States Code, pertaining to advertising and competitive bidding, and may arrange for the printing of any material pertaining to the work of the Commission without regard to the Government Printing and Binding Regulations and any related laws or regulations.

(8) The Commission may use the United States mail in the same manner and under the same conditions as other departments and agencies of the United States.

(9) The Commission may secure directly from any department or agency of the United States information necessary to enable it to carry out its duties and functions. Upon request of the Chairperson, the head of any such Federal agency shall furnish such information to the Commission subject to applicable law.

(10) Financial and administrative services (including those related to budget and accounting, financial reporting, personnel, and procurement) shall be provided to the Commission by the General Services Administration for which payment shall be made in advance or by reimbursement, from funds of the Commission, in such amounts as may be agreed upon by the Chairperson of the Commission and the Administrator of General Services.

(d) In carrying out its duties under this section the Commission, or any duly authorized committee thereof, is authorized to hold such hearings and take testimony, with respect to matters to which it has a responsibility under this section as the Commission may deem advisable. The Chairperson of the Commission or any member authorized by him may administer oaths or affirmations to witnesses appearing before the Commission or before any committee thereof.

(e) From the amounts authorized to be appropriated under the Solid Waste Disposal Act for the fiscal years 1981 and 1982, not more than \$1,000,000 may be used to carry out the provisions of this section.

USED OIL RECYCLING ACT OF 1980

**Sections that did not amend the Solid Waste Disposal Act
(Resource Conservation and Recovery Act of 1976)**

Section 1. This Act may be cited as the "Used Oil Recycling Act of 1980."

Section 2. FINDINGS. The Congress finds and declares that—

- "(1) used oil is a valuable source of increasingly scarce energy and materials;
 - "(2) technology exists to re-refine, reprocess, reclaim, and otherwise recycle used oil;
 - "(3) used oil constitutes a threat to public health and the environment when reused or disposed of improperly; and
- that, therefore, it is in the national interest to recycle used oil in a manner which does not constitute a threat to public health and the environment and which conserves energy and materials.

Sections 3, 4(a) and (b), and 5 through 7 amend the Solid Waste Disposal Act.

Section 4 (c). Before the effective date of the labeling standards required to be prescribed under section 383(d)(1)(A) of the Energy Policy and Conservation Act, no requirement of any rule or order of the Federal Trade Commission may apply, or remain applicable, to any container of recycled oil (as defined in section 383(b) of such Act) if such requirement provides that the container must bear any label referring to the fact that it has been derived from previously used oil. Nothing in this subsection shall be construed to affect any labeling requirement applicable to recycled oil under any authority of law to the extent such requirement relates to fitness for intended use or any other performance characteristic of such oil or to any characteristic of such oil other than that referred to in the preceding sentence.

Section 8. USED OIL AS A HAZARDOUS WASTE. Not later than ninety days after the date of the enactment of this Act, the Administrator of the Environmental Protection Agency shall—

- (1) make a determination as to the applicability to used oil of the criteria and regulations promulgated under subsections (a) and (b) of section 3001 of the Solid Waste Disposal Act relating to characteristics of hazardous wastes, and
 - (2) report to the Congress the determination together with a detailed statement of the data and other information upon which the determination is based.
- In making a determination under paragraph (1), the Administrator shall ensure that the recovery and reuse of used oil are not discouraged.

Section 9. STUDY. The Administrator of the Environmental Protection Agency, in cooperation with the Secretary of Energy, the Federal Trade Commission, and the Secretary of Commerce, shall conduct a study—

- (1) assessing the environmental problems associated with the improper disposal or reuse of used oil;
- (2) addressing the collection cycle of used oil prior to recycling;
- (3) analyzing supply and demand in the used oil industry, including (A)

estimates of the future supply and quality of used oil feedstocks for purpose of refining and (B) estimates of the future supply of virgin crude oil available for refining for purposes of producing lubricating oil;

(4) comparing the energy savings associated with re-refining used-oil and the energy savings associated with other uses of used oil; and

(5) recommending Federal, State, and local policies to encourage methods for environmentally sound and economically feasible recycling of used oil.

Where appropriate, for purposes of the study under this section, the Administrator may utilize and update information and data previously collected by the administrator and by other agencies, departments, and instrumentalities of the United States. The Administrator shall submit to Congress a report containing the results of the study under this section not later than one year after the date of the enactment of this Act.

THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

**Sections that do not amend the Solid Waste Disposal Act
(Resource Conservation and Recovery Act of 1976)**

Section 1. This Act may be cited as "The Hazardous and Solid Waste Amendments of 1984."

Section 2. Authorizations for fiscal years 1985 through 1988.

Sections 101 to 221(a) amend the Solid Waste Disposal Act.

**Provisions which amend the Solid Waste Disposal Act, relating primarily to Title I,
Subtitles A and B:**

Section 101.	Findings and objectives of Solid Waste Disposal Act.
Section 102.	Dioxins from resource recovery facilities.
Section 103.	Ombudsman.

**Provisions which amend the Solid Waste Disposal Act, relating primarily to Title II
Subtitle A—Amendments primarily to Section 3004**

Section 201.	Land disposal of hazardous waste.
Section 202.	Minimum technological requirements.
Section 203.	Ground water monitoring.
Section 204.	Burning and blending of hazardous waste.
Section 205.	Direct action.
Section 206.	Continuing releases at permitted facilities.
Section 207.	Corrective action beyond facility boundaries; underground tanks.
Section 208.	Financial responsibility for corrective action.
Section 209.	Mining waste and other special wastes.

Subtitle B—Amendments primarily to Section 3005

Section 211.	Authority to construct hazardous waste treatment, storage, or disposal facilities.
Section 212.	Permit life.
Section 213.	Interim status.
Section 214.	New and innovative treatment technologies.
Section 215.	Existing surface impoundments.

Subtitle C—Amendments primarily to other Sections in Subtitle C

Section 221(a). Small quantity generator waste.

Sections 221(b) through (f) do not amend the Solid Waste Disposal Act.

Section 221(b). The Administrator of the Environmental Protection Agency shall undertake activities to inform and educate the waste generators of their responsibilities under the amendments made by this section during the period within 30 months after the enactment of the Hazardous and Solid Waste Amendments of 1984 to help assure compliance.

(c) The Administrator of the Environmental Protection Agency in cooperation with the State shall conduct a study of hazardous waste identified or listed under section 3001 of the Solid Waste Disposal Act which is generated by individual generators in total quantities for each generator during any calendar month of less than 1,000 kilograms. The Administrator may require from such generators information as may be necessary to conduct the study. Such study shall include a characterization of the number and type of such generators, the quantity and characteristics of hazardous waste generated by such generators, State requirements applicable to such generators, the individual and industry waste management practices of such generators, the potential costs of modifying those practices and the impact of such modifications on national treatment and disposal facility capacity, and the threat to human health and the environment and the employees of transporters or other involved in solid waste management posed by such hazardous wastes or such management practices. Such study shall be submitted to the Congress not later than April 1, 1985.

(d) The Administrator of the Environmental Protection Agency shall cause to be studied the existing manifest system for hazardous wastes as it applies to small quantity generators and recommended whether the current system shall be retained or whether a new system should be introduced. The study shall include an analysis of the cost versus the benefits of the system studied as well as an analysis of the ease of retrieving and collating information and identifying a given substance. Finally, any new proposal shall include a list of those standards that are necessary to protect human health and the environment. Such study shall be submitted to the Congress not later than April 1, 1987.

(e) The Administrator of the Environmental Protection Agency, in conjunction with the Secretary of Transportation, shall prepare and submit to the Congress a report on the feasibility of easing the administrative burden on small quantity generators, increasing compliance with statutory and regulatory requirements, and simplifying enforcement efforts through a program of licensing hazardous waste transporters to assume the responsibilities of small quantity generators relating to the preparation of manifests and associated recordkeeping and reporting requirements. The report shall examine the appropriate licensing requirements under such a program including the need for financial assurances by licensed transporters and shall make recommendations on provisions and requirements for such a program including the appropriate division of responsibilities between the Department of Transportation and the Environmental Protection Administration. Such report shall be submitted to the Congress not later than April 1, 1987.

(f)(1) The Administrator of the Environmental Protection Agency shall, in consultation with the Secretary of Education, the States, and appropriate educational associations, conduct a comprehensive study of problems associated with the accumulation, storage and disposal of hazardous wastes from educational institutions. The study shall include an investigation of the feasibility and availability of environmentally sound methods for the treatment, storage or disposal of hazardous waste from such institutions, taking into account the types and quantities of such waste which are generated by these institutions, and the nonprofit nature of these institutions.

(2) The Administrator shall submit a report to the Congress containing the findings of the study carried out under paragraph (1) not later than April 1, 1987.

(3) For purposes of this subsection—

(A) the term "hazardous waste" means hazardous waste which is listed or identified under Section 3001 of the Solid Waste Disposal Act;

(B) the term "educational institution" includes, but shall not be limited to,

(i) secondary schools as defined in section 1981X7) of the Elementary and Secondary Education Act of 1965; and

(ii) institutions of higher education as defined in section 1201(a) of the Higher Education Act of 1965.

Sections 222 to 601 amend the Solid Waste Disposal Act.

Section 222.	Listing and delisting of hazardous waste.
Section 223.	Clarification of household waste exclusion.
Section 224.	Waste minimization.
Section 225.	Basis of authorization.
Section 226.	Availability of information.
Section 227.	Interim authorization of State programs.
Section 228.	Application of amendments to authorized States.
Section 229.	Federal facilities.
Section 230.	State-operated facilities.
Section 231.	Mandatory inspections.
Section 232.	Federal enforcement.
Section 233.	Interim status correction action orders.
Section 234.	Effective date of regulations.

Subtitle D—New Sections in Subtitle C

Section 241.	Management of used oil
Section 242.	Recovery and recycling of used oil.
Section 243.	Expansion during interim status.
Section 244.	Inventory of Federal agency hazardous waste facilities.
Section 245.	Export of hazardous waste.
Section 246.	Domestic sewage.
Section 247.	Exposure information and health assessments.

Subtitle D—New provisions

Section 301.	Size of waste-to-energy facilities.
Section 302.	Subtitle D improvements.

Subtitle G—New provisions

Section 401.	Citizen suits.
Section 402.	Imminent hazard.
Section 403.	Enforcement.
Section 404.	Public participation in settlements.
Section 405.	Interim control of hazardous waste injection.

Other Subtitles

Section 501.	Use of recovered materials by Federal agencies.
Section 502.	Technical and clerical amendments.

Underground Storage Tanks

Section 601. Underground storage tank regulation.

Section 701 does not amend the Solid Waste Disposal Act.

Section 701. REPORT TO CONGRESS ON INJECTION OF HAZARDOUS WASTE.

(a) The Administrator, in cooperation with the States, shall compile and, not later than 6 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, submit to the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives, an inventory of all wells in the United States which inject hazardous wastes. The inventory shall include the following information:

- (1) the location and depth of each well;
- (2) engineering and construction details of each, including the thickness and composition of its casing, the width and content of the annulus, and pump pressure and capacity;
- (3) the hydrogeological characteristics of the overlying and underlying strata, as well as that into which the waste is injected;
- (4) the location and size of all drinking water aquifers penetrated by the well, or within a one-mile radius of the well, or within two hundred feet below the well injection point;
- (5) the location, capacity, and population served by each well providing drinking or irrigation water which is within a five-mile radius of the injection well;
- (6) the nature and volume of the waste injected during the one-year period immediately preceding the date of the report;
- (7) the dates and nature of the inspection of the injection well conducted by independent third parties or agents of State, Federal, or local government;
- (8) the name and address of all owners and operators of the well and any disposal facility associated with it;
- (9) the identification of all wells at which enforcement actions have been initiated under this Act (by reason of well failure, operator error, groundwater contamination or for other reasons) and an identification of the wastes involved in such enforcement actions; and
- (10) such other information as the Administrator may, in his discretion, deem necessary to define the scope and nature of hazardous waste disposal in the United States through underground injection.

(b) In fulfilling the requirements of paragraphs (3) through (5) of subsection (a), the Administrator need only submit such information as can be obtained from currently existing State records and from site visits to at least 20 facilities containing wells which inject hazardous waste.

(c) The States shall make available to the Administrator such information as he deems necessary to accomplish the objectives of this section.

Section 702 amends the Solid Waste Disposal Act.

Section 702. Extending the useful life of sanitary landfills.

Section 703 does not amend the Solid Waste Disposal Act.

Section 703. URANIUM MILL TAILINGS. Nothing in the Hazardous and Solid Waste Amendments of 1984 shall be construed to affect, modify, or amend the Uranium Mill Tailings Radiation Control Act of 1978.

Section 704 does not amend the Solid Waste Disposal Act.

Section 704. NATIONAL GROUND WATER COMMISSION.

(a) There is established a commission to be known as the National Ground Water Commission (hereinafter in this section referred to as the "Commission").

(b) The duties of the Commission are to:

(1) Assess generally the amount, location, and quality of the Nation's ground water resources.

(2) Identify generally the sources, extent and types of ground water contamination.

(3) Assess the scope and nature of the relationship between ground water contamination and ground water withdrawal and develop projections of available, usable ground water in future years on a nationwide basis.

(4) Assess the relationship between surface water pollution and ground water pollution.

(5) Assess the need for a policy to protect ground water from degradation caused by contamination.

(6) Assess generally the extent of overdrafting of ground water resources, and the adequacy of existing mechanisms for preventing such overdrafting.

(7) Assess generally the engineering and technological capability to recharge aquifers.

(8) Assess the adequacy of the present understanding of ground water recharge zones and sole source aquifers and assess the adequacy of knowledge regarding the interrelationship of designated aquifers and recharge zones.

(9) Assess the role of land-use patterns as these relate to protecting ground water from contamination.

(10) Assess methods for remedial abatement of ground water contamination as well as the costs and benefits of cleaning up polluted ground water and compare cleanup costs to the costs of substitute water supply methods.

(11) Investigate policies and actions taken by foreign governments to protect ground water from contamination.

(12) Assess the use and effectiveness of existing interstate compacts to address ground water protection from contamination.

(13) Analyze existing legal rights and remedies regarding contamination of ground water.

(14) Assess the adequacy of existing standards for ground water quality under State and Federal law.

(15) Assess monitoring methodologies of the States and the Federal Government to achieve the level of protection of the resource as required by State and Federal law.

(16) Assess the relationship between ground water flow systems (and associated recharge areas) and the control of sources of contamination.

(17) Assess the role of underground injection practices as a means of disposing of waste fluids while protecting ground water from contamination.

(18) Assess methods for abatement and containment of ground water contamination and for aquifer restoration including the costs and benefits of alternatives to abatement and containment.

(19) Assess State and Federal ground water law and mechanisms with which to manage the quality of the ground water resource.

(20) Assess the adequacy of existing ground water research and determine future ground water research needs.

(21) Assess the roles of State, local, and Federal Governments in managing ground water quality.

(c)(1) The Commission shall be composed of 19 members as follows:

(A) 6 appointed by the Speaker of the United States House of Representatives from among the Members of the House of Representatives, 2 of whom shall be members of the Committee on Energy and Commerce, 2 of whom shall be members of the Committee on Public Works and Transportation, and 2 of whom shall be members of the Committee on Interior and Insular Affairs;

(B) 4 appointed by the majority leader of the United States Senate from among the Members of the United States Senate;

(C) 8 appointed by the President as follows:

(i) 4 from among a list of nominations submitted to the President by the National Governors Association, 2 of whom shall be representatives of ground water appropriation States and 2 of whom shall be representatives of ground water riparian States;

(ii) one from among a list of nominations submitted to the President by the National League of Cities and the United States Conference of Mayors;

(iii) one from among a list of nominations submitted to the President by the National Academy of Science;

(iv) one from among a list of nominations submitted to the President by groups, organizations, or associations of industries the activities of which may affect ground water; and

(v) one from among a list of nominations submitted to the President from groups, or organizations, or associations of citizens which are representative of persons concerned with pollution and environmental issues and which have participated, at the State or Federal level, in studies, administrative proceedings, or litigation (or any combination thereof) relating to ground water; and

(D) the Director of the Office of Technology Assessment.

A vacancy in the Commission shall be filled in the manner in which the original appointment was made. Appointments may be made under this subsection without regard to section 5311(b) of title 5, United States Code. Not more than three of the six members appointed under subparagraph (A) and not more than two of the four members appointed under subparagraph (B) may be of the same political party. No member appointed under paragraph (c) may be an officer or employee of the Federal Government.

(2) If any member of the Commission who was appointed to the Commission as a Member of the Congress leaves that office, or if any member of the Commission who was appointed from persons who are not officers or employees of any government becomes an officer or employee of a government, he may continue as a member of the Commission for not longer than the ninety-days period beginning on the date he leaves that office or becomes such an officer or employee, as the case may be.

(3) Members shall be appointed for the life of the Commission.

(4)(A) Except as provided in subparagraph (B), members of the Commission shall each be entitled (subject to appropriations provided in advance) to receive the daily equivalent of the maximum annual rate of basic pay in effect for grade GS-18 of the General Schedule for each day (including travel time) during which they are engaged in the actual performance of duties vested in the Commission. While away from their homes or regular places of business in the performance of services for the Commission, members of the Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service are allowed expenses under section 5703 of title 5 of the United State Code.

(B) Members of the Commissions who are Members of the Congress shall receive no additional pay, allowances, or benefits by reason of their service on the Commission.

(5) Five members of the Commission shall constitute a quorum but two may hold hearings.

(6) The Chairman of the Commission shall be appointed by the Speaker of the House of Representatives from among members appointed under paragraph (1)(A) of this subsection and the Vice Chairman of the Commission shall be appointed by the majority leader of the Senate from among members appointed under paragraph (1)(B) of this subsection. The Chairman and the Vice Chairman of the Commission shall serve for the life of the Commission unless they cease to be members of the Commission before the termination of the Commission.

(7) The Commission shall meet at the call of the Chairman or a majority of its members.

(d)(1) The Commission shall have a Director who shall be appointed by the Chairman, without regard to section 5311(b) of title 5, United States Code.

(2) The Chairman may appointed and fix the pay of such additional personnel as the Chairman considers appropriate.

(3) With the approval of the Commission, the Chairman may procure temporary and intermittent services under section 3109(b) of title 5 of the United States Code.

(4) The Commission shall request, and the Chief of Engineers and the Director of the Geological Survey are each authorized to detail, on a reimbursable basis, any of the personnel of their respective agencies to the Commission to assist it in carrying out its duties under this section. Upon request of the Commission, the head of any other Federal agency is authorized to detail, on a reimbursable basis, any of the personnel of such agency to the Commission to assist it in carrying out its duties under this section.

(e)(1) The Commission may, for the purpose of carrying out this section, hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence, as the Commission considers appropriate.

(2) Any member or agent of the Commission may, if so authorized by the Commission, take any action which the Commission is authorized to take by this section.

(3) The Commission may use the United States mails in the same manner and under the same conditions as other departments and agencies of the United States.

(4) The Administrator of General Services shall provide to the Commission on a reimbursable basis such administrative support services as the Commission may request.

(5) The Commission may secure directly from any department or agency of the United States information necessary to enable it to carry out this section. Upon request of the Chairman of the Commission, the head of such department or agency shall furnish such information to the Commission.

(f)(1) The Commission shall transmit to the President and to each House of the Congress a report not later than October 30, 1986. The report shall contain a detailed statement of the findings and conclusions of the commission with respect to each item listed in subsection (b), together with its recommendations for such legislation; and administrative actions, as it considers appropriate.

(2) Not later than one year after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Commission shall complete a preliminary study concerning ground water contamination from hazardous and other solid waste and submit to the President and to the Congress a report containing the findings and conclusions of such preliminary study. The study shall be continued thereafter, and final findings and conclusions shall be incorporated as a separate chapter in the report required under paragraph (1). The preliminary study shall include an analysis of the extent of ground water contamination caused by hazardous and other solid waste, the regions and major water supplies most significantly affected by such contamination, and any recommendations of the Commission for preventive or remedial measures to protect human health and the environment from the effects of such contamination.

(g) The Commission shall cease to exist on January 1, 1987.

(h) Nothing in this section and no recommendation of the Commission shall affect any rights of quantities of water established under State law, interstate compact, or Supreme Court decree.

(i) There is authorized to be appropriated for the fiscal years 1985 through 1987 not to exceed \$7,000,000 to carry out this section.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HWA or FR)	Promulga- tion or HWA Date	State Authorization Effective Dates				
					AR	LA	NH	OK	TX
Base Program	• Identification and Listing (Part 261)	I A		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Hazardous Waste Lists	I B		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Characteristics of Hazardous Waste	I C		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Generator Requirements (Part 262)	II		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Transporter Requirements (Part 263)	III		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Facility Requirements (Part 264)	IV A		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Facility Interim Status Requirements (Part 265)	IV B		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Permitting Requirements (Parts 270 & 124)	V		11/11/81	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
Recent Requirements (1/26/83-6/30/84) (Non-HWA requirements prior to Non-HWA 1) States must adopt rules by 7/1/85, and apply for authorization by 9/1/85	• Biennial Report	1	48 FR 3977	01/28/83	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Permit Rules; Settlement Agreement	2	48 FR 39611	09/01/83	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Interim Status Standards; Applicability	3	48 FR 52718	11/23/83	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• Chlorinated Aliphatic Hydrocarbon Listing (F024)	4	49 FR 5308	02/10/84	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84
	• National Uniform Manifest	5	49 FR 10490	03/20/84	01/25/85	02/07/85	01/25/85	01/10/85	12/26/84

* States have the option to adopt rule.

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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
Recent Requirements (continued)	• Permit Rules; Settlement Agreement	6*	49 FR 17716	04/24/84	01/25/85	01/29/90	07/25/90	06/18/90	12/26/84
	• Warfarin & Zinc Phosphide Listing	7*	49 FR 19922	05/10/84	01/25/85	01/29/90	04/10/90	06/18/90	12/26/84
	• Lime Stabilized Pickle Liquor Sludge	8*	49 FR 23284	06/05/84	01/25/85	01/29/90	04/10/90	06/18/90	12/26/84
Non-HSWA I (7/1/84- 6/30/85) States must adopt rules by 7/1/86, and apply for authorization by 9/1/86.	• State Availability of Info	A1	HSWA 3006(f)	11/08/84	11/18/91		12/21/94	06/18/90	
	• Household Waste	9*	49 FR 44978	11/13/84	08/23/85	01/29/90	04/10/90	06/18/90	03/15/90
	• Interim Status Standards; Applicability	10	49 FR 46094	11/21/84	08/23/85	01/29/90	04/10/90	06/18/90	03/15/90
	• Corrections to Test Methods Manual	11	49 FR 47390	12/04/84	08/23/85	01/29/90	04/10/90	06/18/90	03/15/90
	• Satellite Accumulation	12*	49 FR 49568	12/20/84	08/23/85	01/29/90	04/10/90	06/18/90	02/17/87
	• Definition of Solid Waste	13	50 FR 614	01/04/85	08/23/85	01/29/90	04/10/90	06/18/90	02/17/87
	• (Correction 1)	13.1	50 FR 14216	04/11/85	11/18/91	10/25/91	04/10/90	06/18/90	02/17/87
	• Interim Status Standards for Treatment, Storage, and Disposal Facilities	15	50 FR 16044	04/23/85	05/29/90	01/29/90	04/10/90	06/18/90	03/15/90
Non-HSWA II (7/1/85- 6/30/86) States must adopt rules by 7/1/87, and apply for authorization by 9/1/87.	• Definition of Solid Waste (Correction 2)	13.2	50 FR 33541	08/20/85	11/18/91	10/25/91	04/10/90	06/18/90	02/17/87
	• Financial Responsibility; Settlement Agreement	24	51 FR 16422	05/02/86	05/29/90	01/29/90	07/25/90	06/18/90	03/15/90
	• Listing of Spent Pickle Liquor (K062)	26*	51 FR 19320	05/28/86	05/29/90	10/25/91	04/10/90	06/18/90	03/15/90

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NH	OK	TX
Non-HSWA III (7/1/86- 6/30/87) States must adopt rules by 7/1/88, and apply for authorization by 9/1/88.	• Radioactive Mixed Waste	MW	51 FR 24504	07/03/86	05/29/90	10/25/91	07/25/90	11/27/90	03/15/90
	• Listing of Spent Pickle Liquor (K062) (Correction 1)	26.1*	51 FR 33612	09/22/86	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Liability Coverage; Corporate Guarantee	27*	51 FR 25350	07/11/86	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Standards for Hazardous Waste Storage and Treatment Tank Systems	28N	51 FR 25422	07/14/86	05/29/90	10/25/91	07/25/90	11/27/90	07/23/90
	• (Correction 1)	28N.1	51 FR 29430	08/15/86	11/18/91	10/25/91	07/25/90	11/27/90	07/23/90
	• Correction to Listing of Commercial Chemical Products and Appendix VIII Constituents	29	51 FR 28296	08/06/86	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Revised Manual SW-846; Amended Incorporation by Reference	35	52 FR 8072	03/16/87	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Closure/Post-closure Care for Interim Status Surface Impoundments	36	52 FR 8704	03/19/87	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Definition of Solid Waste; Technical Corrections	37	52 FR 21306	06/05/87	05/29/90	10/25/91	04/10/90	11/27/90	07/23/90
	• Amendments to Part B Information Requirements for Land Disposal Facilities	38	52 FR 23447	06/22/87	05/29/90	10/25/91	07/25/90	11/27/90	07/23/90

* States have the option to adopt rule.

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Cluster	Federal Rules	Checklist	Reference (NSMA or FR)	Promulgation or NSMA Date	State Authorization Effective Dates				
					AR	LA	MI	OK	TX
Non-NSMA IV (7/1/87-6/30/88) States must adopt rules by 7/1/89, and apply for authorization by 9/1/89.	• Closure/Post Closure and Financial Responsibility Requirements (Correction 1)	24.1	53 FR 7740	03/10/88	11/18/91	01/29/90	07/25/90	06/18/90	03/15/90
	• Listing of Spent Pickle Liquor (K062) (Correction 2)	26.2*	52 FR 28697	08/03/87		03/08/95			
	• Development of Corrective Action Programs After Permitting Hazardous Waste Land Disposal Facilities; (Correction 1)	38.1	52 FR 33936	09/09/87	11/18/91	10/25/91	07/25/90	06/03/91	07/23/90
	• List (Phase 1) of Hazardous Constituents for Ground-Water Monitoring	40	52 FR 25942	07/09/87	11/18/91	03/08/95	12/04/92	06/03/91	12/04/92
	• Identification and Listing of Hazardous Waste (Container/Inner Liner Correction)	41	52 FR 26012	07/10/87	11/18/91	03/08/95	12/04/92	06/03/91	12/04/92
	• Liability Requirements for Hazardous Waste Facilities; Corporate Guarantee	43*	52 FR 44314	11/18/87	11/18/91	03/08/95	12/04/92	06/03/91	12/04/92
	• Hazardous Waste Miscellaneous Units	45	52 FR 46946	12/10/87	11/18/91	03/08/95	07/25/90	06/03/91	12/04/92
	• Technical Correction; Identification and Listing of Hazardous Waste	46	53 FR 13382	04/22/88	11/18/91	03/08/95	12/04/92	06/03/91	12/04/92

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	MI	OK	TX
Non-HSWA V (7/1/88- 6/30/89) States must adopt rules by 7/1/90, and apply for authorization by 9/1/90.	• Identification and Listing of Hazardous Waste; Treatability Studies Sample Exemption	49*	53 FR 27290	07/19/88	12/04/92	01/02/96	12/04/92	11/19/91	06/27/94
	• Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Liability Coverage	51	53 FR 33938	09/01/88					
	• Hazardous Waste Management System; Standards for Hazardous Waste Storage and Treatment Tank Systems	52N	53 FR 34079	09/02/88	12/04/92	01/02/96	12/04/92	11/19/91	06/27/94
	• Identification and Listing of Hazardous Waste; and Designation, Reportable Quantities, and Notification (Amendment to the Bevill Exclusion)	53	53 FR 35412	09/13/88	12/04/92	06/11/96	12/04/92	11/19/91	06/27/94
	• Permit Modifications for Hazardous Waste Management Facilities	54*	53 FR 37912	09/28/88	12/04/92	06/11/96		11/19/91	06/27/94
	• (Correction 1)	54.1*	53 FR 41649	10/24/88	12/04/92	06/11/96		11/19/91	06/27/94
	• Statistical Methods for Evaluating Ground-Water Monitoring Data from Hazardous Waste	55	53 FR 39720	11/10/88	12/04/92	01/02/96	12/04/92	11/19/91	06/27/94

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NH	OK	TX
	• Identification and Listing of Hazardous Waste; Removal of Iron Dextran from the List of Hazardous Wastes	56*	53 FR 43878	10/31/88	12/04/92	06/11/96	12/04/92	11/19/91	06/27/94

* States have the option to adopt rule.

Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NH	OK	TX
Non-HSWA V (continued)	• Identification and Listing of Hazardous Waste; Removal of Strontium Sulfide From the List of Hazardous Wastes	57*	53 FR 43881	10/31/88	12/04/92	06/11/96	12/04/92	11/19/91	06/27/94
	• Standards for Generators of Hazardous Waste; Manifest Renewal	58*	53 FR 45089	11/08/88	12/04/92	01/02/96	12/04/92		
	• Hazardous Waste Miscellaneous Units; Standards Applicable to Owners and Operators	59	54 FR 615	01/09/89	12/04/92	01/02/96	12/04/92	11/19/91	06/27/94
	• Amendment to Requirements for Hazardous Waste Incinerator Permits	60	54 FR 4286	01/30/89	12/04/92	01/02/96	12/04/92	11/19/91	06/27/94
	• Changes to Interim Status Facilities for Hazardous Waste Management Permits; Procedures for Post-Closure Permitting	61*	54 FR 9596	03/07/89	12/04/92	06/11/96	12/04/92	11/19/91	06/27/94

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
Non-HSWA VI (7/1/89- 6/30/90) States must adopt rules by 7/1/91, and apply for authorization by 9/1/91.	• Financial Responsibility; Settlement Agreement (Amendment to Checklist 24's Optional Designation of 264.113 & 265.113)	24A	55 FR 25976	10/24/90	12/04/92	01/29/90	07/25/90	11/29/93	06/27/94
	• Delay of Closure Period for Hazardous Waste Management Facilities	64*	54 FR 33376	08/14/89	12/04/92	06/11/96	12/04/92	11/29/93	06/27/94
	• Mining Waste Exclusion I	65	54 FR 36592	09/01/89	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94

* States have the option to adopt rule.

Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
Non-HSWA VI (continued)	• Testing and Monitoring Activities	67	54 FR 40260	09/29/89	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94
	• Changes to Part 124 Not Accounted for by Present Checklists	70	Various	Various	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94
	• Mining Waste Exclusion II	71	55 FR 2322	01/23/90	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94
	• Modification of F019 Listing	72*	55 FR 5340	02/14/90	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94
	• Testing and Monitoring Activities; Technical Corrections	73	55 FR 8948	03/09/90	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94
	• Criteria for Listing	76*	55 FR 18726	1/90	12/04/92	01/02/96	12/04/92	11/29/93	06/27/94

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklis	Reference (HWA or FR)	Promulga- tion or MSA Date	State Authorization Effective Dates				
					AR	LA	MI	OK	TX
	• Land Disposal Restrictions for Third Third Scheduled Wastes	78N	55 FR 22520	10/20/90	12/04/92		12/21/94	12/21/94	06/27/94
HWA I (11/8/84- 6/30/87) States must adopt rules by 7/1/89, and apply for authorization by 9/1/89.	• Existing and Newly Regulated Surface Impoundments Requirements	SR1	HWA §3005(j), §3004(d)				12/21/94	12/21/94	
	• Surface Impoundment Variance under §3005(j)(2)-(9) and (13)	SR2*							
	• Exceptions to the Burning and Blending of Hazardous Waste	BB*	HWA §3004(q)(2)(a) §3004(r)(2) & (3)						

* States have the option to adopt rule.

Cluster	Federal Rules	Checklis	Reference (HWA or FR)	Promulga- tion or HWA Date	State Authorization Effective Dates				
					AR	LA	MI	OK	TX
HWA I (continued)	• Hazardous and Used Oil Fuel Criminal Penalties	CP*	HWA §3006(h), §3008(d), §3014						
	• Direct Actions Against Insurers	NOT DELEG- ABLE	HWA §3004(t)	11/08/84					
	• Sharing of Information with the Agency for Toxic Substances and Disease Registry	SI	HWA §3019(b)	07/15/85	11/18/91		12/21/94	12/21/94	
	• Disposal Waste Listing and Management Standards	14	50 FR 1978	01/14/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90

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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
	• HSWA Codification Rule; Small Quantity Generators	17 A	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Delisting	17 B*	50 FR 28702	07/15/85		01/23/95			
	• HSWA Codification Rule; Delisting (Correction 1)	17 B.1*	54 FR 27114	06/27/89		01/23/95			
	• HSWA Codification Rule; Household Waste (Resource Recovery Facilities)	17 C*	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Waste Minimization	17 D	50 FR 28702	07/15/85	11/18/91		12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Location Standards for Salt Domes, Salt Beds, Underground Mines & Caves	17 E	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90

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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
HSWA I (continued)	• HSWA Codification Rule; Liquids in Landfills	17 F	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Dust Suppression	17 G	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Double Liners	17 H	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklis	Reference	Promulga-	State Authorization Effective Dates				
		t	(HSWA or FR)	tion or					
	• HSWA Codification Rule; Ground Water Monitoring	17 I	50 <u>FR</u> 28702	HSWA Date	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Cement Kilns	17 J	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Fuel Labeling	17 K	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Corrective Action	17 L	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	01/02/96	12/21/94	07/23/90
	• HSWA Codification Rule; Pre-construction Ban	17 M	50 <u>FR</u> 27802	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Permit Life	17 N	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Omnibus Provision	17 O	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Interim Status	17 P	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• HSWA Codification Rule; Research and Development Permits	17 Q*	50 <u>FR</u> 28702	07/15/85	11/18/91	01/23/95	07/25/90	12/21/94	07/23/90
	• HSWA Codification Rule; Hazardous Waste Exports	17 R	50 <u>FR</u> 28702	07/15/85	11/18/91		12/21/94	12/21/94	07/23/90

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
HSWA I (continued)	• HSWA Codification Rule; Exposure Information	17 S	50 FR 28702	07/15/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Listing of TDI, TDA, and DNT Wastes	18	50 FR 42936	10/23/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Burning of Waste Fuel and Used Oil Fuel in Boilers and Industrial Furnaces	19	50 FR 49164	11/29/85	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• (Correction 1)	19.1	52 FR 11819	04/13/87	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Listing of Spent Solvents	20	50 FR 53315	12/31/85	11/18/91	01/23/95	12/21/94	12/21/94	
	• (Correction 1)	20.1	51 FR 2702	01/21/86	11/18/91	01/23/95	12/21/94	12/21/94	
	• Listing of EDB Waste	21	51 FR 5327	02/13/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Listing of Four Spent Solvents	22	51 FR 6537	02/25/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Generators of 100 to 1000 kg Hazardous Waste	23	51 FR 10146	03/24/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Codification Rule; Technical Correction (Paint Filter Test)	25	51 FR 19176	05/28/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Standards for Hazardous Waste Storage and Treatment Tank Systems	28H	51 FR 25422	07/14/86	11/18/91		12/21/94	12/21/94	07/23/90
	• (Correction 1)	28H.1	51 FR 29430	08/15/86	11/18/91		12/21/94	12/21/94	07/23/90
	• Biennial Report; Correction (Waste Minimization, Technical Correction)	30	51 FR 28556	08/08/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90

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Cluster	Federal Rules	Checklist	Reference (HSA or FR)	Promulga- tion or HSA Dat	State Authorization Effective Dates				
					AR	LA	NH	OK	TX
HSA I (continued)	• Exports of Hazardous Waste	31	51 FR 28664	08/08/86	11/18/91		12/21/94	12/21/94	07/23/90
	• Standards for Generators; Waste Minimization Certifications	32	51 FR 35190	10/01/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Listing of ESDC	33	51 FR 37725	10/24/86	11/18/91	01/23/95	12/21/94	12/21/94	07/23/90
	• Land Disposal Restrictions (Solvents and Dioxins)	34	51 FR 40572	11/07/86	11/18/91		12/21/94	12/21/94	07/23/90
	• (Correction 1)	34.1	52 FR 21010	06/04/87	11/18/91		12/21/94	12/21/94	07/23/90
HSA II (7/1/87- 6/30/90) States must adopt rules by 7/1/91, and apply for authorization by 9/1/91.	• California List Waste Land Disposal Restrictions	39	52 FR 25760	07/08/87	11/18/91		12/21/94	12/21/94	06/27/94
	• (Correction 1)	39.1	52 FR 41295	10/27/87	11/18/91		12/21/94	12/21/94	06/27/94
	• Exception Reporting for Small Quantity Generators of Hazardous Waste	42	52 FR 35894	09/23/87	11/18/91	01/02/06	12/21/94	12/21/94	06/27/94
	• HSA Codification Rule 2; Permit Application Requirements Regarding Corrective Action	44 A	52 FR 45788	12/01/87	11/18/91	01/02/96	01/02/96	12/21/94	06/27/94
	• HSA Codification Rule 2; Corrective Action Beyond Facility Boundary	44 B	52 FR 45788	12/01/87	11/18/91	01/02/96	01/02/96	12/21/94	06/27/94
	• HSA Codification Rule 2; Corrective Action for Injection Wells	44 C	52 FR 45788	12/01/87	11/18/91		01/02/96	12/21/94	06/27/94

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Cluster	Federal Rules	Checklis	Reference	Promulga-	State Authorization Effective Dates				
	• HSWA Codification Rule 2; Permit Modification	t 44 D	(HSWA or FR) 52 FR 45788	tion or HSWA DATE	11/18/91	01/02/96	12/21/94	12/21/94	06/27/94

* States have the option to adopt rule.

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Cluster	Federal Rules	Checklist	Reference (HWA or FR)	Promulga- tion or HWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
HWA II (continued)	• HWA Codification Rule 2; Permit as a Shield Provision	44 E	52 FR 45788	12/01/87	11/18/91	01/02/96	12/21/94	12/21/94	06/27/94
	• HWA Codification Rule 2; Permit Conditions to Protect Human Health and the Environment	44 F	52 FR 45788	12/01/87	12/04/92	01/02/96	12/21/94	12/21/94	06/27/94
	• HWA Codification Rule 2; Post-Closure Permits	44 G	52 FR 45788	12/01/87	11/18/91		12/21/94	12/21/94	06/27/94
	• Technical Correction to Checklist 23, Small Quantity Generators	47	53 FR 27162	07/19/88	12/04/92	01/02/96	12/21/94	12/21/94	06/27/94
	• Farmer Exemptions; Technical Corrections	48	53 FR 27164	07/19/88	12/04/92	01/02/96	12/21/94	12/21/94	06/27/94
	• Land Disposal Restrictions for First Third Scheduled Wastes	50	53 FR 31138	08/17/88	12/04/92		12/21/94	12/21/94	06/27/94
	• (Correction 1)	50.1	54 FR 8264	02/27/89	12/04/92		12/21/94	12/21/94	06/27/94
	• Hazardous Waste Management System; Standards for Hazardous Waste Storage and Treatment Tank Systems	52H	53 FR 34079	09/02/88	12/04/92	01/02/96	12/21/94	12/21/94	06/27/94
	• Land Disposal Restriction Amendments to First Third Scheduled Wastes	62	54 FR 18836	05/02/89	12/04/92		12/21/94	12/21/94	06/27/94

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklis	Reference (HCLM or FR)	Promulga- tion or Date	State Authorization Effective Dates				
	• Land Disposal Restrictions for Second Third Scheduled Wastes	63	54 FR 26594	06/27/89 NSM Date	12/04/92		12/21/94	12/21/94	06/27/94

* States have the option to adopt rule.

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Cluster	Federal Rules	Checklist	Reference (HSA or FR)	Promulga- tion or HSA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
HSA II (continued)	• Land Disposal Restrictions; Correction to the First Third Scheduled Wastes	66	54 FR 36967	09/06/89	12/04/92		12/21/94	12/21/94	06/27/94
	• (Correction 1)	66.1	55 FR 23935	06/13/90	12/04/92		12/21/94	12/21/94	06/27/94
	• Reportable Quantity Adjustment Methyl Bromide Production Wastes	68	54 FR 41402	10/06/89	12/04/92	06/11/96	12/21/94	12/21/94	06/27/94
	• Reportable Quantity Adjustment (F024 & F025)	69	54 FR 50986	12/11/89	12/04/92	06/11/96	12/21/94	12/21/94	06/27/94
	• Toxicity Characteristics Revisions	74	55 FR 11798	03/29/90	12/04/92	06/11/96	12/21/94	12/21/94	10/21/91
	• Toxicity Characteristics Revisions (Correction 1)	74.1	55 FR 26986	06/29/90	12/04/92	06/11/96	12/21/94	12/21/94	10/21/91
	• Listing of 1,1- Dimethylhydrazine Production Wastes	75	55 FR 18496	05/02/90	12/04/92	06/11/96	12/21/94	12/21/94	06/27/94
	• HSA Codification Rule: Double Liners; Correction	77	55 FR 19262	05/09/90	12/04/92	01/02/96	12/21/94	12/21/94	06/27/94
	• Land Disposal Restrictions for Third Third Scheduled Wastes	78H	55 FR 22520	06/01/90	12/04/92		12/21/94	12/21/94	06/27/94
	• Organic Air Emission Standards for Process Vents and Equipment Leaks	79	55 FR 25454	06/21/90	12/04/90	01/02/96	12/21/94	12/21/94	06/27/94

* States have the option to adopt rule.

**RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA I (7/1/90- 6/30/91) States must adopt rules by 7/1/92, and apply for authorization by 9/1/92.	• Toxicity Characteristics; Hydrocarbon Recovery Operations	80*	55 FR 40834	10/05/90	12/04/92	06/11/96			
	• (Correction 1)	80.1*	56 FR 3978	02/01/91	12/04/92	06/11/96			
	• (Correction 2)	80.2*	56 FR 13406	04/02/91	12/04/92	06/11/96			
	• Petroleum Refinery Primary and Secondary Oil/Water/Solids Separation Sludge Listings (F037 and F038)	81	55 FR 46354	11/02/90	12/04/92	06/11/96	08/23/94	12/21/94	06/27/94
	• (Correction 1)	81.1	55 FR 51707	12/17/90	12/04/92	06/11/96	08/23/94	12/21/94	06/27/94
	• Wood Preserving Listings	82	55 FR 50450	12/06/90	12/04/92	06/11/96	08/23/94	12/21/94	06/27/94
	• Land Disposal Restrictions for Third Third Scheduled Wastes; Technical Amendment	83	56 FR 3864	01/31/91	12/04/92		08/23/94	12/21/94	06/27/94
	• Toxicity Characteristic; Chlorofluorocarbon Refrigerants	84*	56 FR 5910	02/13/91	12/04/92	06/11/96			
	• Burning of Hazardous Waste in Boilers and Industrial Furnaces	85	56 FR 7134	02/21/91	12/04/92		08/23/94	12/21/94	06/27/94
	• Removal of Strontium Sulfide from the List of Hazardous Waste; Technical Amendment	86	56 FR 7567	02/25/91	12/04/92	06/11/96	08/23/94	12/21/94	06/27/94
	• Organic Air Emission Standards for Process Vents and Equipment Leaks; Technical Amendment	87	56 FR 19290	04/26/91	12/04/91	06/11/96	08/23/94	12/21/94	06/27/94

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* States have the option to adopt rule.

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Cluster	Federal Rules	Checklist	Reference (HSA or FR)	Promulgation or HSA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA I (continued)	• Administrative Stay for K069 Listing	88*	56 FR 19951	05/01/91	12/04/92	06/11/96	08/23/94		
	• Revision to F037 and F038 Listings	89*	56 FR 21955	05/13/91	12/04/92	06/11/96		12/21/94	
	• Mining Exclusion III	90	56 FR 27300	06/13/91	12/04/92	06/11/96	08/23/94	12/21/94	06/27/94
	• Administrative Stay for F032, F034, and F035 Listings	91*	56 FR 27332	06/13/91	12/04/92	06/11/96	08/23/94	12/21/94	
RCRA II (7/1/91- 6/30/92) States must adopt rules by 7/1/93, and apply for authorization by 9/1/93.	• Wood Preserving Listing; Technical Correction	92	56 FR 30192	07/01/91	12/21/94	06/11/96	12/21/94	12/21/94	
	• Burning of Hazardous Waste in Boilers and Industrial Furnaces; Corrections and Technical Amendments I	94	56 FR 32688	07/17/91	12/21/94		12/21/94	12/21/94	
	• Land Disposal Restrictions for Electric Arc Furnace Dust (K061)	95	56 FR 41164	08/19/91	12/21/94		12/21/94	12/21/94	
	• Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments II	96	56 FR 42504	08/27/91	12/21/94		12/21/94	12/21/94	
	• Exports of Hazardous Waste; Technical Correction	97	56 FR 43704	09/04/91	12/21/94	06/11/96	12/21/94	12/21/94	
	• Coke Ovens Administrative Stay	98*	56 FR 43754	09/05/91	12/21/94	06/11/96	12/21/94	12/21/94	
	• Amendments to Interim Status Standards for Downgradient Ground- water Monitoring well locations at hazardous	99*	56 FR 66365	12/23/91	12/21/94	06/11/96	12/21/94		

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* States have the option to adopt rule.

Cluster	Federal Rules	Checklist	Reference (HSWA or <u>FR</u>)	Promulgation or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA II (continued)	• Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units	100	57 <u>FR</u> 3462	01/29/92	12/21/94	06/11/96	12/21/94		
	• Administrative Stay for the Requirement That Existing Drip Pads be Impermeable	101*	57 <u>FR</u> 5859	02/18/92	12/21/94		12/21/94	12/21/94	
	• Second Correction to the Third Third Land Disposal Restrictions	102	57 <u>FR</u> 8086	03/06/92	12/21/94		12/21/94	12/21/94	
	• Hazardous Debris Case-by-Case Capacity Variance	103	57 <u>FR</u> 20766	05/15/92	12/21/94		12/21/94	12/21/94	
	• Used Oil Filter Exclusion	104*	57 <u>FR</u> 21524	05/20/92	12/21/94	06/11/96	12/21/94	12/21/94	
	• Coke by-product Exclusion	105*	57 <u>FR</u> 27880	06/22/92	12/21/94	06/11/96	12/21/94	12/21/94	
	• Lead-Bearing Hazardous Materials Case-by-Case Capacity Variance	106	57 <u>FR</u> 28628	06/26/92	12/21/94		12/21/94	12/21/94	
RCRA III (7/1/92-6/30/93) States must adopt rules by 7/1/94, and apply for authorization by 9/1/94.	• Used Oil Filter Exclusion; Technical Correction	107*	57 <u>FR</u> 29220	07/01/92		06/11/96		04/27/95	
	• Toxicity Characteristics Revision; Technical Corrections	108	57 <u>FR</u> 30657	07/10/92		06/11/96	07/10/95	04/27/95	
	• Land Disposal Restrictions for Newly Listed Wastes and	109	57 <u>FR</u> 37194	08/18/92			07/10/95	04/27/95	

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Cluster	Federal Rules	Checklis	Reference	Promulga-	State Authorization Effective Dates				
	• Coke By-Product Listings	t 110	(HSWA or FR) 57 FR 37284	tion or RAW Date		06/11/96	07/10/95	04/27/95	

* States have the option to adopt rule.

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Cluster	Federal Rules	Checklis t	Reference (NSWA or <u>FR</u>)	Promulga- tion or NSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA III (continued)	• Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendment III	111	57 <u>FR</u> 38558	08/25/92			07/10/95	04/27/95	
	• Recycled Used Oil Management Standards	112	57 <u>FR</u> 41566	09/10/92		06/11/96		04/27/95	
	• Financial Responsibility for Third-Party Liability, Closure and post-Closure	113	57 <u>FR</u> 42832	09/16/92		06/11/96	07/10/95	04/27/95	
	• Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Coverage	113.1	53 <u>FR</u> 33938	09/01/88		06/11/96	07/10/95	04/27/95	
	• Liability Requirements; Technical Amendment (Non-NSWA)	113.2	56 <u>FR</u> 30200	07/01/91		06/11/96	07/10/95	04/27/95	
	• Burning of Hazardous Waste in Boilers and Industrial Furnaces; Amendment IV	114	57 <u>FR</u> 44999	09/30/92			07/10/95	04/27/95	
	• Chlorinated Toluene Production Waste Listing	115	57 <u>FR</u> 47376	10/15/92		06/11/96	07/10/95	04/27/95	
	• Hazardous Soil Case-By-Case Capacity Variance	116	57 <u>FR</u> 47772	10/20/92			07/10/95	04/27/95	
	• "Mixture" and "Derived-From" Rules; Response to Court Remand	117A*	57 <u>FR</u> 7628	03/03/92		06/11/96		04/27/95	

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklis t	Reference (HSA or FR)	Promulga- tion or HSA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
	• "Mixture" and "Derived- From" Rules; Technical Correction	117A.1*	57 FR 23062	06/01/92		06/11/96		04/27/95	

* States have the option to adopt rule.

Cluster	Federal Rules	Checklis t	Reference (HSA or FR)	Promulga- tion or HSA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA III (continued)	• "Mixture" and "Derived- From" Rules; Final Rule	117A.2*	57 FR 49278	10/20/92		06/11/96		04/27/95	
	• Toxicity Characteristic Revision	117B	57 FR 23062	06/01/92		06/11/96	07/10/95	04/27/95	
	• Liquids in Landfills II	118	57 FR 54452	11/18/92		06/11/96	07/10/95	04/27/95	
	• Toxicity Characteristic Revision; TCLP	119*	57 FR 55114	11/24/92		06/11/96		04/27/95	
	• Toxicity Characteristic Revision; TCLP Correction	119.1*	58 FR 6854	02/02/93		06/11/96		04/27/95	
	• Wood Preserving; Amendments to Listings and Technical Requirements	120	57 FR 61492	12/24/92		06/11/96	07/10/95	04/27/95	
	• Corrective Action Management Units and Temporary Units; Corrective Action Provisions Under Subtitle C	121*	58 FR 8658	02/16/93		06/11/96		04/27/95	
	• Recycled Used Oil Management Standards; Technical Amendments and Corrections	122	58 FR 26420	05/03/93		06/11/96		04/27/95	

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Cluster	Federal Rules	Checklis	Reference	Promulga-	State Authorization Effective Dates				
		t	(HSDA or FR)	tion or					
	• Recycled Used Oil Management Standards; Correction	122.1	58 FR 33341	05/14/93		06/11/96		04/27/95	
	• Land Disposal Restrictions; Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance	123	58 FR 28506	05/14/93			07/10/95	04/27/95	

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulgation or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA III (continued)	• Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated	124	58 FR 29860	05/24/93			07/10/95	04/27/95	
RCRA IV (7/1/93-6/30/94) States must adopt rules by 7/1/95, and apply for authorization by 9/1/95.	• Requirements for Preparation, Adoption, and Submittal of Implementation Plans	125	58 FR 38816	07/20/93			3-10-97	12/23/96	
	• Testing and Monitoring Activities	126	58 FR 46040	08/31/93			3-10-97	12/23/96	
	• Burning of Hazardous Waste in Boilers and Industrial Furnaces	127*	58 FR 59598	11/09/93				12/23/96	
	• Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Wastes from Wood Surface Protection	128	59 FR 458	01/04/94			3-10-97	12/23/96	
	• Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Treatability Studies Sample Exclusion	129*	59 FR 8362	02/18/94				12/23/96	
	• Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Recycled Used Oil Management Standards	130	59 FR 10550	03/04/94				12/23/96	

* States have the option to adopt rule.

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Cluster	Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA IV (continued)	• Recordkeeping Instructions	131	59 FR 13891	03/24/94			3-10-97	12/23/96	
	• Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes from Wood Surface Protection; Correction	132	59 FR 28484	06/02/94			3-10-97	12/23/96	
	• Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Underground Storage Tanks, and Underground Injection Control Systems; Financial Assurance; Letter of Credit.	133*	59 FR 29958	06/10/94				12/23/96	
	• Hazardous Waste Management System; Correction of Listing of P015--Beryllium Powder	134	59 FR 31551	06/20/94			3-10-97	12/23/96	
RCRA V (7/1/94- 6/30/95) States must adopt rules by 7/1/96, and apply for authorization by 9/1/96.	• Hazardous Waste Management System; Testing and Monitoring Activities, Land Disposal Restrictions Correction	126.1	59 FR 47980	09/19/94					
	• Identification and Listing of Hazardous Waste; Amendments to Definition of Solid Waste	135*	59 FR 38536	07/28/94					

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Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	MM	OK	TX
RCRA V (continued)	<ul style="list-style-type: none"> Standards for the Management of Specific Hazardous Wastes; Amendment to Subpart C -- Recyclable Materials Used in a Manner Constituting Disposal; Final Rule 	136	59 FR 43496	08/24/94					
	<ul style="list-style-type: none"> Land Disposal Restrictions Phase II -- Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Waste 	137	59 FR 47982	09/19/94			<i>draft</i>		
	<ul style="list-style-type: none"> Technical Amendment to the Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Waste 	137.1	60 FR 242	01/03/95					

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Cluster	Federal Rules	Checklis t	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
	• Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emissions Standards for Tanks, Surface Impoundments, and Containers	138	59 FR 62696						
	• Hazardous Waste Management System; Testing and Monitoring Activities	139	60 FR 3089	01/13/95			<i>Draft</i>		

* States have the option to adopt rule.

Cluster	Federal Rules	Checklis t	Reference (HSWA or FR)	Promulga- tion or HSWA Date	State Authorization Effective Dates				
					AR	LA	MM	OK	TX
RCRA V (continued)	• Hazardous Waste Management System; Carbamate Production Identification and Listing of hazardous Waste; and CERCLA Hazardous Substance Designation and Reportable Quantities	140	60 FR 7824	02/09/95					

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AND DATES OF STATE RULES AD-
JUSTED

Cluster	Federal Rules	Checklis t	Reference (NSWA or FR)	Promulga- tion or NSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
	• Hazardous Waste Management System; Carbamate Production Identification and Listing of hazardous Waste; and CERCLA Hazardous Substance Designation and Reportable Quantities; Correction	140.1	60 FR 19165	NSWA 7/8/95					
	• Hazardous Waste Management System; Carbamate Production Identification and Listing of hazardous Waste; and CERCLA Hazardous Substance Designation and Reportable Quantities; Correction	140.2	60 FR 25619	05/12/95					
	• Hazardous Waste Management System; Testing and Monitoring Activities	141	60 FR 17001	04/04/95			<i>def</i>		
	• Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program); Final Rule	142A*	60 FR 25492	05/11/95			<i>def</i>		

* States have the option to adopt rule.

Cluster	Federal Rules	Checklis t	Reference (NSWA or FR)	Promulga- tion or NSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
AND DATES OF STATE RULES AUTHORIZED

Cluster	Federal Rules	Checklist	Reference (HSWA or FR)	Promulgation or MSW Date	State Authorization Effective Dates				
RCRA V (continued)	• Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program); Final Rule	142B*	60 FR 25492				draft		
	• Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program); Final Rule	142C*	60 FR 25492	05/11/95			draft		
	• Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program); Final Rule	142D*	60 FR 25492	05/11/95			draft		
	• Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program); Final Rule	142E*	60 FR 25492	05/11/95			draft		
	• Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers	143*	60 FR 26828	05/19/95			draft		

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
AND DATES OF STATE RULES AUTHORIZED

Cluster	Federal Rules	Checklist	Reference (CWA or FR)	Promulga- tion or HSUA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX
RCRA V (continued)	• Solid Waste, Hazardous Waste, Oil Discharge and Superfund Programs; Removal of Legally Obsolete Rules	144	60 FR 33912	06/29/95					

* States have the option to adopt rule.

[illegible]

- * States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
AND DATES OF STATE RULES AUTHORIZED[illegible]

- States have the option to adopt rule.

**RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER
AND DATES OF STATE RULES AUTHORIZED**

Cluster	Federal Rules	Checklist	Reference (NSWA or FR)	Promulga- tion or NSWA Date	State Authorization Effective Dates				
					AR	LA	NM	OK	TX

* States have the option to adopt rule.

RCRA PROGRAM REVISION CHECKLISTS - BY CLUSTER AND DATES OF STATE RULES AUTHORIZED

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[illegible]

* States have the option to adopt rule.

PUBLIC NOTICE: RESPONSE TO PUBLIC COMMENTS

The Response to Public Comments is an integral part of the New Mexico Environment Department's public participation effort for all major regulatory actions. A Response is prepared, if needed, any time a Public Notice and formal solicitation of public input is required, such as for permit and closure plan approvals, disapprovals, and modifications affecting either operating permits or major Corrective Action decision points. The Response is considered part of the official Administrative Record for these actions.

A Response to Public Comments is prepared for all written comments received during the Public Input period for a regulatory action. The format used by the Department is:

- 1) a verbatim record of the comment presented, followed by
- 2) the Department's response. The Department first states whether it agrees or disagrees, or partially agrees or disagrees, with the comment. This is followed by a detailed discussion of each issue raised in the comment.

A complete Response to Public Comments, along with the final regulatory decision, is mailed to the facility involved in the regulatory action and to the public which have submitted comments.

SUBTITLE C

4.0 Checklists

These checklists are provided to both the reviewer of Subtitle C documents and the regulated community for informational purposes only. These are not intended to be all-inclusive.

The facility has the responsibility to adhere to all aspects of applicable regulations and, therefore, should not rely solely on the provided checklists in the preparation or submittal of a Subtitle C-required document.

ADMINISTRATIVE REVIEW COMPLETENESS CHECKLIST FOR PERMIT APPLICATIONS

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Each of the following section must be present to determine Administrative Completeness. Administrative Completeness Reviews are to determine the presence or absence of all the required parts of a Permit Application. This is not a review for Technical Adequacy.

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Part A review completed			
§ 270.14(b)(1)	General Facility Description			
§ 270.14(b)(2)	Chemical and physical analysis of:			
	Hazardous Waste			
	Hazardous Debris			
	Minimum information to:			
	Treat			
	Store			
	Dispose			
§ 270.14(b)(3) § 264.13(b) § 265.13(b)	Waste Analysis Plan			
§ 270.14(b)(4) § 264.14	Security and Security Equipment			
§ 270.14(b)(5) § 264.15(b) § 265.15(b)	General Inspection Schedule			
§ 270.14(b)(6) § 264.30 thru 37 § 265.30 thru 37	Procedures and Prevention Waiver Justification			
§ 270.14(b)(7) § 264.50 thru 56 § 265.50 thru 56	Contingency Plan			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Emergency Responder List			
§ 270.14(b)(8)	Procedures, Structures, Equipment to:			
	Prevent unloading hazards			
	Run-on/run-off control			
	Prevent contamination of water supplies			
	Mitigate effects of:			
	Equipment failure			
	Power failure			
	Prevent undue exposure of personnel			
§ 270.14(b)(8)	Prevent release to atmosphere			
§ 270.14(b)(9) § 264.17 § 265.17	Procedure to prevent:			
	Accidental ignition			
	Reaction of ignitable			
	Reaction of reactives			
	Reaction of incompatibles			
§ 270.14(b)(10)	Traffic Pattern:			
	Volume			
	Controls			
	Access			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.14(b)(11) § 264.18(a) § 265.18	Facility Identification and Location:			
	Political boundaries			
	Seismic standards			
	Floodplain			
	Floodplain standards			
	Compliance schedule			
§ 270.14(b)(12)	Training Program:			
	Introductory			
	Continuing			
§ 270.14(b)(13)	Closure Plan			
§ 270.14(b)(14)	Deed Restrictions			
§ 270.14(b)(15)	Closure Cost Estimate			
§ 270.14(b)(16)	Post Closure Cost Estimate			
§ 270.14(b)(17/18)	Financial Assurance			
§ 270.14(b)(19)	Topographic Map			
§ 270.14(b)(20)	Groundwater Monitoring Plan			
Specific Unit Part B Application	Description of Specific Units Provided:			
	Landfills			
	Land Treatment Units			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Surface Impoundments			
	Waste Piles			
	Tank Systems			
	Use and Management Containers			
	Incinerators			
	Short Term Incinerators			
	Miscellaneous Units			
	Process Vents			
	Equipment			
	Containment Buildings			
	Drip Pads			
Other Permits	Permit by Rule			
	Emergency			
	Hazardous Waste Incinerators			
	Land Treatment Demonstration			
	Interim Permit for UIC Wells			
	Research Development and Demonstration			
	Boilers and Industrial Furnaces			

**REVIEW CHECKLIST
FOR
PART A APPLICATIONS
(§270.13)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.13(a)	Activities conducted by the applicant that required it to obtain a permit under RCRA			
§ 270.13(b)	Name, mailing address, and location, including latitude, longitude of the facility for which the application is submitted			
§ 270.13(c)	Up to four (4) SIC Codes which best reflect the principal products or services provided by the facility			
§ 270.13(d)	Operator's name, address, telephone number, ownership status, and status as a Federal , State, private, public or other entity			
§ 270.13(e)	Name, address and phone number of the owner of the facility			
§ 270.13(f)	Whether the facility is located on Indian Lands			
§ 270.13(g)	Indication of whether the facility is new or existing and whether it is a first or revised application			
§ 270.13(h)	For existing facilities:			
§ 270.13(h)(1)	A scale drawing of the facility showing the location of all past TSDs, present TSDs, and future TSDs			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.13(h)(2)	Photograph of the facility clearly delineating all existing:			
	present TSDs			
	sites of future TSDs			
§ 270.13(i)	A description of the processes to be used to for:			
	treating and capacity			
	storage and capacity			
	disposing and capacity			
§ 270.13(j)	A specification of the hazardous wastes listed or designated under 40 CFR § 261 to be treated, stored, or disposed of at the facility, an estimate of the quantity of such waste to be treated, stored, or disposed of annually, and a general description of the process to be used for such wastes			
§ 270.13(k)	A listing of all permits or construction approval received or applied for under any of the following programs:			
§ 270.13(k)(1)	RCRA Hazardous Waste Management Program			
§ 270.13(k)(2)	UIC program under Safe Drinking Water Act (SDWA)			
§ 270.13(k)(3)	NPDES program under Clean Water Act (CWA)			

§ 270.13(k)(4)	Prevention of Significant Deterioration (PSD) Program under the Clean Air Act (CAA)			
§ 270.13(k)(5)	Nonattainment program under the CAA			
§ 270.13(k)(6)	National Emissions Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the CAA			
§ 270.13(k)(7)	Ocean Dumping Permits under the Marine Protection Research and Sanctuaries Act			
§ 270.13(k)(8)	Dredge or fill permits under section 404 of the CWA			
§ 270.13(k)(9)	Other relevant environmental permits			
§ 270.13(l)	A topographic map (or other map if a topographic map is unavailable):			
	extending one (1) mile beyond the property boundaries of the source			
	depicting the facility and each of its intake structures			
	discharge structures			
	each of its hazardous waste treatment facilities			
	each of its storage facilities			
	each of its disposal facilities			
	each well where fluids from the facility are injected underground			

	wells, springs, other surface water bodies			
	drinking water wells listed in public records or otherwise known to the applicant within 1/4 mile of the facility boundary			
§ 270.13(m)	A brief description of the nature of the business			
§ 270.13(n)	For hazardous debris, a description of the debris category(ies) and contaminant category(ies) to be treated, stored, or disposed of at the facility.			

NOTE: Part A Application instructions in section XIV (Description of Hazardous Waste) requires the information in item XIV to describe all hazardous waste that will be treated, stored, or disposed of at the facility. In addition, the processes that will be used to treat, store, or dispose of each waste and the estimated annual quantity of each waste must be provided. The instructions on the form state that "For each listed waste entered in Column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in Column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

Is item XIV properly completed in accordance with the instructions ? _____

Is the annual quantity given in the correct unit of measure as required by the Part A Application Instructions ? _____

**REVIEW CHECKLIST
FOR
PART B GENERAL REQUIREMENT
(§ 270.14)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.14(b)(1)	General description of the facility or unit.			
§ 270.14(b)(2)	Chemical and/or physical analyses which must be known to treat/store/dispose of waste.			
§ 270.14(b)(3)	Waste analysis plan required to comply with:			
§ 264.13(b)	Develop and follow a written waste analysis plan.			
§ 264.13(c)	Off-site waste analysis requirements.			
§ 270.14(b)(4)	Security requirements under § 264.14 required.			
§ 270.14(b)(5)	General inspection schedule in compliance with §264.15(b). Specific requirements of:			
§ 264.174	Container inspections			
§ 264.193(i)	Tank inspections			
§ 264.195	Overfill control inspections			
§ 264.226	Surface impoundments monitoring and inspection			
§ 264.254	Waste pile monitoring and inspection			
§ 264.273	Land treatment design and operating requirements			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.303	Landfill monitoring and inspection			
§ 264.602	Miscellaneous units			
§ 264.1033	Process vent standards			
§ 264.1052	Equipment leak air emission standards			
§ 264.1053	Compressor standards			
§ 264.1058	Standards for pumps, valves, pressure relief devices flanges and connections.			
§ 270.14(b)(6)	Justification of any waiver requests for § 264 Subpart C.			
§ 270.14(b)(7)	Requirements for a contingency plan under § 264 Subpart D with specific requirements under:			
§ 264.227	surface impoundment emergency repairs.			
§ 270.14(b)(8)	description of procedures and equipment used to:			
§ 270.14(b)(8)(i)	prevent hazards in unloading operations (ramps, and special forklifts)			
§ 270.14(b)(8)(ii)	runoff prevention with berms, trenches, and dikes.			
§ 270.14(b)(8)(iii)	Prevent contamination of water supplies			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.14(b)(8)(iv)	mitigate effects of equipment failure and power outages			
§ 270.14(b)(8)(v)	prevent undue exposure of personnel by use of personal protective equipment (PPE)			
§270.14(b)(8)(vi)	prevent release to the atmosphere			
§270.14(b)(9)	description of controls of ignitable/reactive waste with specific requirements of: § 264.17 separated and protected from ignition and reaction			
§264.17(c)	documentation of compliance with § 264.17			
§270.14(b)(10)	traffic pattern studies that estimate volume and number of types of vehicles			
	identify turn lanes			
	identify traffic/stacking lanes			
	describe road surface			
	describe road load bearing capacity			
	identify type and number of traffic controls			
§ 270.14(b)(11)	Facility/unit location information:			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(i)	seismic standard (264.18(a))			
(ii)	Seismic standard must show:			
(A)	no fault within 3,000' with displacement in Holocene time (within the last 10,000 yrs)			
	Published geologic studies			
	Aerial reconnaissance of a five (5) mile radius from the facility/unit			
	Analysis of aerial photographs covering 3,000' radius from the facility/unit			
	Walking studies of the radius if needed			
(B)	If faults (to include lineations) which have displacement in Holocene time are present within 3,000', no faults pass with 200' of the portions of the facility where treatment, storage or disposal will be conducted			
(iii)	100 year flood plain information			
(iv)	If in the 100 year flood plane:			
(A)	Engineering analysis of hydrostatic forces expected in a 100 year flood.			
(B)	Structural engineering studies for flood protection to prevent washout.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(C)	Detailed description of procedures to remove hazardous waste to safety before flood reaches the waste:			
	Reaches the waste, including:			
(1)	timing of removal			
(2)	Location to be moved to			
(3)	dedicated equipment and personnel to ensure removal			
(4)	Potential for accidental discharge during movement.			
(v)	Plan to show how the facility will be brought into compliance with § 264.18(b). (Flood control)			
§ 270.14(b)(12)	Training program introductory/ continuing in accordance with § 264.16.			
	Must be designed to meet §264.16(a)(3) job task descriptions.			
§ 270.14(b)(13)	Closure plan designed to meet:			
§ 264.112	Amendment to closure plan			
§ 264.118	Post closure plan amendment			
	Or if applicable:			
§ 264.178	containers			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.197	tanks			
§ 264.228	surface impoundments			
§ 264.258	waste piles			
§ 264.280	land treatment			
§ 264.310	landfills			
§ 264.351	incinerators			
§ 264.601	miscellaneous units			
§ 264.603	requirements by the Secretary			
§ 270.14(b)(14)	Disposal units must comply with § 264.119			
§ 270.14(b)(15)	Closure cost estimates § 264.142			
	Financial Assurance § 264.143			
§ 270.14(b)(16)	Post Closure Care Cost Estimate § 264.144			
	Post closure care financial assurance § 264.145			
§ 270.14(b)(17)	Copy of insurance policy § 264.147, 264.147(a), 264.147(b), 264.147(c)			
§ 270.14(b)(18)	State financial mechanism § 264.149 and/or 264.150			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.14(b)(19)	Topographic Map Requirements: 1,000' around the facility/unit with at least a 1" (2.5 cm) = 200' (61 meters) scale and a contour interval of at least 5' (1.5 meters) if the relief is greater than 20' (6.1 meters) or 2' (.6 meters) if less than 20' (6.1 meters).			
(i)	map scale and date			
(ii)	100 year flood plain			
(iii)	surface water locations			
(iv)	surrounding land use			
(v)	wind rose			
(vi)	map orientation (N)			
(vii)	legal boundaries			
(viii)	access controls			
(ix)	injection/withdrawal well location on and off-site			
(x)	Buildings:			
	TSD Operations			
	Run-on/run-off control			
	Sewer lines: storm			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	sanitary			
	Process			
	Loading/unloading areas			
	Fire control information			
(xi)	Barriers for drainage or flood control			
(xii)	Location of operational units within the HWM Facility site showing where hazardous waste will be treated/stored/disposed of including equipment cleanup.			
§ 270.14(b)(20)	Compliance with other federal laws and regulations as required under 270.3:			
(a)	Wild and Scenic Rivers Act			
(b)	National Historic Preservation Act			
(c)	Endangered Species Act			
(d)	Coastal Zone Management			
(e)	Fish and Wildlife Coordination Act			
(f)	Executive Orders			
§ 270.14(b)(21)	Compliance with Land Disposal Restrictions under § 268.5 and 268.6			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.14(c)	Additional information as required under 264.90(b) ground water:			
§ 270.14(c)(1)	Ground water monitoring under § 265.90 through 265.94			
§ 270.14(c)(2)	Identification of uppermost aquifer, ground water flow rate and direction			
§ 270.14(c)	Additional information as required under 264.90(b) ground water: (continued)			
§ 270.14(c)(3)	A topographic map required under 270.14(b)(19) that identifies proposed point of compliance as required by 264.95.			
§ 270.14(c)(3)	Proposed location of ground water monitoring wells under 264.97			
§ 270.14(c)(4)	description of plume of contamination that has entered the ground water from a regulated unit at the time the application was submitted			
(i)	extent of plume indicated on topographic map required by 270.14(b)(19)			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(ii)	identification of constituents and concentration for appendix IX of § 264			
§ 270.14(c)(5)	Detailed plan and an engineering report describing proposed ground water monitoring program under § 264.97.			
§ 270.14(c)(6)	If no releases are detected at date of submittal then follow § 264.98			
(i)	List of proposed: indicator parameters, waste constituents, reaction products that can provide reliable indication of presence of hazardous constituents in the ground water.			
(ii)	Proposed ground water monitoring system			
(iii)	Background values for each proposed monitoring parameter			
(iv)	Description of proposed sampling, analysis and statistical comparisons to be used			
§ 270.14(c)(7)	If a release is detected at the point of compliance then § 264.99 requires corrective action to be made under 264.100			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.15	Container Storage Information			
§ 270.16	Tank Storage Information			
§ 270.16(a)	Written assessment of tank, structural integrity and suitability submitted by an independent, certified, registered professional engineer			
§ 270.16(b)	Dimensions and capacity of each tank			
§ 270.16(c)	Feed system description			
§ 270.16(d)	Piping diagram			
§ 270.16(e)	External corrosion protection description as required by § 264.192(a)(3)(ii)			
§ 270.16(f)	New tank installation as required by § 264.192(b) and (c)			
§ 270.16(g)	Detailed description of the secondary containment as required by § 264.193(a) through (f)			
§ 270.16(h)	Request for variance under § 264.193			
§ 270.16(i)	Description of procedures and controls to prevent spills and overflows 264.194(b)			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.16(j)	Detailed description of compliance with 264.198 and 264.199 for tanks containing reactive/ignitable waste.			

II.A.4.a(2).(a)

**REVIEW CHECKLIST
FOR
WASTE ANALYSIS PLAN
(§ 264.13)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§264.13	General waste analysis			
§264.13(a)(1)	Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under § 264.113(d), he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with this part and part 268 of this chapter.			
§264.13(a)(2)	The analysis may include data developed under part 261 of this chapter, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.			
§264.13(a)(3)	The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(i)	When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes, or non-hazardous wastes if applicable under § 264.113(d), has changed; and			
(ii)	For off-site facilities, when the results of the inspection required in paragraph (a)(4) of this section indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.			
§264.13(a)(4)	The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§264.13(b)	The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with paragraph (a) of this section. He must keep this plan at the facility. At a minimum, the plan must specify:			
§264.13(b)(1)	The parameters for which each hazardous waste, or non-hazardous waste if applicable under § 264.113(d), will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (a) of this section);			
§264.13(b)(2)	The test methods which will be used to test for these parameters;			
§264.13(b)(3)	The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:			
(i)	One of the sampling methods described in appendix I of part 261 of this chapter; or			
(ii)	An equivalent sampling method			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§264.13(b)(4)	The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and			
§264.13(b)(5)	For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply.			
§264.13(b)(6)	Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §§ 264.17 (ignitable, reactive, or incompatible), 264.314 (bulk & containerized liquids), 264.341 (waste analysis for incinerators), 264.1034(d) (subpart AA), 264.1063(d) (subpart BB), 264.1083 (subpart CC), and 268.7 (LDR) of this chapter.			
§264.13(b)(7)	For surface impoundments exempted from land disposal restrictions under § 268.4(a), the procedures and schedules for:			
(i)	The sampling of impoundment contents;			
(ii)	The analysis of test data; and,			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(iii)	The annual removal of residues which are not delisted under § 260.22 of this chapter or which exhibit a characteristic of hazardous waste and either:			
(A)	Do not meet applicable treatment standards of part 268, subpart D; or			
(B)	Where no treatment standards have been established;			
(1)	Such residues are prohibited from land disposal under § 268.32 or RCRA section 3004(d); or			
(2)	Such residues are prohibited from land disposal under § 268.33(f).			
§264.13(b)(8)	For owners and operators seeking an exemption to the air emission standards of subpart CC in accordance with § 264.1082-			
(i)	If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(ii)	If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.			
§264.13(c)	For off-site facilities, the waste analysis plan required in paragraph (b) of this section must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:			
§264.13(c)(1)	The procedures which will be used to determine the identity of each movement of waste managed at the facility; and			
§264.13(c)(2)	The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§264.13(c)(3)	The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.			

II.A.4.b.(1)

**REVIEW CHECKLIST
FOR
USE AND MANAGEMENT OF CONTAINERS
(§§ 264.170, 265.170, 270.15 and 270.27)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.15	Specific Part B requirements for containers:			
§270.15(a)	A description of the containment system to demonstrate compliance with §264.175 including at a minimum:			
§270.15(a)(1)	Basic design parameters, dimensions, and materials of construction			
§270.15(a)(2)	How the design promotes drainage or how containers are kept from contact with standing liquids in the containment system			
§270.15(a)(3)	Capacity of the containment system relative to the number and volume of containers to be stored			
§270.15(a)(4)	Provisions for managing run-on			
§270.15(a)(5)	How accumulated liquids can be analyzed and removed to prevent overflow			
§270.15(b)	For storage areas that store containers holding wastes that do not contain free liquids, a demonstration of compliance with §264.175(c) includes:			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.15(b)(1)	Test procedures and results or other documentation or information to show that the wastes do not contain free liquids			
§270.15(b)(2)	A description of how the storage area is designed or operated to drain or remove liquids or how containers are kept from contact with standing liquids			
§270.15(c)	Provide sketches, drawings, or data demonstrating compliance with §264.176 (location of buffer zone and containers holding ignitable or reactive wastes) and §264.177(c) (location of incompatible wastes), where applicable			
§270.15(d)	Where incompatible wastes are stored or otherwise managed in containers, a descriptions of the procedures used to ensure compliance with §264.177 (a) and (b) and 264.17 (b) and c			
§270.15(e)	Information regarding air emission control equipment as required in §270.27			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.27(a)	If applicable, specific Part B information requirements for air emissions for containers:			
§270.27(a)(2)	Identification of each container area subject to the requirements of 40 CFR part 264, subpart CC and certification by the owner or operator that the requirements are met			
§270.27(a)(3)	Documentation that each enclosure used to control air emissions from containers are in accordance with the requirements of §264.1086(b)(2)(I) includes information prepared by the owner or operator or manufacturer or vendor describing the enclosure design and certification that the enclosure meets the specifications listed in §265.1087(b)(2)(ii)			
§270.27(a)(5)	Documentation for each closed-vent system and control device installed in accordance with the requirements of §264.1087 that includes design and performance information as specified in §270.24 (c) and (d)			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.27(a)(6)	An emission monitoring plan for both Method 21 and control device monitoring methods. The plan must include:			
§270.27(a)(6)	monitoring point(s)			
§270.27(a)(6)	monitoring methods for control devices			
§270.27(a)(6)	monitoring frequency			
§270.27(a)(6)	procedures for documenting exceedances			
§270.27(a)(6)	procedures for mitigating noncompliances			

**REVIEW CHECKLIST
FOR
TANK SYSTEMS
(§§ 270.16 and 264.190)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§270.16	Specific part B information requirements for tank systems.			
§ 264.13	Waste Identification			
§ 264.191	Existing Tank System			
§ 270.16	Facilities that use tanks to store or treat hazardous waste must include unless provided within § 264.191 :			
§ 270.16(a)	Written assessment reviewed and certified by a registered P.E. as to the structural integrity			
§ 270.16(b)	Dimensions and capacity			
§ 270.16(c)	Feed systems, safety cutoff, bypass system and pressure control			
§ 270.16(d)	Diagram of piping, instrumentation, process flow for each tank			
§ 270.16(e)	Description of materials and equipment used to provide corrosion protection as required under § 264.192(a)(3)(ii)			
§ 270.16(f)	Detailed description of installation in compliance with § 264.192(b), (c), (d) and (e)			
§ 264.191(a)	w/o secondary containment			
§ 264.191(b)	Professional engineer assessment of structural integrity			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Design standards			
	Hazardous characteristics			
	Corrosion measures			
	Documentation of tank age			
	Result of leak test, internal inspection, other tank exam			
§ 264.191(d)	If assessment reveals leaking or unfit, tank must be removed from service immediately in accordance with § 264.196.			
§ 264.192	New Tank Systems			
§ 264.192(a)	Professional engineer assessment of structural integrity			
	Design standards			
	Hazardous characteristics			
	Potential for corrosion			
	Corrosion measures			
§ 264.192(a)4	Underground tank system determination of measures to protect tank against potential damage			
§ 264.192(b)	Precautions to prevent damage during installation			
§ 264.192(c)	Backfill requirements			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.192(d)	Tightness testing			
§ 264.192(e)	Ancillary equipment			
§ 264.192(g)	Paperwork requirements			
§ 270.16(g):				
§ 264.193	Containment and detection of releases			
§ 264.193(a)	(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section must be provided (except as provided in paragraphs (f) and (g) of this section):			
(1)	For all new tank systems or components, prior to their being put into service;			
(2)	For all existing tank systems used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027, within two years after January 12, 1987;			
(3)	For those existing tank systems of known and documented age, within two years after January 12, 1987 or when the tank system has reached 15 years of age			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(4)	For those existing tank systems for which the age cannot be documented, within eight years of January 12, 1987; but if the age of the facility is greater than seven years, secondary containment must be provided by the time the facility reaches 15 years of age, or within two years of January 12, 1987, whichever comes later; and			
§ 264.193(b)	Secondary containment systems:			
	Designed & installed to prevent migration of waste or accumulated liquid out of system			
	Capable of detecting & collecting release until collected material is removed			
§ 264.193(c)	Construction requirements:			
	Construction materials compatible			
	Foundation			
	Leak detection			
	Sloped or designed to remove liquids from leaks, spills, or precipitation			
§ 264.193(c)	Additional construction requirements:			
	External Liner			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Vault system			
	Double-walled tanks			
§ 270.16(h):				
§ 264.193(g)	Variance from the requirements of this section if the Secretary finds, as a result of a demonstration that the alternative design and operating practices... will prevent the migration of any hazardous waste into ground water, surface water at least as effective as secondary containment			
§ 264.193(h)	Equivalent device variance procedures			
§ 264.193(i)	Leak testing for existing hazardous waste tanks without secondary containment yet must follow:			
(1)	For non-enterable underground tanks, a leak test that meets the requirements of § 264.191(b)(5) must be conducted at least annually.			
(2)	For other than non-enterable tanks:			
	a leak test must be conducted;			
	or a schedule and procedure for an assessment by an independent, qualified registered P.E. must be provided;			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	the assessment meets the conditions of 264.193(i)(2)			
(3)	For ancillary equipment, a leak test or other integrity assessment must be conducted at least annually.			
(4)	A file must be maintained at the facility with a record of the results of the assessments.			
(5)	If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment, the owner or operator must comply with the requirements of § 264.196.			
§ 264.194	General Operating Requirements			
	No hazardous waste that could cause the tank or equipment to rupture, leak, corrode, or otherwise fail			
§ 270.16(i):				
§ 264.194(b)	Controls to prevent spills:			
	Spill prevention controls			
	Overfill prevention controls			
	Maintenance of sufficient freeboard			
§ 264.195	Inspections			
	Schedule			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
	Once per day - tank system for corrosion or releases, data from monitoring & leak detection equip, construction mtl. & immediately surrounding area			
	Cathodic protection system, six months after installation and annually thereafter, and all sources of impressed current at least every other month			
§ 264.196	Response to leaks or spills and disposition of leaking or unfit-for-use tank systems			
(a)	The flow of hazardous waste into the tank system or secondary containment system must be immediately stopped. Immediately inspect the system to determine the cause of the release.			
(b)	Removal of waste from tank system or secondary containment system within 24 hours.			
(c)	Containment of visible releases to the environment.			
(d)	Notifications, reports.			
(e)	Provision of secondary containment, repair, or closure			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(f)	Certification of major repairs.			
§ 264.197	Closure and post-closure care			
(a)	At closure of a tank system, all hazardous waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with hazardous waste, must be removed or decontaminated and managed as hazardous waste. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in subparts G and H of this part.			
(b)	If it is demonstrated that not all contaminated soils can be practicably removed or decontaminated then the owner/operator must close the tank system and perform post-closure care in accordance with requirements that apply to landfills. For the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(c)	If the tank system does not have secondary containment that meets the requirements of § 264.193 (b) through (f) and has not been granted a variance from the secondary containment requirements in accordance with § 264.193(g), then:			
(1)	The closure plan for the tank system must include both a plan for complying with removal and decontamination requirements [paragraph (a) of this section] and a contingent plan for complying with the landfill closure [paragraph (b) of this section].			
(2)	A contingent post-closure plan for complying with paragraph (b) of this section must be prepared and submitted as part of the permit application.			
(3)	The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under paragraph (a) of this section.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(4)	Financial assurance must be based on the cost estimates in paragraph (c)(3) of this section.			
(5)	For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under subparts G and H of this part.			
§ 270.16(j)	Description of how operating procedures and tank system and facility design will achieve compliance with the requirements § 264.198 and § 264.199:			
§ 264.198	Special requirements for ignitable or reactive waste			
(a)	Ignitable or reactive waste must not be placed in tank systems, unless:			
(1)	The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
(i)	The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under §§ 261.21 or 261.23 of this chapter, and			
(ii)	Section 264.17(b) is complied with; or			
(2)	The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or			
(3)	(3) The tank system is used solely for emergencies.			
(b)	The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981), (incorporated by reference, see § 260.11).			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.199	Special Requirements for Incompatible Wastes			
(a)	Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless § 264.17(b) is complied with.			
(b)	Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless § 264.17(b) is complied with.			
§ 270.16(k)	Information on air emission control equipment as required in § 270.27			
§ 264.200	Air emission standards - The owner or operator shall manage all hazardous waste placed in a tank in accordance with the requirements of subpart CC of this part			

**REVIEW CHECKLIST
FOR
INCINERATORS
(§ 264.340, § 265.340 and § 270.19)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.19	Specific Part B Information for Incinerators; O/O must fulfill requirements of (a), (b) or (c)			
§ 270.19(a)	When seeking an exemption under § 264.340(b) or (c) of this chapter (Ignitable, corrosive, or reactive wastes only):			
§ 270.19(a)(1)	Documentation that the waste is listed as a hazardous waste in part 261, subpart D solely because it is ignitable (Hazard Code I) or corrosive (Hazard Code C) or both; or			
§ 270.19(a)(2)	Documentation that the waste is listed as a hazardous waste in part 261, subpart D solely because it is reactive (Hazard Code R) for characteristics other than those listed in 261.23a(4) and (5) will not be burned when other hazardous wastes are present in the combustion zone; or			
§ 270.19(a)(3)	Documentation that the waste is a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, or			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.19(a)(4)	Documentation that the waste is a hazardous waste solely because it possesses the reactivity characteristic and that it will not be burned when other hazardous wastes are present in the combustion zone; or			
§ 270.19(b)	A trial burn plan or results of a trial burn in accordance with 270.62, or			
§ 270.19(c)	In lieu of a trial burn the following information:			
§ 270.19(c)(1)	An analysis of each waste or mixture of wastes to be burned including:			
§ 270.19(c)(1)(i)	Heat value of the waste in the form and composition in which it will be burned			
§ 270.19(c)(1)(ii)	Viscosity if applicable, or description of physical form of the waste			
§270.19(c)(1)(iii)	An identification of any hazardous organic constituents listed in Part 261, Appendix VIII, except wastes not reasonably expected to be found			
§ 270.19(c)(1)(iv)	An approximate quantification of the hazardous constituents identified in the waste			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.19(c)(1)(v)	A quantification of those hazardous constituents in the waste which may be designated as Principal Organic Hazardous Constituents POHCs based on data from other trial or operational burns which demonstrate compliance with 264.343; or			
§ 270.19(c)(2)	A detailed engineering description of the incinerator, including:			
§ 270.19(c)(2)(i)	Manufacturer's name and model number			
§ 270.19(c)(2)(ii)	Type of incinerator			
§ 270.19(c)(2)(iii)	Linear dimensions of incinerator unit including cross-sectional area of combustion chamber			
§ 270.19(c)(2)(iv)	Description of auxiliary fuel system (type, feed)			
§ 270.19(c)(2)(v)	Capacity of prime mover			
§ 270.19(c)(2)(vi)	Description of automatic waste feed cut-off system(s)			
§ 270.19(c)(2)(vii)	Stack gas monitoring and pollution control equipment			
§ 270.19(c)(2)(viii)	Nozzle and burner design			
§ 270.19(c)(2)(ix)	Construction materials			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 270.19(c)(2)(x)	Location and description of temperature, pressure and flow indicating devices and control devices			
§ 264.341, § 270.19(c)(8)	Waste feed analysis data sufficient to allow the Secretary to specify POHCs			
§ 264.342	One or more Principal Organic Hazardous Constituents (POHCs) identified			
§ 264.343	Performance standards			
§ 264.343(a)	99.99% Destruction and Removal Efficiency (DRE) for each POHC in the permit			
§ 264.343(a)(2)	99.9999% DRE of listed wastes F020, F021, F022, F023, F026 and F027			
§ 264.343(a)(2)	Notification of intent to incinerate listed wastes F020, F021, F022, F023, F026 and F027			
§ 264.343(b)	HCl removal to less than 1.8 kg/hour or 1% of HCl in the stack gas prior to entering any pollution control equipment			
§ 270.19(c)(6) (viii)	Expected HCl removal efficiency			
§ 264.343(c)	Particulate matter removal			
§ 264.343(d)	Operating conditions compliance with performance standards			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.344	Hazardous Waste Incinerator Permits			
§ 264.344(a)	Limitation on wastes			
§ 264.345	Operating requirements			
§ 264.345(b)	Waste feed composition specified			
§ 264.345b(1), § 270.19(c)(6)(i)	Stack gas CO level			
§ 264.345(b)(2)	Feed rate			
§ 264.345(b)(3), § 270.19(c)(6)(i)	Combustion temperature			
§ 264.345(b)(4), §270.19(c)(6)(iv)	Indicators of combustion gas velocity			
§ 264.345(b)(5)	Allowable variations in system design or operating procedures			
§ 264.345(c)	Precluded waste feed during start-ups and shut-downs			
§ 264.345(d)	Control of fugitive emissions from combustion zone			
§ 264.345	Automatic waste feed cut-off			
§ 264.345(f)	Cease waste feed when changes in conditions exceed permit limits			
§ 270.19(c)(6) (vi)	Computed residence time for waste in the combustion zone			
§ 264.347	Monitoring & Inspections			
§ 264.347(a)	Monitoring systems & purpose: combustion temperature			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.347(a)	Monitoring systems & purpose: waste feed rate			
§ 264.347(a)	Monitoring systems & purpose: indicator(s) of combustion gas velocity			
§ 264.347(a)	Monitoring systems & purpose: stack gas CO level			
§ 264.347(a)	Monitoring systems & purpose: monitoring systems for each specified operating condition must be provided			
§ 264.347(a)(3)	Sampling and analysis of wastes and exhaust emissions must be conducted			
§ 264.347(b)	At least daily visual monitoring for each system for leaks, spills, fugitive emissions, signs of tampering			
§ 264.347(c)	Emergency waste feed cutoff system and associated alarms must be tested at least weekly			
§ 264.347(d)	Record and maintain monitoring and inspection data in the operating log			
§ 264.351	Incinerator closure:			
§ 264.351	All wastes removed at closure			
§ 264.112	Description of closure plan			
§ 264.112(b)(3)	Maximum inventory of waste			
§ 264.112(b)(4)	Decontamination or disposal of facility equipment			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.113	Closure schedule			

REVIEW CHECKLIST
FOR SHORT TERM INCINERATION
TRIAL BURN/SHAKEDOWN
(§ 264 SUBPART O, § 270.19, § 270.62)

FACILITY: _____

**DOCUMENT
TITLE:** _____

**DOCUMENT
DATE:** _____

UNIT: _____

**TYPE OF
PERMIT:** _____

REVIEWER: _____

**DATE OF
REVIEW:** _____

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
264.341	Waste feed analysis			
264.342	One or more POHCs identified			
264.344(a)	Limitation on wastes			
264.344(c)(1), 270.62(a)	Trial burn period; ≤ 720 hours, one extension of 720 hours			
264.345/270.62(a) 270.19	Operating Requirements/Hazardous Waste Incinerator Permits/ Specific Part B Information			
264.345(b)	Waste feed composition specified			
264.345(b)(1), 270.19(c)(6)(i)	Stack gas CO level			
264.345(b)(2), 270.62(a)(1)	Waste feed rate, restriction on waste constituents			
264.345(b)(3), 270.19(c)(6)(iii)	Combustion temperature			
264.345(b)(4), 270.19(c)(6)(iv)	Indicator(s) of combustion gas velocity			
270.62(b)(2)(vi)	A description of, and planned operating conditions for, any emission control equipment which will be used			
270.62(b)(2)(vii)	Procedures for rapidly stopping waste feed, shutting down the incinerator and controlling emissions in the event of an equipment malfunction.			
264.345(c)	Precluded waste feed during start-ups and shut-downs			
264.345(d)	Control of fugitive emissions from combustion zone			
264.345(e)	Automatic waste feed cut-off			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.19(c)(8)	Waste feed analysis data sufficient to allow the Secretary to specify Principal Organic Hazardous Constituents (POHCs)			
264.347	Monitoring & Inspections			
264.347(a)	Owner/Operator must conduct, as a minimum, the following inspections while incinerating hazardous waste:			
264.347(a)(1)	combustion temperature			
264.347(a)(1)	waste feed rate			
264.347(a)(1)	indicator(s) of combustion gas velocity			
264.347(a)(2)	stack gas CO level			
264.347(a)(3)	Upon request by the Secretary, sampling and analysis of wastes and exhaust emissions must be conducted			
264.347(b)	At least daily visual monitoring for each system for leaks, spills, fugitive emissions, signs of tampering			
264.347(c)	Emergency waste feed cutoff system and associated alarms must be tested at least weekly			
264.347(d)	Record and maintain monitoring and inspection data in the operating log			
270.19(b)/ 270.62(b)	Trial Burn Plan or Results of Trial Burn/Trial Burn Period			
270.19(b), 270.62(b)	Trial burn plan or results of trial burn			
270.62(b)(2)(i)	Analysis of each waste			
270.62(b)(2)(ii)	Detailed engineering description of the incinerator			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.62(b)(2)(ii)(A)	Manufacturer's name and model number			
270.62(b)(2)(ii)(B)	Type of incinerator			
270.62(b)(2)(ii)(C)	Linear dimensions of incinerator unit including cross-sectional area of combustion chamber			
270.62(b)(2)(ii)(D)	Description of auxiliary fuel system (type, feed)			
270.62(b)(2)(ii)(E)	Capacity of prime mover			
270.62(b)(2)(ii)(F)	Description of automatic waste feed cut-off system(s)			
270.62(b)(2)(ii)(G)	Stack gas monitoring and pollution control equipment			
270.62(b)(2)(ii)(H)	Nozzle and burner design			
270.62(b)(2)(ii)(I)	Construction materials			
270.62(b)(2)(ii)(J)	Location and description of temperature, pressure and flow indicating devices and control devices			
270.62(b)(2)(iii)	Sampling, analysis and monitoring procedures, including QA/QC plan			
270.62(b)(2)(iv)	Detailed test schedule for each waste for which the trial burn is planned including date(s), duration, quantity and other factors relevant to the Secretary's decision.			
270.62(b)(2)(v)	Detailed test protocol schedule for each waste identified including;			
270.62(b)(2)(v)	temperature ranges,			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.62(b)(2)(v)	waste feed rate,			
270.62(b)(2)(v)	combustion gas velocity,			
270.62(b)(2)(v)	use of auxiliary fuel,			
270.62(b)(2)(v)	any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator			
270.62(b)(2)(vi)	Emissions control equipment description and operating conditions			
270.62(b)(2)(vii)	Emergency shutdown procedures			
270.62(b)(4)	Trial burn POHC's for each waste			
270.62(b)(5)	The Director shall approve a trial burn plan if he finds that:			
270.62(b)(5)(i)	The trial burn is likely to determine whether the incinerator performance standard required by § 264.343 of this chapter can be met;			
270.62(b)(5)(ii)	The trial burn itself will not present an imminent hazard to human health or the environment;			
270.62(b)(5)(iii)	The trial burn will help the Director to determine operating requirements to be specified under § 264.345 of this chapter, and			
270.62(b)(5)(iv)	The information sought in paragraphs (b)(5) (i) and (ii) of this section cannot reasonably be developed through other means.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.62(b)(6)	The Director must send a notice to all persons on the facility mailing list and to the appropriate units of State and local government announcing the scheduled commencement and completion dates for the trial burn. The applicant may not commence the trial burn until after the Director has issued such notice.			
270.62(b)(6)(i)	This notice must be mailed within a reasonable time period before the scheduled trial burn. An additional notice is not required if the trial burn is delayed due to circumstances beyond the control of the facility or the permitting agency.			
270.62(b)(6)(ii)	This notice must contain:			
270.62(b)(6)(ii)(A)	The name and telephone number of the applicant's contact person			
270.62(b)(6)(ii)(B)	The name and telephone number of the permitting agency's contact office			
270.62(b)(6)(ii)(C)	The location where the approved trial burn plan and any supporting documents can be reviewed and copied			
270.62(b)(6)(ii)(D)	An expected time period for commencement and completion of the trial burn.			
270.62(b)(7)	Trial burn determinations:			
270.62(b)(7)(i)	Quantitative analysis of the trial POHCs in the waste feed to the incinerator			
270.62(b)(7)(ii)	Quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, oxygen, & hydrogen chloride			
270.62(b)(7)(iii)	Quantitative analysis of the scrubber water (if any), ash residues, and other residues for the purpose of estimating the fate of the trial POHCs			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.62(b)(7)(iv)	Computation of destruction and removal efficiency (DRE) in accordance with the DRE formula specified in 264.343a			
270.62(b)(7)(v)	If the HCl emission rate exceeds 1.8 Kg/Hour (4 lbs/hour), a computation of HCl removal efficiency in accordance with 264.343b			
270.62(b)(7)(vi)	A computation of particulate emissions, in accordance with 264.343c			
270.62(b)(7)(vii)	Identification of sources of fugitive emissions and their means of control			
270.62(b)(7)(viii)	A measurement of average, maximum and minimum temperatures and combustion gas velocity			
270.62(b)(7)(ix)	A continuous measurement of carbon monoxide in the exhaust gas			
270.62(b)(7)(x)	Such other information as the Secretary may specify			
270.62(b)(8)	Trial burn submissions (data and certification) within 90 days			
270.19(c)	In lieu of trial burn applicant may submit:			
270.19(c)(2)	Incinerator plans and specifications			
270.19(c)(2)(i)	Manufacturer's name and model number			
270.19(c)(2)(ii)	Type of incinerator			
270.19(c)(2)(iii)	Linear dimensions of incinerator unit including cross-sectional area of combustion chamber			
270.19(c)(2)(iv)	Description of auxiliary fuel system (type, feed)			
270.19(c)(2)(v)	Capacity of prime mover			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.19(c)(2)(vi)	Description of automatic waste feed cut-off system(s)			
270.19(c)(2)(vii)	Stack gas monitoring and pollution control equipment			
270.19(c)(2)(viii)	Nozzle and burner design			
270.19(c)(2)(ix)	Construction materials			
270.19(c)(2)(x)	Location and description of temperature, pressure and flow indicating devices and control devices			
270.62(c)	Post Trial Burn Period			
270.62(c)	For operation during the post trial burn period and before final permit modification, the Secretary may establish permit conditions including but not limited to:			
270.62(c)	Conditions necessary to meet the performance standard in 264.343			
264.343	Performance standards			
264.343(a)	99.99% DRE for each POHC in the permit			
264.343(a)(2)	99.9999% DRE of listed wastes F020, F021, F022, F023, F026 and F027			
264.343(a)(2)	Notification of intent to incinerate listed wastes F020, F021, F022, F023, F026 and F027			
264.343(b)	HCl removal to less than 1.8 kg/hour or 1% of HCl in the stack gas prior to entering any pollution control equipment			
264.343(c)	Particulate matter removal			
264.343(d)	Operating conditions compliance with performance standards			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
270.62(c)(1)	Restrictions on waste constituents			
270.62(c)(1), 264.345(b)(2)	Waste feed rates			
270.62(c)(1)	Operating parameters in 264.345			
264.345(b)(1)	Stack gas CO level			
264.345(b)(2)	Feed rate			
264.345(b)(3)	Combustion temperature			
264.345(b)(4)	Indicator(s) of combustion gas velocity			
270.62(b)(2)(vi)	A description of, and planned operating conditions for, any emission control equipment which will be used			
264.345(c)	Precluded waste feed during start-ups and shut-downs			
270.62(b)(2)(vii)	Procedures for rapidly stopping waste feed, shutting down the incinerator and controlling emissions in the event of an equipment malfunction.			
264.345(d)	Control of fugitive emissions from combustion zone			
264.345(e)	Automatic waste feed cut-off			

II.A.4.b.(9)

**REVIEW CHECKLIST
FOR
CORRECTIVE ACTION MANAGEMENT UNIT (CAMU)
(§ 264.552)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(a)(2)	Consolidation or placement of remediation waste into or within a Corrective Action Management Unit (CAMU) does not constitute creation of a new unit and trigger minimum technology requirements			
§ 264.552(b)(1)	The Regional Administrator may designate a regulated unit as a CAMU, or may incorporate a regulated unit into a CAMU if:			
§ 264.552(b)(1)(i)	the regulated unit is closed or closing			
§ 264.552(b)(1)(ii)	inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility			
§ 264.552(b)(2)	Subpart F, G, and H that applied to the regulated unit will continue to apply to that portion of the CAMU that was a regulated unit.			
§ 264.552(c)	The Regional Administrator shall designate a CAMU in accordance with the following:			
§ 264.552(c)(1)	The CAMU shall facilitate the implementation of reliable effective protective and cost effective remedies			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(c)(2)	Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous waste or hazardous constituents;			
§ 264.552(c)(3)	The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility			
§ 264.552(c)(4)	Areas within the CAMU, where waste remains in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;			
§ 264.552(c)(5)	The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(c)(6)	The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and			
§ 264.552(c)(7)	The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU			
§ 264.552(d)	The owner/operator shall provide sufficient information to enable the Regional Administrator to designate a CAMU in accordance with the criteria in § 264.552			
§ 264.552(e)	The Regional Administrator shall specify, in the permit or order, requirements for CAMUs to include the following:			
§ 264.552(e)(1)	the areal configuration of the CAMU			
§ 264.552(e)(2)	requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(e)(3)	requirements for ground water monitoring that are sufficient to:			
§ 264.552(e)(3)(i)	continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU.			
§ 264.552(e)(3)(ii)	detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.			
§ 264.552(e)(4)	Closure and Post Closure Requirements:			
§ 264.552(e)(4)(i)	closure of corrective action management units shall:			
§ 264.552(e)(4)(i)(A)	minimize the need for further maintenance			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(e)(4)(i) (B)	control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to the surface waters, or to the atmosphere			
§ 264.552(e)(4)(ii)	requirements for closure of a CAMU shall include the following, as appropriate and as deemed necessary by the Regional Administrator for a given CAMU			
§ 264.552(e)(4)(ii) (A)	requirements for excavation, removal, treatment or containment of waste			
§ 264.552(e)(4)(ii) (B)	for areas in which waste will remain after closure of the CAMU, requirements for capping of such areas;			
§ 264.552(e)(4)(ii) (C)	requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(e)(4)(iii)	in establishing specific requirements for CAMUs under § 264.552(e), the Regional Administrator shall consider the following:			
§ 264.552(e)(4)(iii) (A)	CAMU characteristics			
§ 264.552(e)(4)(iii) (B)	volume of waste which remains in place after closure			
§ 264.552(e)(4)(iii) (C)	potential for release from the CAMU			
§ 264.552(e)(4)(iii) (D)	physical and chemical characteristics of the waste			
§ 264.552(e)(4)(iii) (E)	hydrogeological and other relevant environmental conditions at the facility which may influence migration of any potential or actual releases;			
§ 264.552(e)(4)(iii) (F)	potential for exposure of humans and environmental receptors if releases were to occur from the CAMU			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(e)(4)(iv)	Post-Closure requirements as necessary to protect human health and the environment, to include, for areas where waste will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system			
§ 264.552(f)	The Regional Administrator shall document the rationale for designating CAMUs and shall make such documentation available to the public			
§ 264.552(g)	incorporation of a CAMU into an existing permit must be approved by the Regional Administrator according to the procedures for Agency-initiated permit modifications under § 270.41, or			
264.552(g)	incorporation of a CAMU into an existing permit must be approved by the Regional Administrator according to the procedures for owner/operator requested permit modifications under § 270.42			

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264.552(h)	The designation of a CAMU does not change the regulatory agency's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions			

**REVIEW CHECKLIST
FOR
TEMPORARY UNIT (CORRECTIVE ACTION)
(§264.553)**

FACILITY:

**DOCUMENT
TITLE:**

**DOCUMENT
DATE:**

UNIT:

**TYPE OF
PERMIT:**

REVIEWER:

**DATE OF
REVIEW:**

Regulatory Citation(s):	Requirement:	Provided: Yes/No/NA	Location:	Comments:
§ 264 553(a) NOTE: Treatment in tanks at a Temporary Unit does not include Modu Tanks or Subpart X Treatment in tanks.	Temporary Units (TU) may be container storage or tank systems for storage or treatment only. This application is for:			
§ 264	Tanks for storage of remediation waste			
§ 264	Tanks for treatment of remediation waste			
§ 264	Container storage for remediation waste			
§ 264	Container storage for remediation waste			
§ 264	Alternate design determination by the Regional Administrator			
§ 264 553(b)	Alternative requirement of TUs:			
§ 264 552(b)(1)	Temporary Unit must be located within a currently permitted or interim status facility boundary			
§ 264 553(b)(2)	Temporary Units must be used only for treatment and/or storage of remediation waste			