ORIGINAL

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SUPPORTING DOCUMENT

Number	Rev No.	Page
SD-RE-TI-219	0	A of 120 Total Pages

Document Title:

Regulatory Analysis Flowsheet

Program

Waste Management

Key Words:

Flowsheet, SUA, Overview Flowsheet, Subflowsheet, Stream, Unit, Activity

Prepared by (Name, Dept. No. and Signature)

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See reverse side for additional approvals

Abstract

The purpose of the Regulatory Analysis Flowsheet (Flowsheet) is to document the determination of which laws, regulations and/or Department of Energy (DOE) Orders are applicable to each environmental stream, management unit and/or activity (SUA) at the Hanford Site.

This Flowsheet is a series of logic diagrams that allows a person with general acquaintance of the environmental requirements to document in a step-wise fashion the decision process that was used to determine which specific regulations apply to SUA. The Flowsheet is divided into the following two basic parts: an Overview Flowsheet, which is contained in Section 2.0, and series of Subflowsheets, which are contained in Section 3.0. Background information on the statues, DOE Orders and a glossary is contained in Section 4.0.

The Overview Flowsheet acts as a course filtering mechanism to determine which statues, DOE Orders and a few regulations apply to each SUA. The Overview Flowsheet considers 14 statues and 15 DOE Orders. The appropriate Subflowsheets are determined in the Overview Flowsheet. The Subflowsheets in turn determine which specific regulations are applicable. The regulations are the requirements that the inspectors utilize during inspections and audits. There are 12 Subflowsheets.

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Summary of Revision

Complete Revision ☐ Page Change ☐ Editorial Corrections ☐

DESCRIPTION OF CHANGE

	INITIAL RELEASE AND CHANGE CONTROL RECORD	(2) Document Number SD-RE-TI-219	Page C
		INITIAL RELEASE	
(1) Title Regulatory Analysis Flowsheet		(3) Cognizant/Project Engineer D. P. Hutchison	Date 3/31/88
		(4) Cognizant/Project Manager S. A. Wiegman	Date 4/1/88
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CHANGE CONTROL RECORD

(6) Revision	(7) Description of Change – Replace, Add, and Delete Pages	Authorized for Release		
		(8) Cog./Proj. Engr.	(9) Cog./Proj. Mgr	Date

1.0 Overview

REGULATORY ANALYSIS FLOWSHEET

Table of Contents

Table of Contents

1.0 OVERVIEW

1.1 PURPOSE

The purpose of the Regulatory Analysis Flowsheet (Flowsheet) is to document the determination of which laws, regulations, and/or U.S. Department of Energy (DOE) Orders are applicable to each environmental stream, management unit, and/or activity (SUA) at the Hanford Site.

This Flowsheet is a part of the Regulatory Analysis (i.e., Step 2) of the Environmental Compliance Tracking Strategy (SD-SQA-TI-016) which is outlined in Figure 1-1. This flowsheet is only part of the Regulatory Analysis step because it does not determine which regulatory checklist is needed to perform an inspection or audit.

1.2 SUMMARY

This Flowsheet is a series of logic diagrams that allows a person with general acquaintance with the environmental requirements to document the decision process that was used to determine which specific regulations apply to SUA. The Flowsheet is divided into the following two basic parts: an Overview Flowsheet which is contained in Section 2.0, and a series of Subflowsheets which are contained in Section 3.0. Background information on the statutes, DOE Orders, and a glossary are contained in Section 4.0.

The Overview Flowsheet acts as a coarse filtering mechanism to determine which statutes, DOE Orders, and regulations apply to each SUA. The Overview Flowsheet considers 14 statutes and 15 DOE Orders. The appropriate Subflowsheets are determined from tracing through the Overview Flowsheet. In turn, tracing through the Subflowsheets allows the user to determine which specific regulations are applicable. The regulations are the requirements that the inspectors use during inspections and audits. There are 12 Subflowsheets.

1.3 EXAMPLE

A sample Flowsheet is given below for the B Plant main stack to illustrate the use of the flowsheet. Usage has been broken down into six steps.

1.3.1 Step 1--Identify Stream, Unit, and/or Activity

Identify the SUA to be evaluated. Any level of aggregation can be reviewed using the flowsheets, from a waste stream to a complex processing plant. The higher the level of aggregation, the more regulatory citations likely to be identified as relevant. As a consequence, it may be easier to break large plants into individual units or waste streams and separately evaluate each. The regulatory requirements applicable to the whole plant can then be reaggregated.

1.3.2 Step 2--Characterize the Stream, Unit, and/or Activity

Characterize the operation and associated waste streams. A sufficiently detailed characterization is required to indicate the materials being handled, the activities that are performed, the equipment and facility involved, and the makeup of all waste streams. The operations and facilities descriptions can be summary statements pulled together by operations staff. Waste stream data can be obtained from the waste stream characterization forms, like the sample form from the B Plant Example, being employed for the compliance assessments. The key is to obtain sufficient information to answer the questions posed in the decision diamonds on each flowsheet. A glossary for the overview flowsheet (Section 4.3) is provided to define the terms used in the decision diamonds. If the evaluation is being conducted in response to a change order (e.g., process modification or material replacement), the characterization should highlight the features that

have been changed. This will help relate regulatory requirement impacts to individual process modifications. If the evaluation is being made in response to regulatory changes, previous characterization data can be used as input.

1.3.3 Step 3--Determine Statute and/or DOE Order

Determine all relevant statutes and DOE Orders. This step is performed by moving through the Overview Flowsheet. At each decision point, the query is answered and the appropriate flowpath taken. If the process is being manually performed, the path may be marked in color to illustrate the responses. The sample overview flowsheet for the main stack at B Plant has been darkened to show movement through the flowsheet. Whenever a program box is encountered, it should be listed in the left-hand column of a worksheet such as that illustrated in Figure 1-2b. If the regulatory box includes a citation to the Code of Federal Regulations (CFR), the Washington Administrative Code (WAC), or a DOE Order, the citation should be entered in the right-hand column across from the regulatory designation. If the regulatory designation is followed by a code number, the code number should be entered after the regulatory designation (e.g., RCRA-SFS 3.4). In this way, relevant regulatory programs are listed on the worksheet for subsequent analysis of their own subflowsheets. Figure 1-2d has been completed to reflect relevant programs for the main stack at B Plant.

1.3.4 Step 4--Determine Regulatory Citations

Determine relevant regulatory citations. Step 4 is conducted in the same manner as Step 3 using the subflowsheets entered on the worksheet. In this case, progress through the subflowsheet will identify additional CFR and WAC citations of relevance. Each citation is listed in the right-hand column of the worksheet opposite the regulatory program from which it is derived. Upon completion of the secondary worksheets, there should be at least one citation for each relevant regulatory program.

1.3.5 Step 5--Review Text

Determine specific regulatory requirements. By entering the citations listed on the worksheet or the specified DOE Order, the complete text can be reviewed. This will specify regulatory requirements. Taken in the aggregate, the requirements represent all compliance items for the operation or waste stream that has been evaluated.

1.3.6 Step 6--Update with Operational and/or Regulatory Change

Re-evaluate regulatory compliance status whenever a change in operations or regulations occurs. These updates will be done as part of Environmental Tracking System's Step 3.1--Regulatory Change Control and Step 3.2--Operation Change Control. Process change may require compliance with additional or fewer regulatory requirements. In order for the flowsheets to be completely effective, the user must re-evaluate the compliance status of SUA whenever a process change occurs.

Figure 1-1
Logic Flow of Data Tracking Strategy

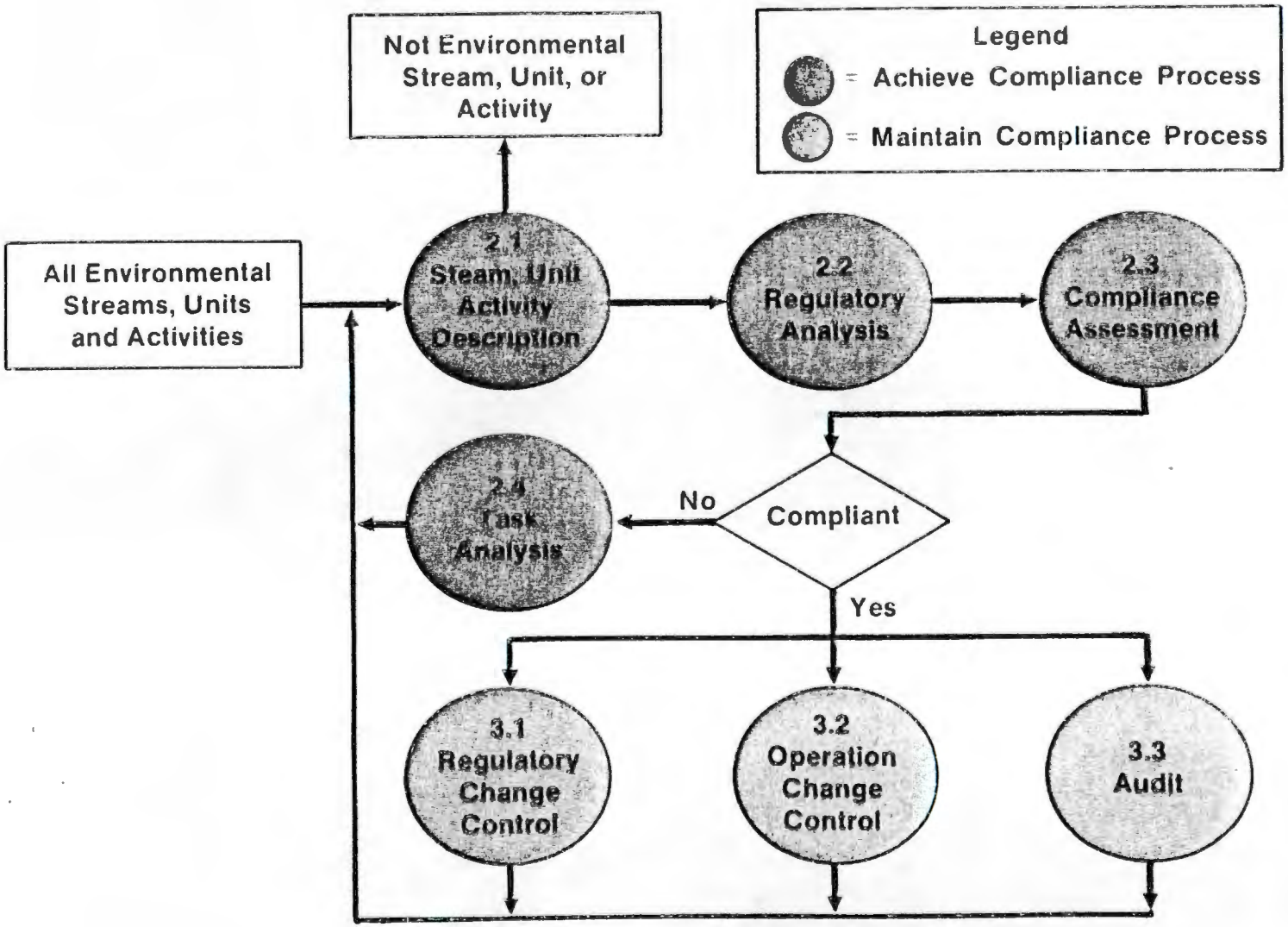


Figure 1-2a (1 of 3)

Example Stream, Unit, Activity Identification Form

Prepared by: Kat Hagerty Title: BPPE Date: 10/12/87

Gaseous Emissions (Forced and Vented)

I. Stream Identification

1. Name: 291-B-1 Other name(s): B-Plant main stack

Brief Description (one or two sentences):
B-plant Canyon exhaust

2. Discharge

Origin:		Point of discharge:	
Building:	221-B	Building:	291-B-1 stack
Room:		Room:	
Cell:	All	Cell:	
Vessel:		Vessel:	

Comment(s):
All 221-B process cell ventilation, incl. vessel vent #1

3. Volume of total discharge
cfm: 35,000
per batch:

4. Frequency X continuously
periodically how frequent

II. Constituents

1. Are any of the following pollutants exhausted to the environment? (More than one item may be checked. Estimate the concentrations, indicate by year(s) whether past data is available, indicate whether the stream is currently sampled by using a "G" to indicate grab sampling or a "C" to indicate continuous sampling, indicate with a "yes" or "no" whether testing is needed.)

Yes	No		Amount Released	Past Sampling Data Available?	Is it Sampled?	Is Data Needed?
	X	Carbon Monoxide				
	X	Nitrogen Oxides				
	X	Sulfur Dioxide				
X		Particulate Matter	unk	NO	NO	unk
X		Volatile Organic		NO	NO	NO

→ 50 lbs 1,1,1 Trichloroethane or 50 lbs from 113 used approximately once/yr.

Figure 1-2a (2 of 3)
Example Stream, Unit, Activity Identification Form

		Compounds*			
—	—	Lead			
—	—	Asbestos			
—	—	Beryllium			
—	—	Mercury			
—	—	Vinyl Chloride			
—	—	Fluorides			
—	—	Sulfuric Acid mist			
—	—	Hydrogen Sulfide			
—	—	Total reduced Sulfur (including H2S)			
—	—	Reduced Sulfur Compounds (including H2S)			
		Radionuclides.			
—	—	tritium			
—	—	carbon-14			
X	—	strontium-90			
—	—	ruthenium-106			
—	—	iodine-129			
X	—	cesium-137			
—	—	krypton			
X	—	uranium			
—	—	iodine			
—	—	radon			
—	—	cobalt-60			
—	—	iodine-131			
—	—	indium-113m			
—	—	antimony-125			
—	—	TRU-THC			
—	—	plutonium-239/240			
—	—	americium-241			
—	—	cerium-144			
—	—	Thermal			
—	—	Other			
—	—	Other			
—	—	Other			

Comment(s):

Does the emission exceed 20% opacity?

ND

Figure 1-2a (3 of 3)
Example Stream, Unit, Activity Identification Form

III. Management

1. Treatment. (More than one item may be checked.)

Yes	No	
___	X	baghouse filter
X	___	HEPA filter
___	X	other: _____

A. Describe the treatment system and how treatment residuals are managed.

3 banks of 99.997% DOP tested HEPA filters

B. Is the discharge pretreated?

NO

2. Permit

A. Is the discharge permitted? Under what permit? Please provide a copy of the permit.

NO

Figure 1-2b
Example of Regulatory Compliance Flow Path Worksheet

FIGURE 2

Regulatory Compliance Flowpath Worksheet

Regulatory Programs	Citation
CAA SFS 3.9	WAC 173-480

DOE Orders

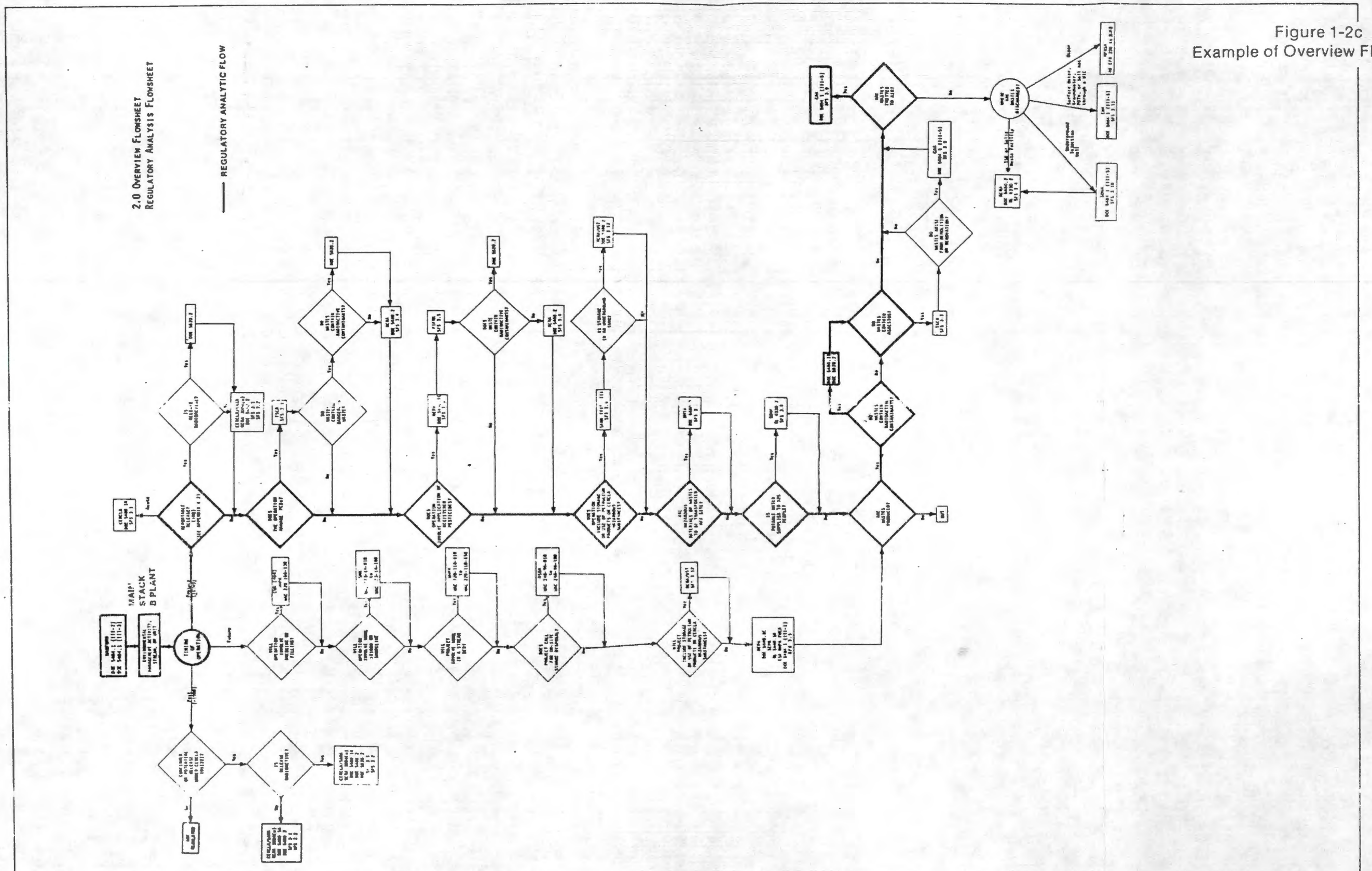
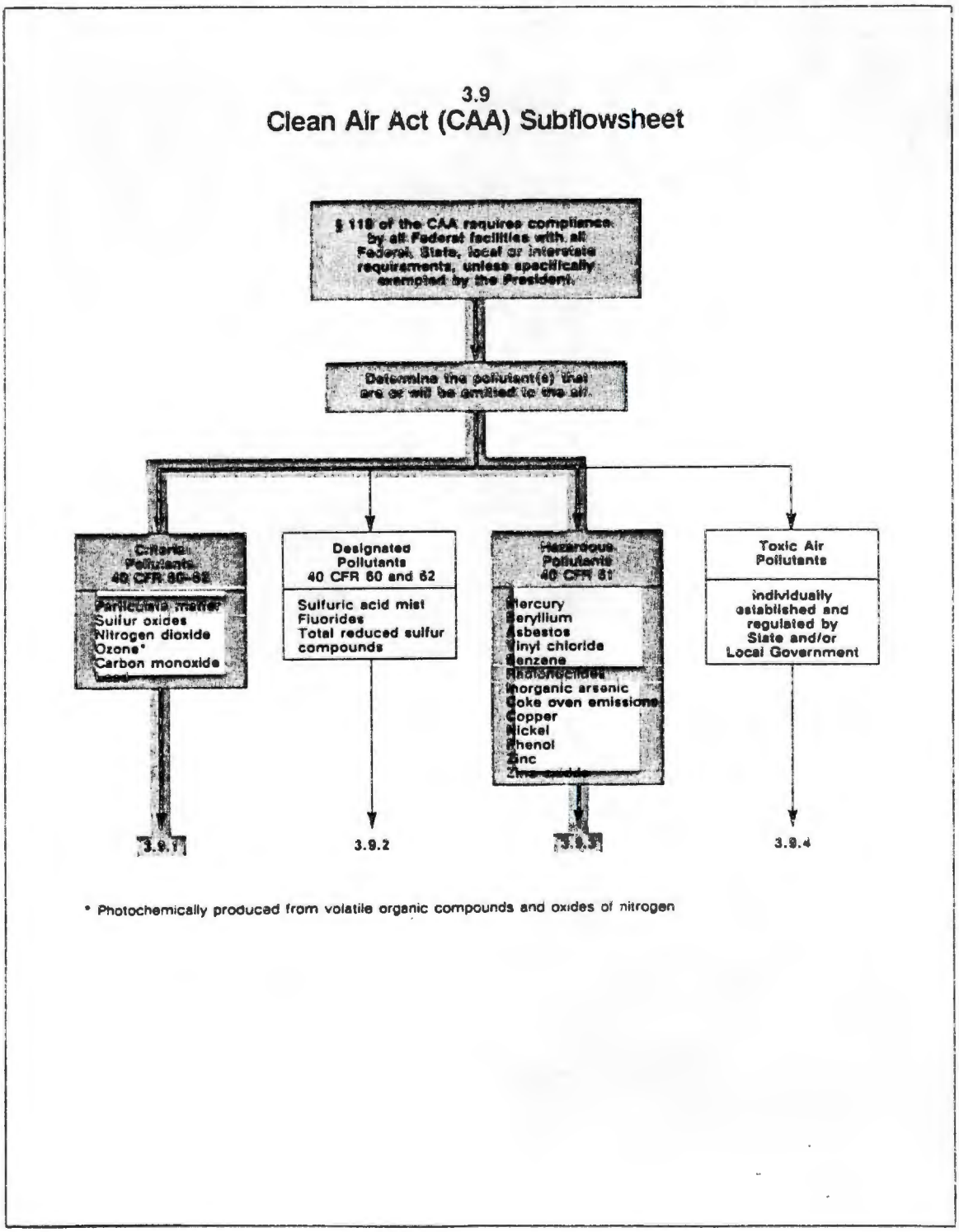


Figure 1-2c
Example of Overview Flow Sheet

Figure 1-2d
Example of Clean Air Act (CAA) Sub Flow Sheet



* Photochemically produced from volatile organic compounds and oxides of nitrogen

Figure 1-2e
Example of Criteria Pollutants Sub Flow Sheet

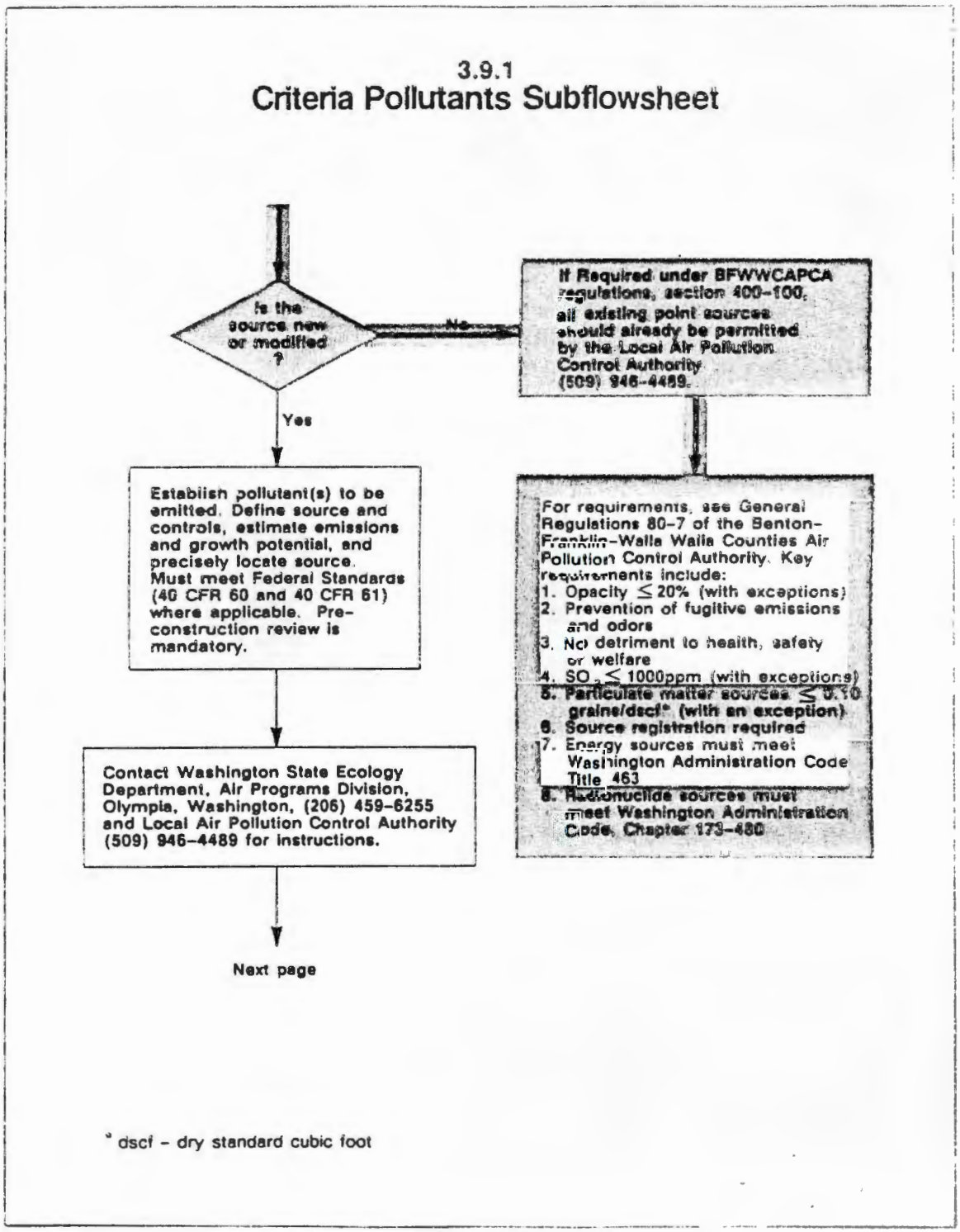


Figure 1-2f
Example of Hazardous Pollutants Sub Flow Sheet

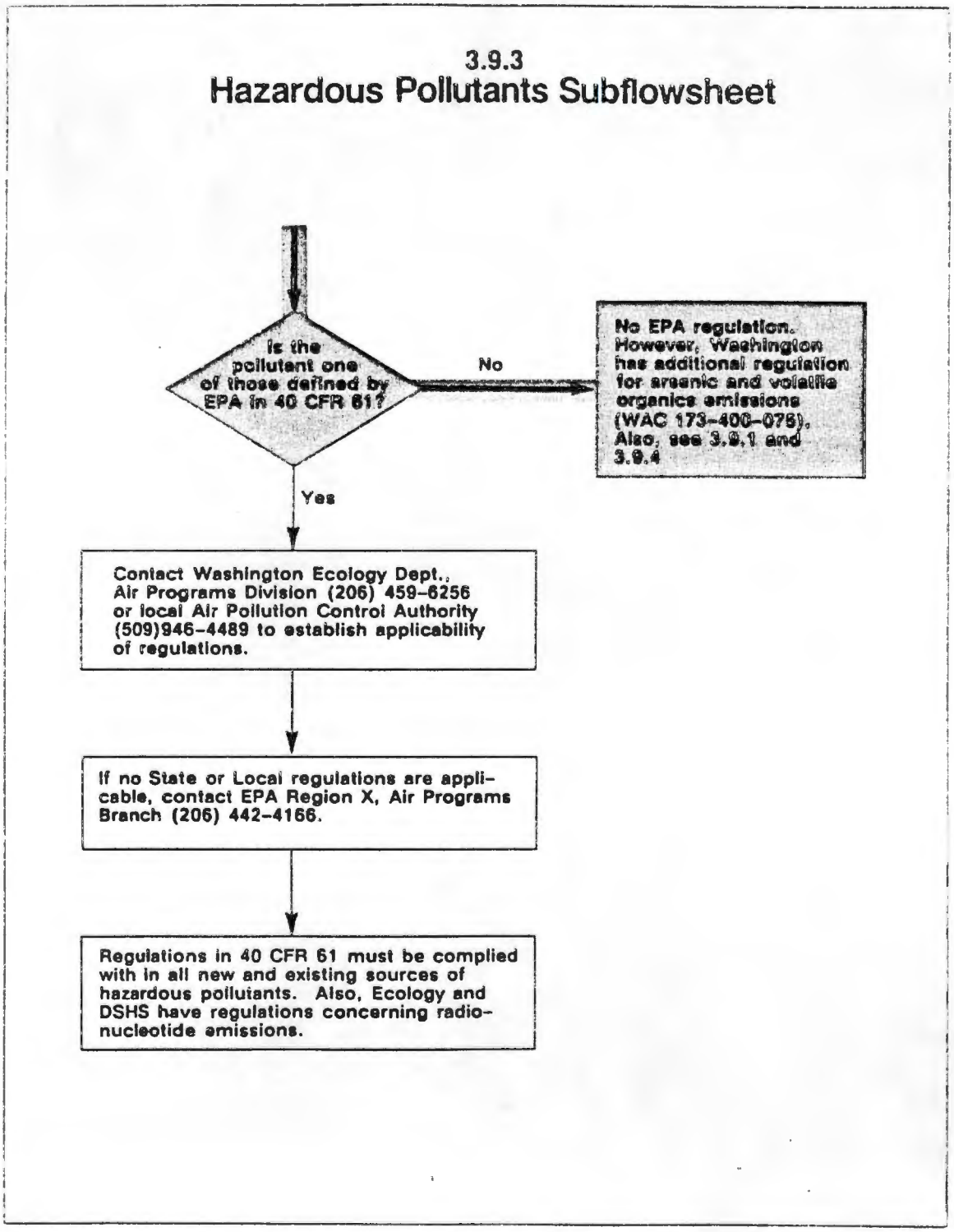
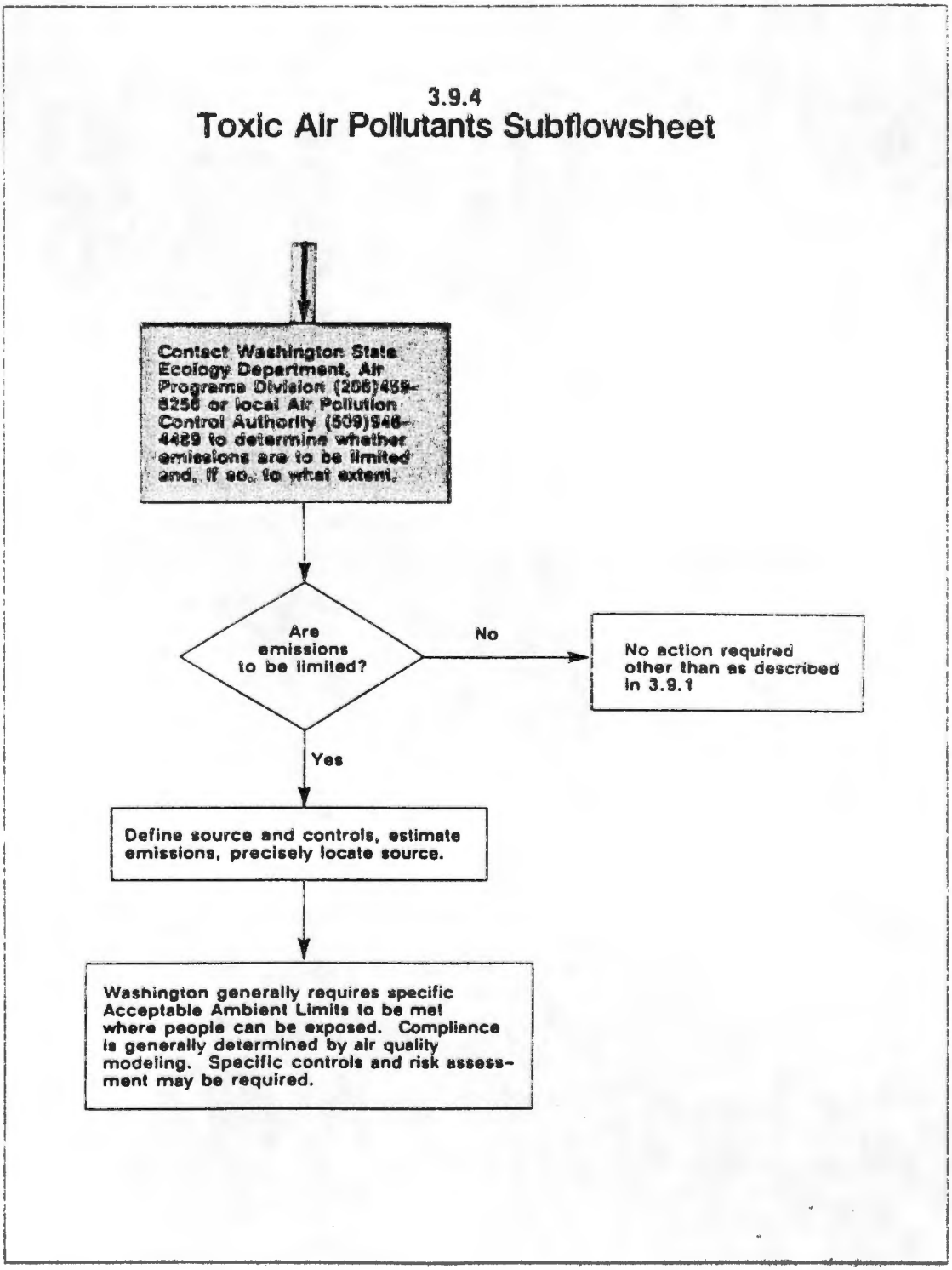


Figure 1-g
Example of Toxic Pollutants Sub Flow Sheet



2.0 Overview Flowsheet

2.0 OVERVIEW FLOWSHEET

The Overview Flowsheet acts as a coarse filtering mechanism to determine which statutes, DOE Orders, and regulations apply to each SUA. The Overview Flowsheet considers 15 statutes and 15 DOE Orders. An example of how to use the Overview Flowsheet is contained in Section 1.3.

The 15 statutes considered are listed below:

Clean Air Act

Comprehensive Environmental Response, Compensation, and Liability Act

Clean Water Act

Endangered Species Act

Federal Insecticide, Fungicide, and Rodenticide Act

Hazardous Liquid Pipeline Safety Act

Hazardous Materials Transportation Act

Hydraulic Projects Act

Marine Protection, Research, and Sanctuaries Act

National Environmental Policy Act

Natural Gas Pipeline Safety Act

Noise Control Act

On-Site Sewage Disposal Act

Resource Conservation and Recovery Act

Safe Drinking Water Act

Toxic Substances Control Act

The 15 DOE Orders are listed below:

DOE N 5400.1 -- Environmental Policy Statement

RL 5440.1A -- Implementation of the National Environmental Policy Act at the Richland Operations Office

DOE 5440.1C -- National Environmental Policy Act

DOE 5480.2 -- Radioactive Waste Management

DOE 5480.3 -- Safety Requirements for the Packaging and Transportation of Hazardous Material; Hazardous Substances; and Hazardous Wastes

RL 5480.4 -- Environmental Protection, Safety, and Health Protection Standards for RL

DOE 5480.14 -- Comprehensive Environmental Response, Compensation, and Liability Act Program

DOE 5482.1B -- Environment, Safety, and Health Appraisal Program

RL 5482.1B -- Environment, Safety, Health, and Quality Assurance Appraisal and Surveillance Program

DOE N 5820.2 -- Radioactive Waste Management

DOE 5484.1 -- Environmental Protection, Safety, and Health Protection Information Reporting Requirements

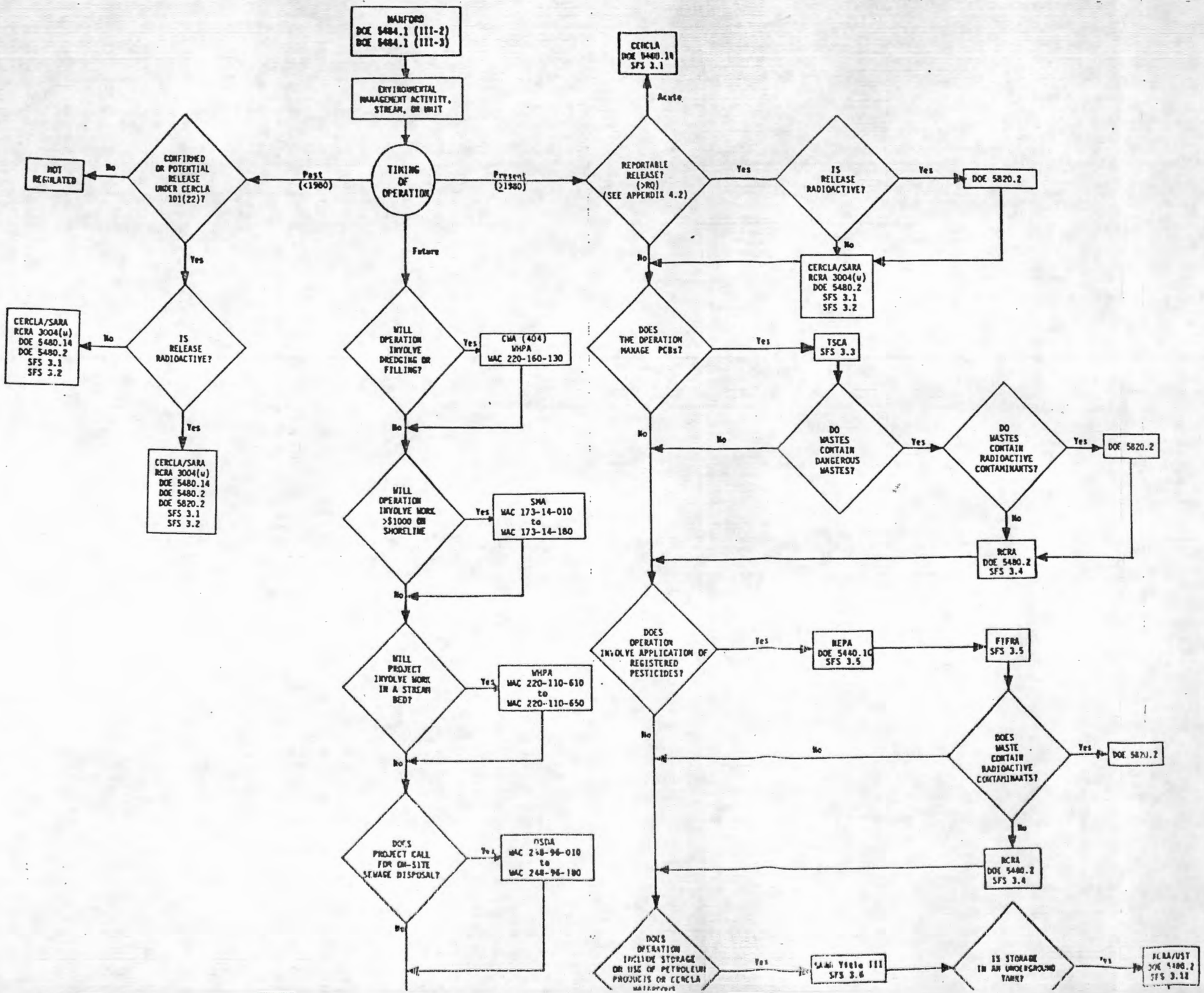
DOE 5480.4 -- Environmental Protection, Safety, and Health Protection Standards

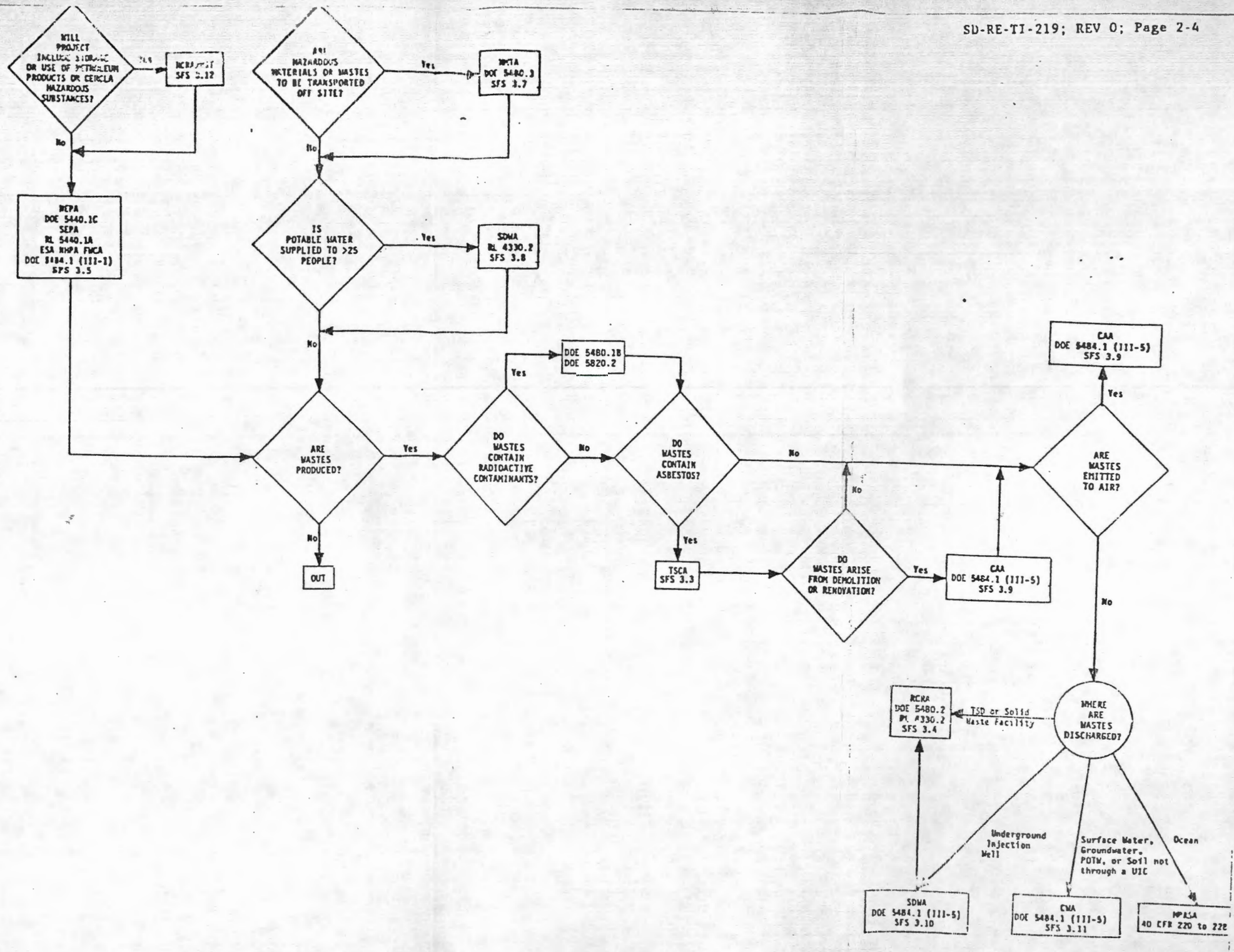
DOE 5480.1B -- Environment, Safety, and Health Program for Department of Energy Operations

RL 4330.2 -- Water Treatment Plants and Distribution Systems

DOE 6430.1 -- General Design Criteria

2.0 Overview Flowsheet
Regulatory Analysis Flowsheet




WILL PROJECT INCLUDE STORAGE OR USE OF PETROLEUM PRODUCTS OR CERCLA HAZARDOUS SUBSTANCES?
Yes
RCRA/UST SFS 3.12
No
NEPA DOE 5440.1C SEPA RL 5440.1A ESA NHPA FWCA DOE 5484.1 (III-1) SFS 3.5
ARE HAZARDOUS MATERIALS OR WASTES TO BE TRANSPORTED OFF SITE?
Yes
HMTA DOE 5480.3 SFS 3.7
No
IS POTABLE WATER SUPPLIED TO >25 PEOPLE?
Yes
SDWA RL 4330.2 SFS 3.8
No
ARE WASTES PRODUCED?
Yes
DO WASTES CONTAIN RADIOACTIVE CONTAMINANTS?
Yes
DOE 5480.1B DOE 5820.2
No
DO WASTES CONTAIN ASBESTOS?
Yes
TSCA SFS 3.3
DO WASTES ARISE FROM DEMOLITION OR RENOVATION?
Yes
CAA DOE 5484.1 (III-5) SFS 3.9
No
No
ARE WASTES EMITTED TO AIR?
Yes
CAA DOE 5484.1 (III-5) SFS 3.9
No
WHERE ARE WASTES DISCHARGED?
TSD or Solid Waste Facility
RCRA DOE 5480.2 PL 4330.2 SFS 3.4
Underground Injection Well
Surface Water, Groundwater, POTW, or Soil not through a UIC
Ocean
SDWA DOE 5484.1 (III-5) SFS 3.10
CWA DOE 5484.1 (III-5) SFS 3.11
MPASA 40 CFR 220 to 228
OUT

3.0 Subflowsheets

3.0 SUBFLOWSHEETS

The subflowsheets determine which regulations are applicable to a particular SUA. An example of how to use the Subflowsheets is in Section 1.3. The titles of the 12 different Subflowsheets are listed below:

3.1 -- CERCLA and SARA Section 304 Subflowsheet

3.2 -- RCRA Section 3004(u) Subflowsheet

3.3 -- TSCA Material Subflowsheet

3.4 -- RCRA Subtitle C Subflowsheet

3.5 -- Pesticide Programs Subflowsheet

3.6 -- SARA Title III Notification and Reporting Subflowsheet

3.7 -- Transportation Subflowsheet

3.8 -- Water Supply System Subflowsheet

3.9 -- Clean Air Act Subflowsheet

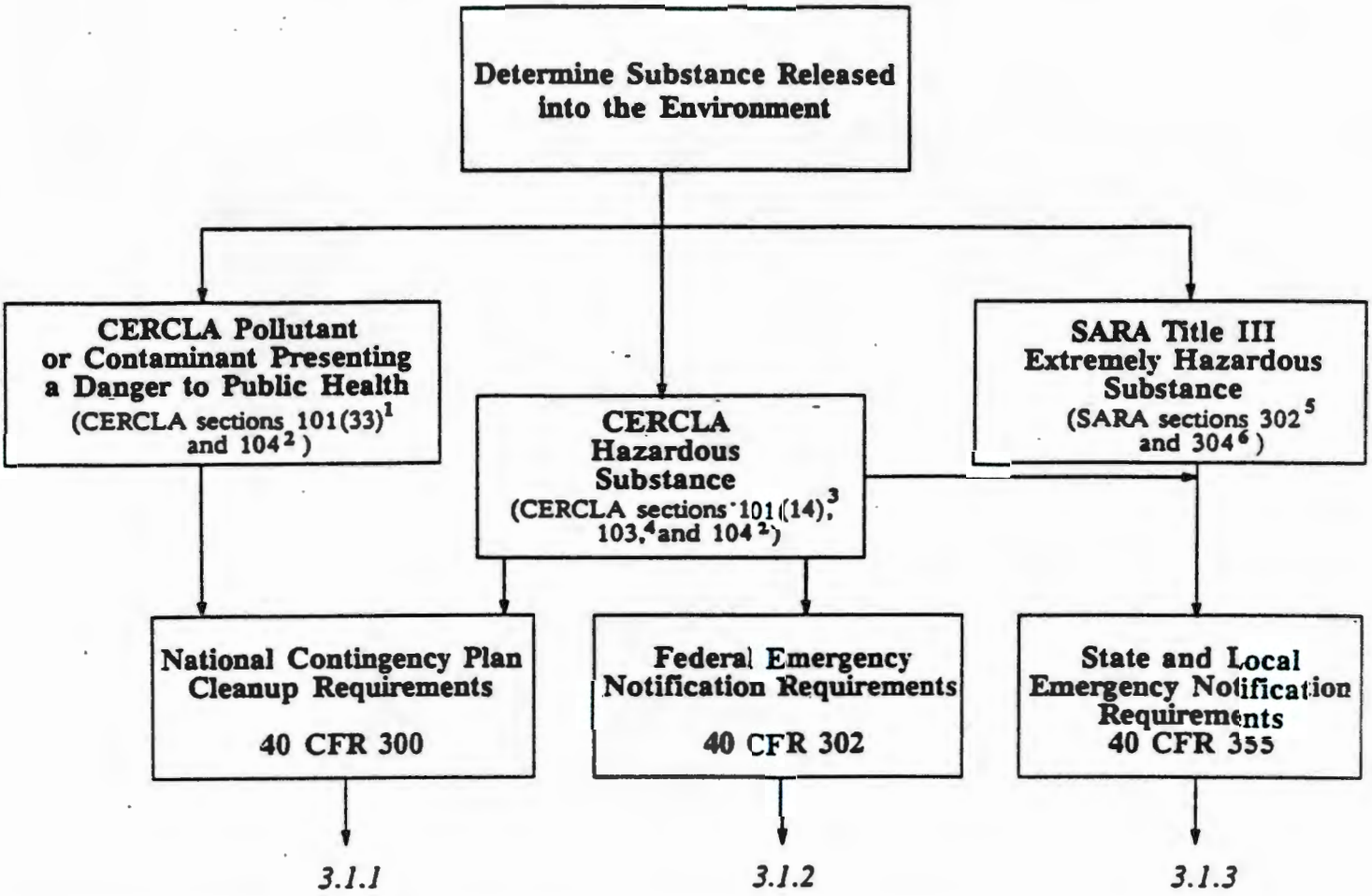
3.10 -- Underground Injection Control Well Subflowsheet

3.11 -- Water Programs Subflowsheet

3.12 -- RCRA/UST Subflowsheet

3.1 CERCLA and SARA 304 Subflowsheet

3.1
CERCLA and SARA Section 304 Subflowsheet



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[1] A "pollutant or contaminant" is any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into an organism, either directly from the environment or indirectly through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, phsiological malfuncitons (including malfunctions in reproduction) or physical deformation, in such organisms of their offspring; except that the term "pollutant or contaminant" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under section 101 (14) (see footnote 3) and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas).

[2] EPA has the authority to compel the responsible parties to clean up the hazardous waste site at their own expense, or to recover the costs of Federal actions from the responsible parties.

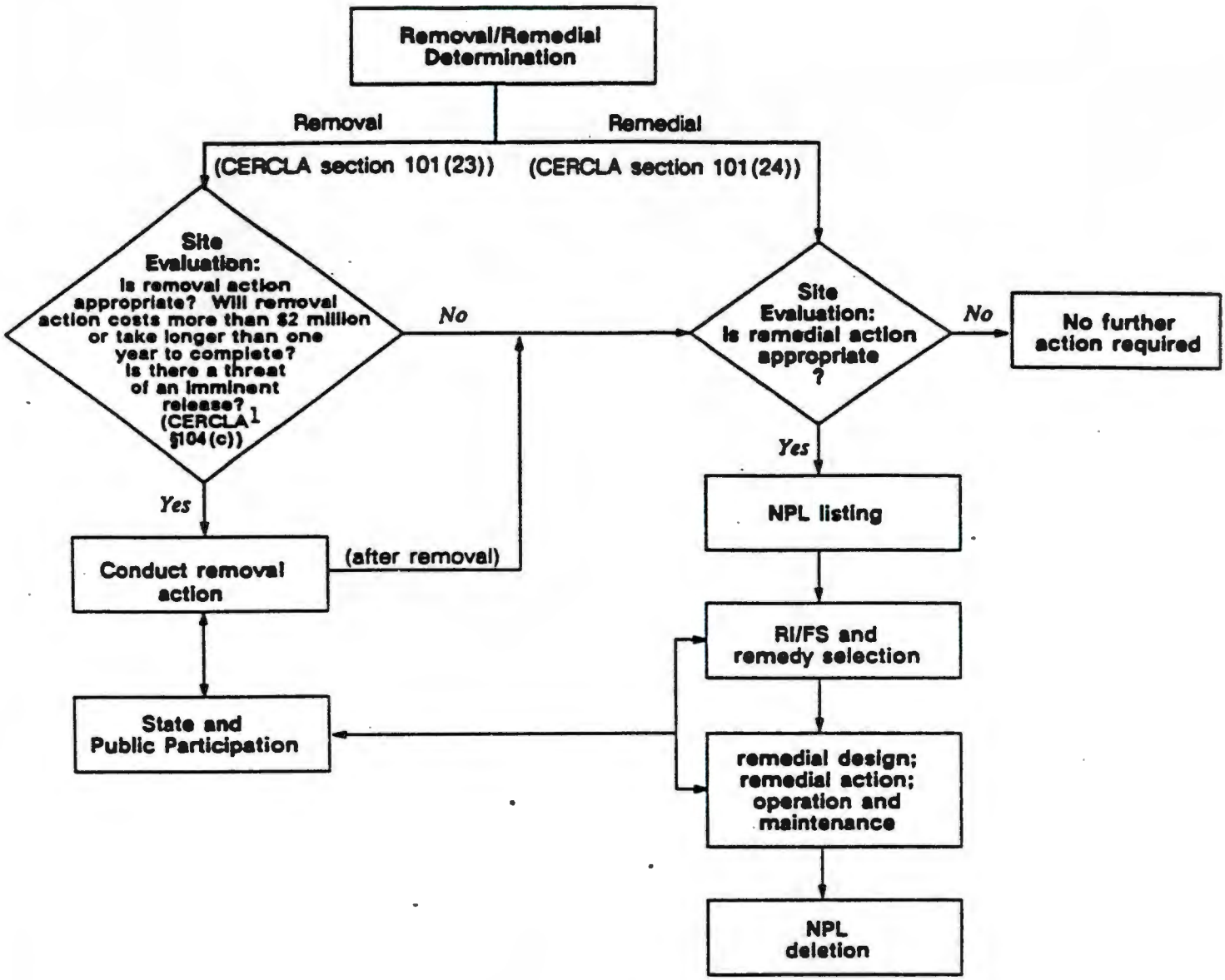
[3] A "hazardous substance" is defined by reference to substances listed pursuant to other statutes, including: the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, and the Toxic Substance Control Act.

[4] A release of a reportable quantity (RQ) or more of a hazardous substance must be reported immediately to the National Response Center.

[5] An "extremely hazardous substance" is a substance on a specific EPA list (see 40 CFR 355).

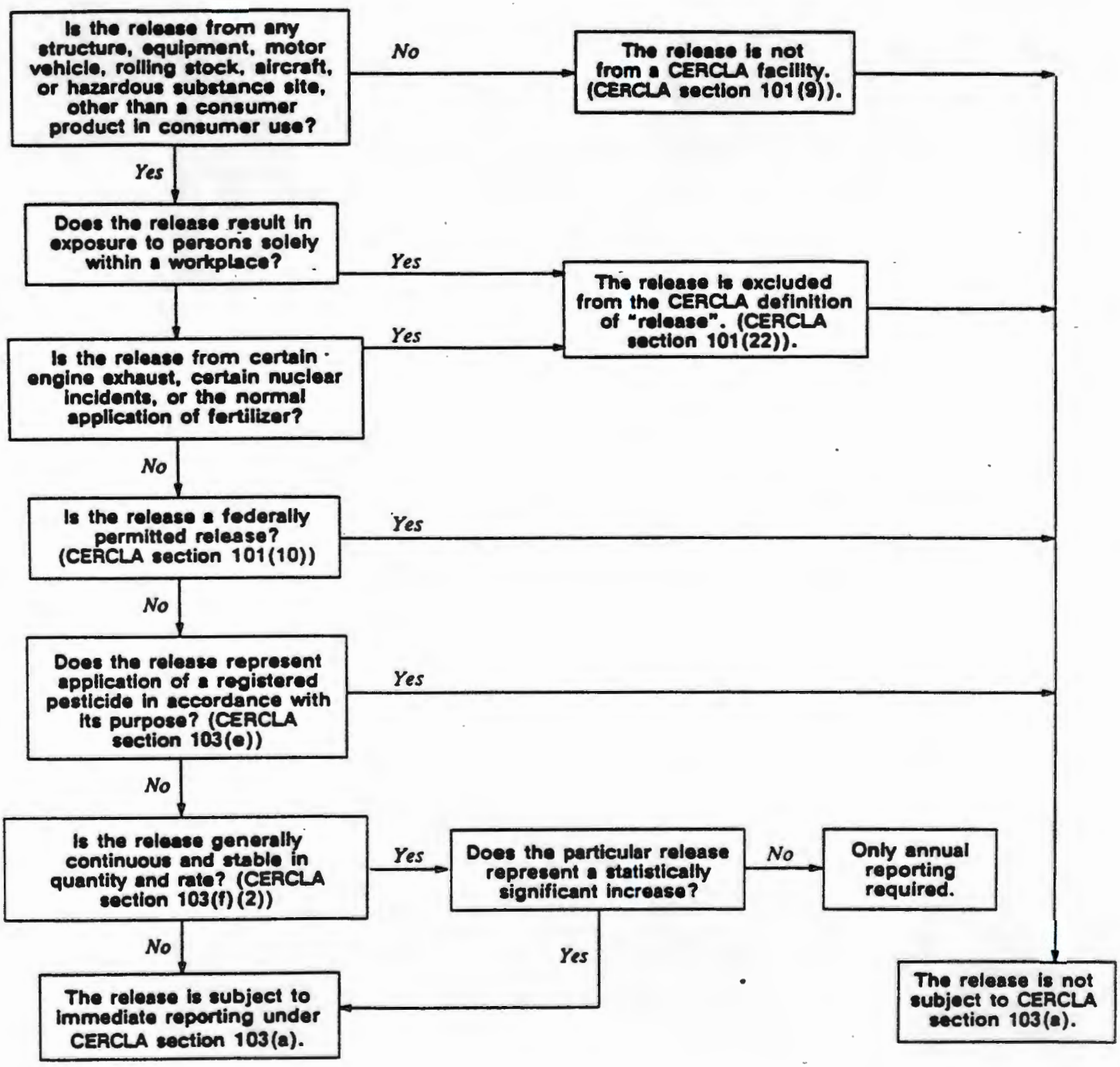
[6] A release of an RQ or more of a CERCLA hazardous substance or a pound or more of a SARA extremely hazardous substance must be reported immediately to State and Local authorities.

3.1.1
National Contingency Plan Cleanup Requirements Subflowsheet (simplified)

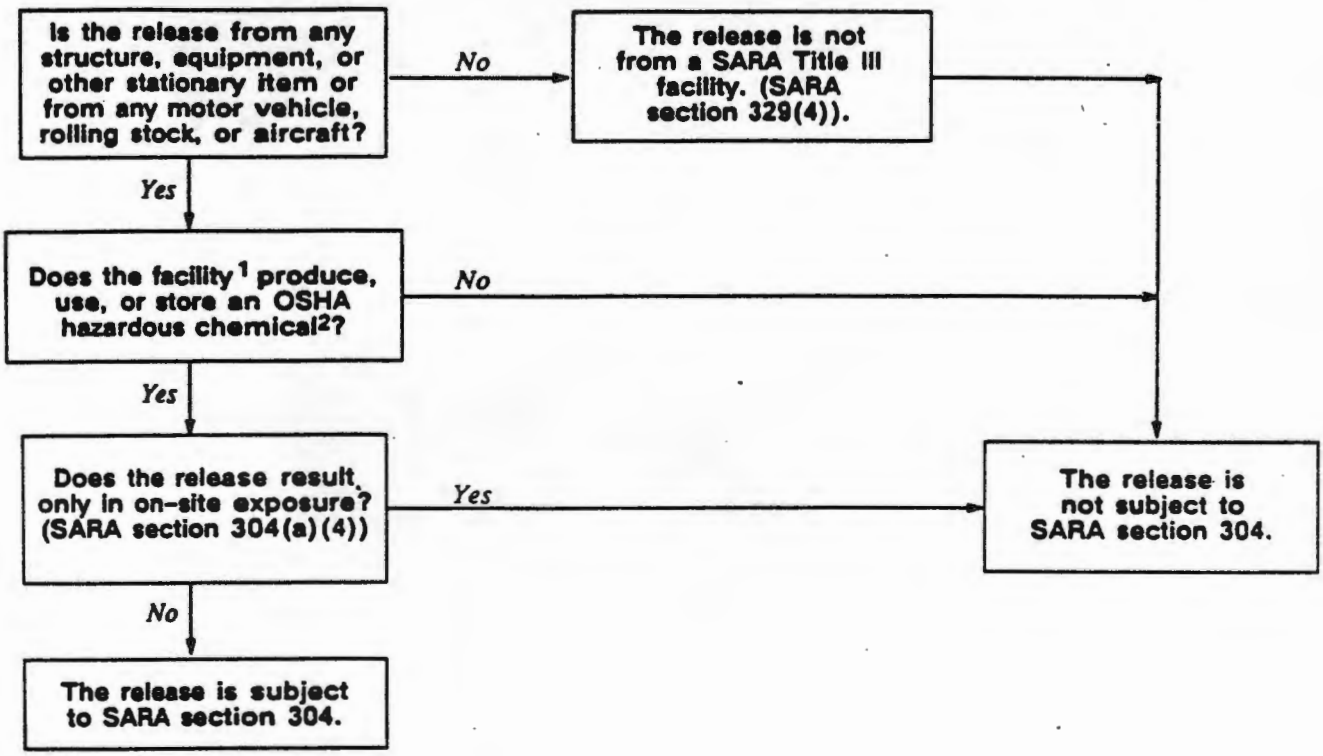


[1]A positive response to any of these questions may qualify the site for a removal action.

3.1.2
Federal Emergency Notification Requirements Subflowsheet



3.1.3
State and Local Emergency Notification Requirements

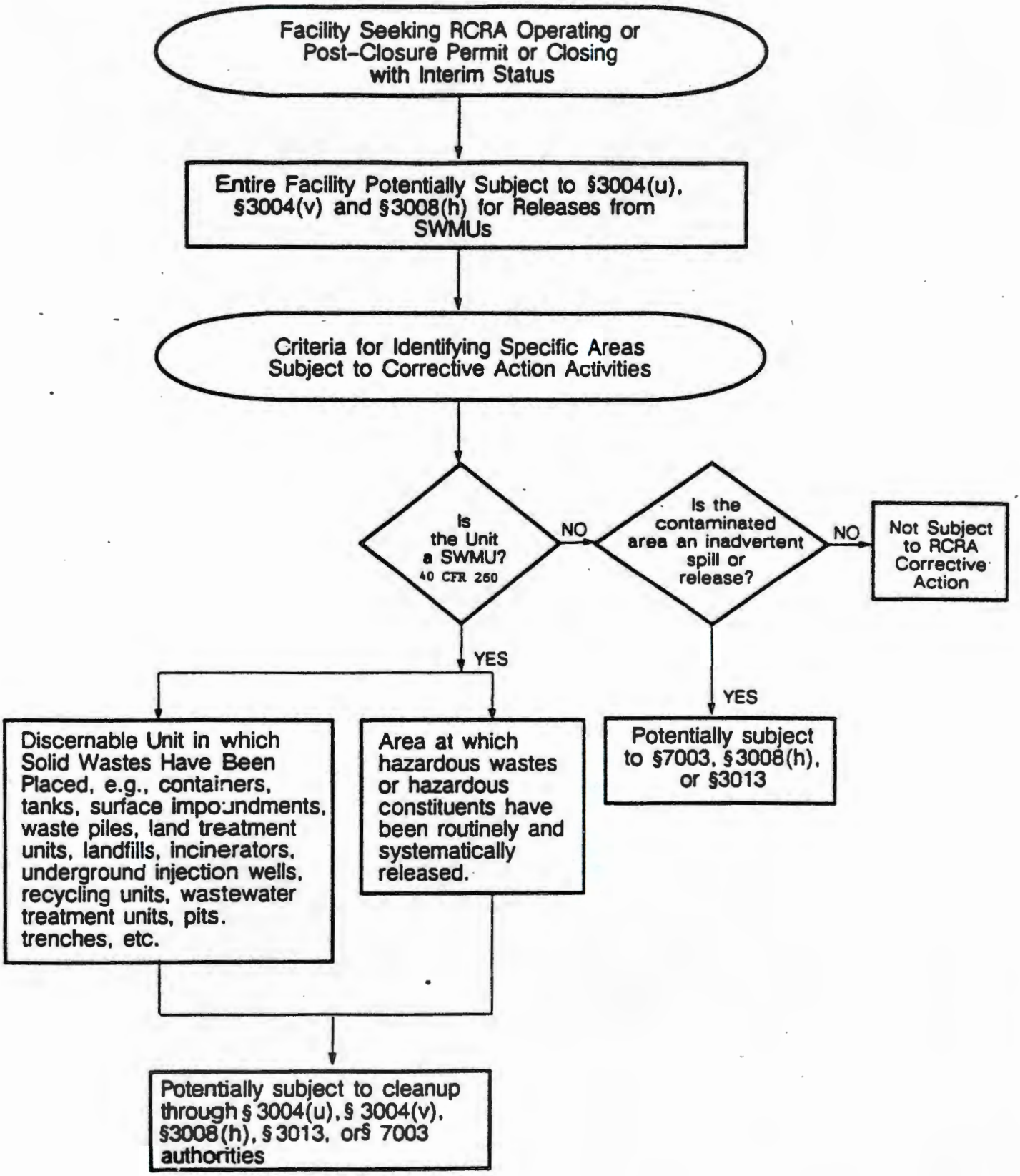


[1] Facilities on one or adjacent sites, owned or operated by the same person, are considered a single facility (SARA section 329(4)).

[2] A substance defined in SARA section 311(e) and 40 CFR 355.20.

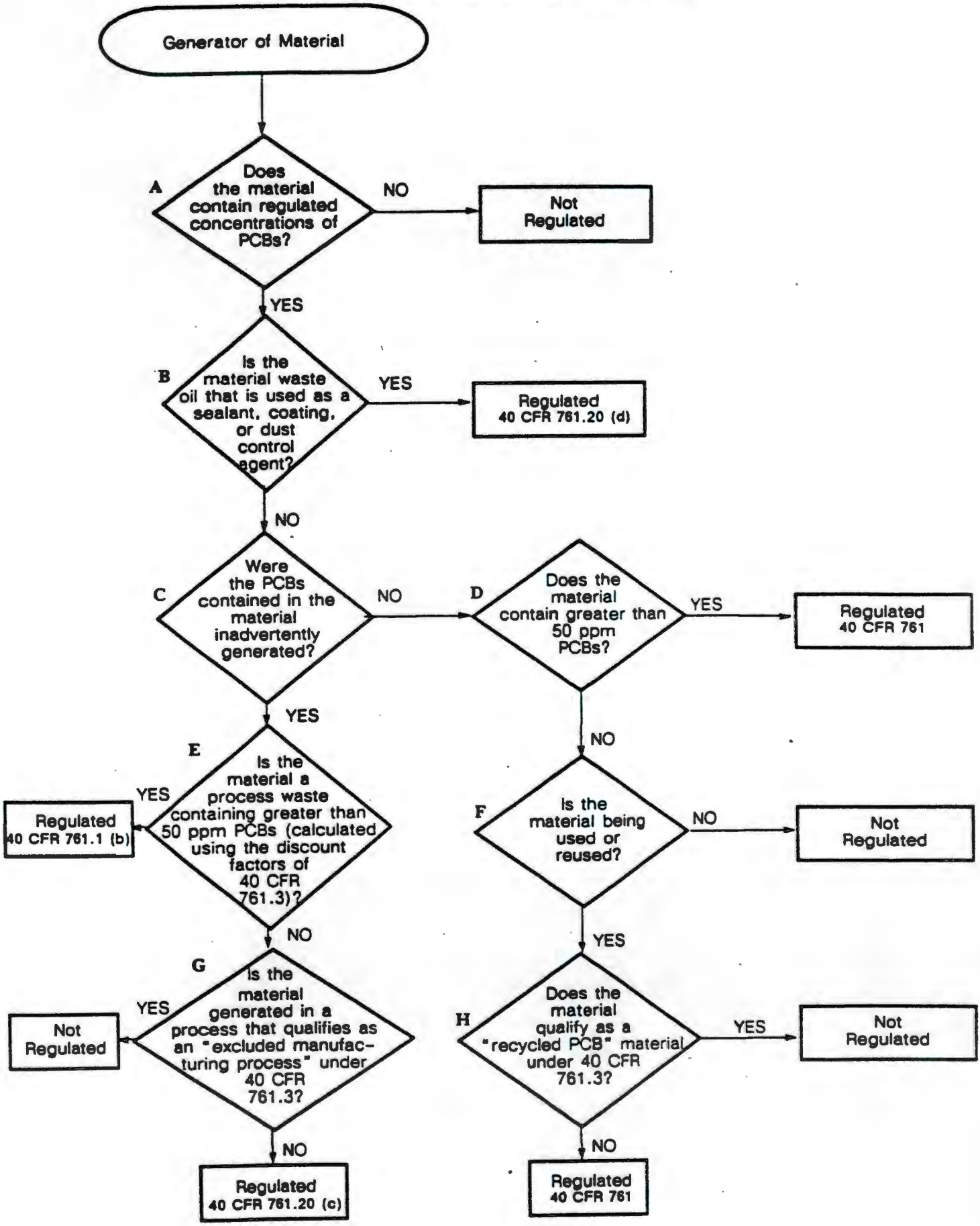
3.2 RCRA Section 3004(u) Subflowsheet

3.2
RCRA § 3004(u) Subflowsheet



3.3 TSCA Material Subflowsheet

3.3
TSCA Material Subflowsheet



Slide A

The term "polychlorinated biphenyl" or "PCB" is defined to include all chlorinated biphenyl molecules, regardless of the extent of chlorination.

Slide B

The term "waste oil" means used products primarily derived from petroleum, including fuel oil, motor oil, gear oil, cutting oil, transmission fluid, hydraulic fluid, and dielectric fluid. Examples of waste oil being used as a sealant, coating, or dust control agent include the following:

- Road oiling;
- General dust control;
- Use as a pesticide or herbicide carrier; and
- Use as a rust preventative on pipes.

Slide C

Inadvertently generated PCBs are PCBs that are formed as unintentional by-products in industrial processes. Such materials are generated in a wide variety of organic chemical reactions -- especially those used to produce chlorinated organic compounds. Intentionally produced PCBs, in contrast, are PCBs that were produced to perform specific functions (e.g., to serve as dielectric fluids for electrical transformers). Such PCBs are no longer being produced within the United States. However, wastes containing intentionally produced PCBs continue to be generated domestically.

Slide D

This diamond is self-explanatory. In calculating PCB concentrations under this diamond, no special discounting factors should be applied.

Slide E

A material is considered a "process waste" if it is a by-product from a manufacturing process. If the material is an intended product from a manufacturing process, it is not considered a "process waste." For purposes of this diamond, the concentration of PCBs in a process waste should be calculated by dividing the concentration of monochlorinated biphenyls by a factor of 50 and the concentration of dichlorinated biphenyls by a factor of 5.

Slide F

Answer "No" only if the material is being disposed.

Slide G

An excluded manufacturing process is defined under 40 CFR 761.3 as a manufacturing process that releases PCBs in accordance with the following requirements:

- The concentration of inadvertently generated PCBs in products leaving the manufacturing site must have an annual average of less than 25 ppm and a maximum of 50 ppm;
- The concentration of inadvertently generated PCBs in the components of detergent bars leaving the manufacturing site must be less than 5 ppm;
- The concentration of inadvertently generated PCBs in air emissions must be less than 10 ppm at the point at which the releases are vented to ambient air;
- The amount of inadvertently generated PCBs added to water discharged from the manufacturing site must be less than 100 micrograms per resolvable gas chromatographic peak per liter of water discharged; and
- Disposal of all process wastes containing PCBs in concentrations greater than 50 ppm must be in accordance with applicable TSCA regulations.

For purposes of this diamond, the concentration of inadvertently generated PCBs should be calculated by dividing the concentration of monochlorinated biphenyls by a factor of 50 and the concentration of dichlorinated biphenyls by a factor of 5.

Slide B

"Recycled PCBs" are defined as those intentionally manufactured PCBs which appear in the processing of paper products or asphalt roofing materials as a result of PCB-contaminated raw materials and which meet the following requirements:

- The concentration of Aroclor (i.e., intentionally produced) PCBs in paper products leaving the manufacturing site must have an annual average of less than 25 ppm and a maximum of 50 ppm;
- There must be no detectable concentration of Aroclor PCBs in the asphalt roofing materials;
- The release of Aroclor PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm; and
- The amount of Aroclor PCBs added to water discharged from the processing site must at all times be less than 3 micrograms per liter for total Aroclors.

For purposes of this diamond, no special discounting factors should be applied in calculating the concentration of Aroclor PCBs.

3.4

RCRA Subtitle C Subflowsheet

RCRA Subtitle C

Applicability determined by reference to the "RCRA/ Washington State Dangerous Waste Subflowsheet

The facility must comply with all of the applicable requirements specified below.

Generator Requirements

Applicable to any person whose process produces hazardous waste or whose act first causes a hazardous waste to become subject to regulation (e.g., an importer).

- Designating the Waste
- Small Quantity Generators
- Packaging Requirements
- Labeling Requirements
- Manifesting Requirements
- Requirements for Accumulation (i.e., short-term storage)
- Recordkeeping and Reporting Requirements

40 CFR 262
WAC 173-303-170 through 220

Transporter Requirements

Applicable to any person engaged in the off-site transportation of hazardous waste by air, rail, highway, or water.

- Manifesting Requirements
- Recordkeeping Requirements
- Discharge Response Requirements

40 CFR 263
WAC 173-303-240 through 270

TSD Facility Requirements

Applicable to any facility that treats, stores, or disposes of hazardous waste. Generators are exempt from storage facility requirements if they store less than 90 days (180 days for generators of 100 - 1000 kg/month, or 270 days if the small quantity generators must ship their waste greater than 200 miles). Transporters are also exempt if they store hazardous wastes for less than 10 days at a transfer facility.

General Requirements

- Waste Analysis Requirements
- Security Requirements
- Personnel Training Requirements
- Inspection Requirements
- Preparedness and Prevention Requirements
- Requirements for Contingency Plans and Emergency Preparedness
- Manifesting Requirements
- Recordkeeping and Reporting Requirements
- Ground-Water Protection Requirements
- Closure and Post-Closure Requirements
- Financial Responsibility Requirements
- Corrective Action Requirements
- Permitting Requirements

40 CFR 264 and 265
WAC 173-303-280 through 620

Facility-Specific Requirements

In addition to the general requirements above, TSD facilities must comply with the applicable facility-specific requirements specified below.

Tank Requirements

Applicable to any stationary device designed: to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, or plastic) to provide structural support

- Design Requirements
- Operating Requirements
- Requirements for Inspection
- Closure Requirements
- Special Requirements for Specific Wastes

40 CFR 264.190
40 CFR 265.190
WAC 173-303-640

Surface Impoundment Requirements

Applicable to any natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with non-earthen materials) which is designed to hold an accumulation of liquid wastes, provided the depth is less than or equal to the largest surface dimension.

- Design Requirements
- Operating Requirements
- Monitoring and Inspection Requirements
- Emergency Repair Requirements
- Contingency Plan
- Closure and Post-Closure Requirements
- Special Requirements for Specific Wastes
- Special Requirements for "Restricted Wastes"

40 CFR 264.220
40 CFR 265.220
WAC 173-303-650

Waste Pile Requirements

Applicable to any non-containerized accumulation of non-flowing hazardous waste.

- Design Requirements
- Operating Requirements
- Monitoring and Inspection Requirements
- Closure and Post-Closure Requirements
- Special Requirements for Specific Wastes
- Special Requirements for "Restricted Wastes"

40 CFR 264.250
40 CFR 265.250
WAC 173-303-660

Land Treatment Requirements

Applicable to any facility at which hazardous waste is applied onto or incorporated into the soil surface. [NOTE: If the waste will remain after closure, the facility will not qualify as a land treatment facility.]

- Treatment Program
- Demonstration Requirements
- Design Requirements
- Operating Requirements
- Recordkeeping Requirements
- Closure and Post-Closure Requirements
- Monitoring Requirements
- Special Requirements for Specific Wastes
- Unsaturated Zone Monitoring

40 CFR 264.270
40 CFR 265.270
WAC 173-303-655

Landfill Requirements

Applicable to any facility where hazardous waste is placed in or on the land, provided it is not a land treatment facility, a surface impoundment, or an injection well.

- Design Requirements
- Operating Requirements
- Monitoring and Inspection Requirements
- Recordkeeping Requirements
- Closure and Post-Closure Requirements
- Special Requirements for Specific Wastes
- Special Requirements for "Restricted Wastes"

Incinerator Requirements

Applicable to any enclosed device using controlled flame combustion that is not used to recover material or energy values from a hazardous waste.

- Waste Analysis Requirements
- Performance Standards
- Operating Requirements
- Monitoring and Inspection Requirements
- Closure Requirements

40 CFR 264.340
40 CFR 265.340
WAC 173-303-670

40 CFR 264.300
40 CFR 265.300
WAC 173-303-665

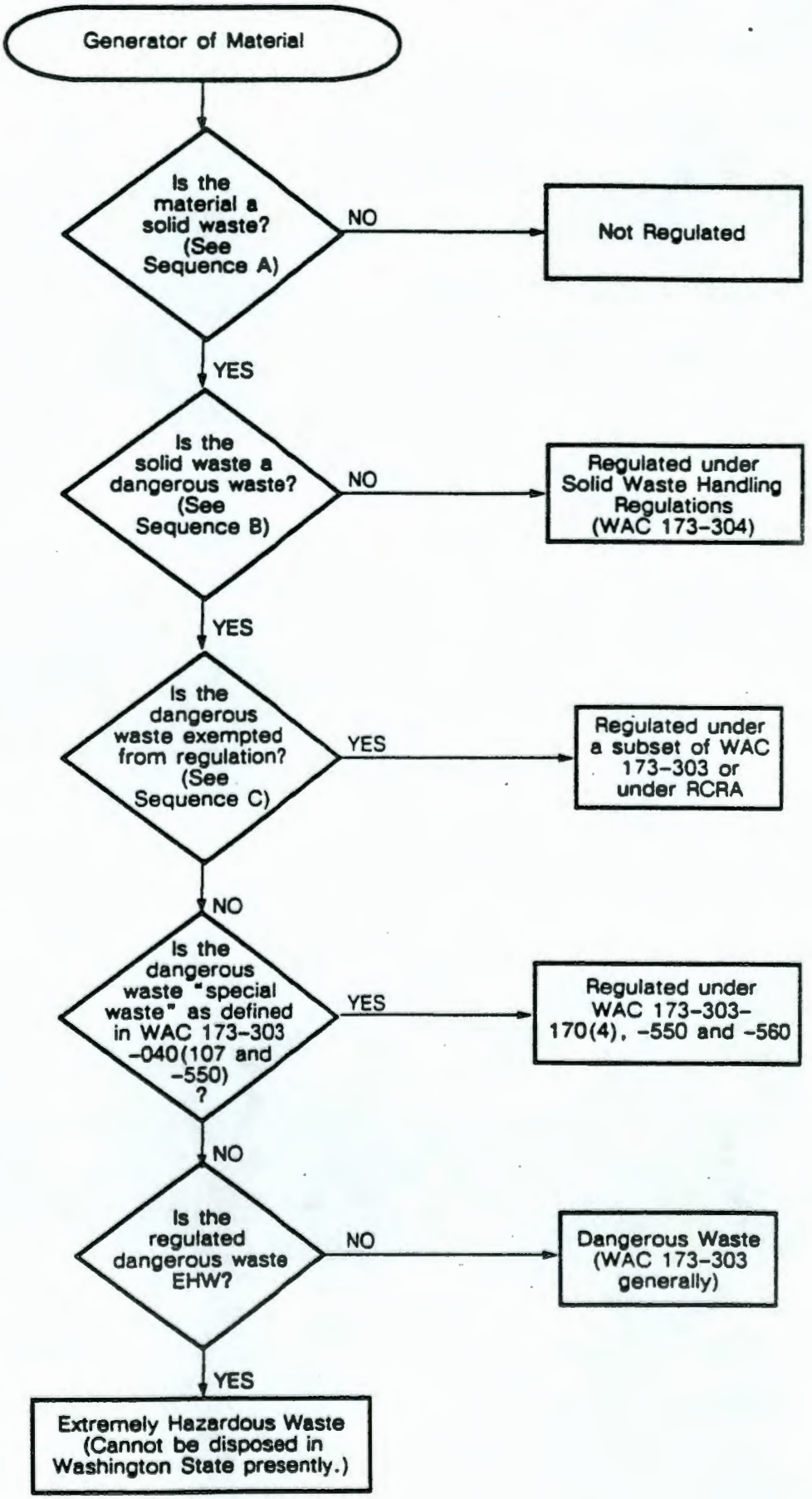
Container Requirements

Applicable to any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

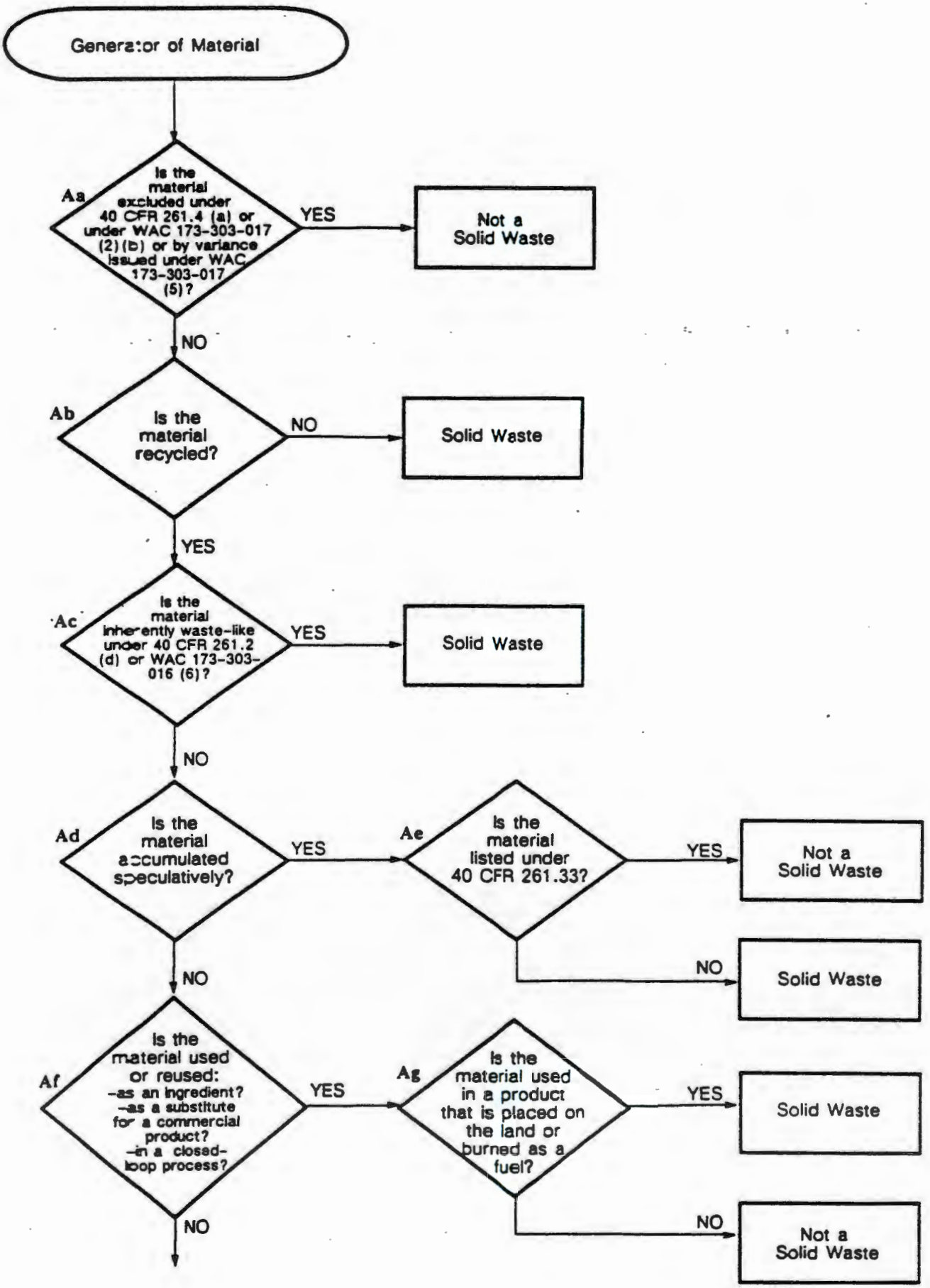
- Design Requirements
- Management Requirements
- Secondary Containment Requirements
- Inspection Requirements
- Closure Requirements
- Special Requirements for Specific Wastes

40 CFR 264.170
40 CFR 265.170
WAC 173-303-630

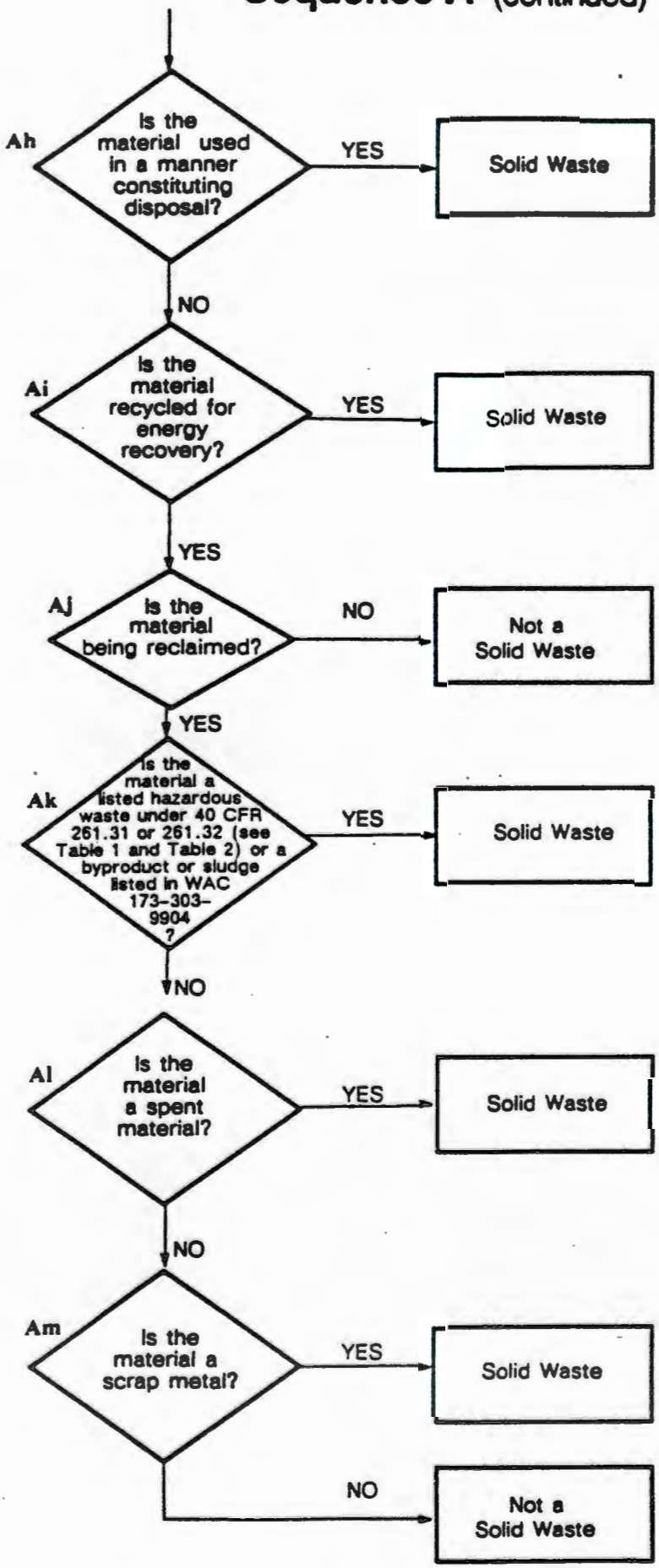
3.4
RCRA/Washington State Dangerous Waste Subflowsheet



Sequence A


Generator of Material
Aa
Is the material excluded under 40 CFR 261.4 (a) or under WAC 173-303-017 (2)(b) or by variance issued under WAC 173-303-017 (5)?
YES
Not a Solid Waste
NO
Ab
Is the material recycled?
NO
Solid Waste
YES
Ac
Is the material inherently waste-like under 40 CFR 261.2 (d) or WAC 173-303-016 (6)?
YES
Solid Waste
NO
Ad
Is the material accumulated speculatively?
YES
Ae
Is the material listed under 40 CFR 261.33?
YES
Not a Solid Waste
NO
Solid Waste
NO
Af
Is the material used or reused:
-as an ingredient?
-as a substitute for a commercial product?
-in a closed-loop process?
YES
Ag
Is the material used in a product that is placed on the land or burned as a fuel?
YES
Solid Waste
NO
Not a Solid Waste
NO

Sequence A (continued)



GENERAL NOTE ON SEQUENCE A

Sequence A does not reflect the recent decision of the Federal Court of Appeals for the District of Columbia Circuit which invalidated EPA's existing definition of solid waste (see American Mining Congress v. EPA, No. 85-1206 (D.C. Cir., July 31, 1987)). The Court in that case ruled that EPA has no authority under RCRA to regulate "in-process secondary materials employed in an ongoing manufacturing process." The exact scope of this prohibition is unclear. However, it seems that EPA at a minimum lacks the authority to regulate materials that are destined to be reclaimed or reused immediately at the site where they are generated.

Slide A8

The following materials are excluded under 40 CFR 261.4(a):

- Domestic sewage;
- Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly owned treatment works (POTW);
- Discharges of industrial wastewaters into surface water (wastewaters being stored or treated prior to discharge are not excluded);
- Irrigation return flows;
- Certain radioactive materials subject to regulation under the Atomic Energy Act (i.e., source, special nuclear, or by-product material);
- In-situ mining wastes;
- Pulping liquors that are reclaimed in a pulping liquor recovery furnace and then are reused in the pulping process; and
- Spent sulfuric acid used to produce virgin sulfuric acid.

Slide Ab

A material is recycled if it is destined to be:

- Used as an ingredient in an industrial process to make a product;
- Used in a particular function or application as an effective substitute for a commercial product;
- Processed to recover a usable product; or
- Regenerated.

In general, materials are considered recycled if they are used beneficially in any way.

Slide Ac

The following materials are inherently waste-like under 40 CFR 261.2(d):

- The dioxin-containing wastes F020-F023, F026, and F027 (see Table 1 for an explanation of these listings).

Slide Ad

A material is accumulated speculatively if it is accumulated before being recycled and one of the following is true:

- No feasible recycling market exists; or
- The amount of material that is recycled during a calendar year is less than 75 percent of the amount of material accumulated at the beginning of the year.

Once a material is removed from accumulation for recycling, it is no longer speculatively accumulated.

Slide Ae

The following unused materials are listed under 40 CFR 261.33:

- The commercially pure grade of any chemical listed in Table 3 or 4;
- All technical grades of any chemical listed in Table 3 or 4;
- Any formulation in which a chemical listed in Table 3 or 4 is the sole active ingredient;
- All off-specification variants of any of the above; and
- Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any of the above.

Commercial chemical products containing listed constituents are not considered listed wastes unless they qualify under one of the criteria listed above. For example, a pesticide formulation containing dieldrin and aldrin (both listed constituents) would not be "listed under 40 CFR 261.33" because it contains more than one active ingredient.

Slide Af

A material is "used or reused" if it is:

- Used or reused directly as an ingredient or feedstock in a production process;
- Used or reused directly as a substitute for a commercial product; or
- Returned as a feedstock to the original primary production process from which it was generated without first being reclaimed.

Examples include the following:

- Fly ash used as an ingredient in cement;
- Distillation bottoms from the manufacture of carbon tetrachloride used as a feedstock in producing tetrachloroethylene;
- Hydrofluorosilicic acid (an air emission control dust) used as a drinking water fluoridating agent;
- Spent pickle liquor used as a phosphorus precipitant in wastewater treatment; and
- Air emission control dusts from a smelting furnace that are returned to the furnace from which they were generated.

Slide Ag

Examples of materials that are used in a product that is placed on the land or burned as a fuel include the following:

- Nitrogen-containing wastes that are incorporated into a fertilizer that is applied to the land; and
- Hydrocarbon by-products that are burned for energy recovery or incorporated into a fuel.

Slide Ah

A material is used in a manner constituting disposal if it is placed on the land or incorporated into a product that is placed upon the land. The following activities involve the placement of materials upon the land:

- Application of pesticides or fertilizers;
- Laying of a building foundation; and
- Resurfacing of a road or a parking lot.

A commercial chemical product is <u>not</u> being used in a manner constituting disposal if it is applied to the land and that is its ordinary manner of use.

Slide Ai

A material is recycled for energy recovery if it is:

- Burned to recover energy;
- Used to produce a fuel; or
- Incorporated into a fuel.

Materials satisfying one of the above criteria are considered to be recycled for energy recovery, even if they are also being burned for material recovery. A commercial chemical product is not recycled for energy recovery if it is burned for energy recovery and that is its originally intended use.

Slide Aj

A material is reclaimed if it is regenerated or processed to recover a usable product. Examples include the following:

- Distillation of a spent solvent;
- Secondary smelting of scrap metals;
- Recovery of lead values from spent batteries; and
- Laundering of soiled clothes.

Slide Ak

Listed hazardous wastes under 40 CFR 261.31 and 261.32 are presented in Tables 1 and 2, respectively.

Slide Al

A spent material is any material that has been used and, as a result of contamination, can no longer serve the purpose for which it was produced without processing. Examples include the following:

- Spent degreasing solvents;
- Spent activated carbon;
- Spent catalysts;
- Spent acids;
- Spent electroplating bath solutions; and
- Soiled clothing.

Slide An

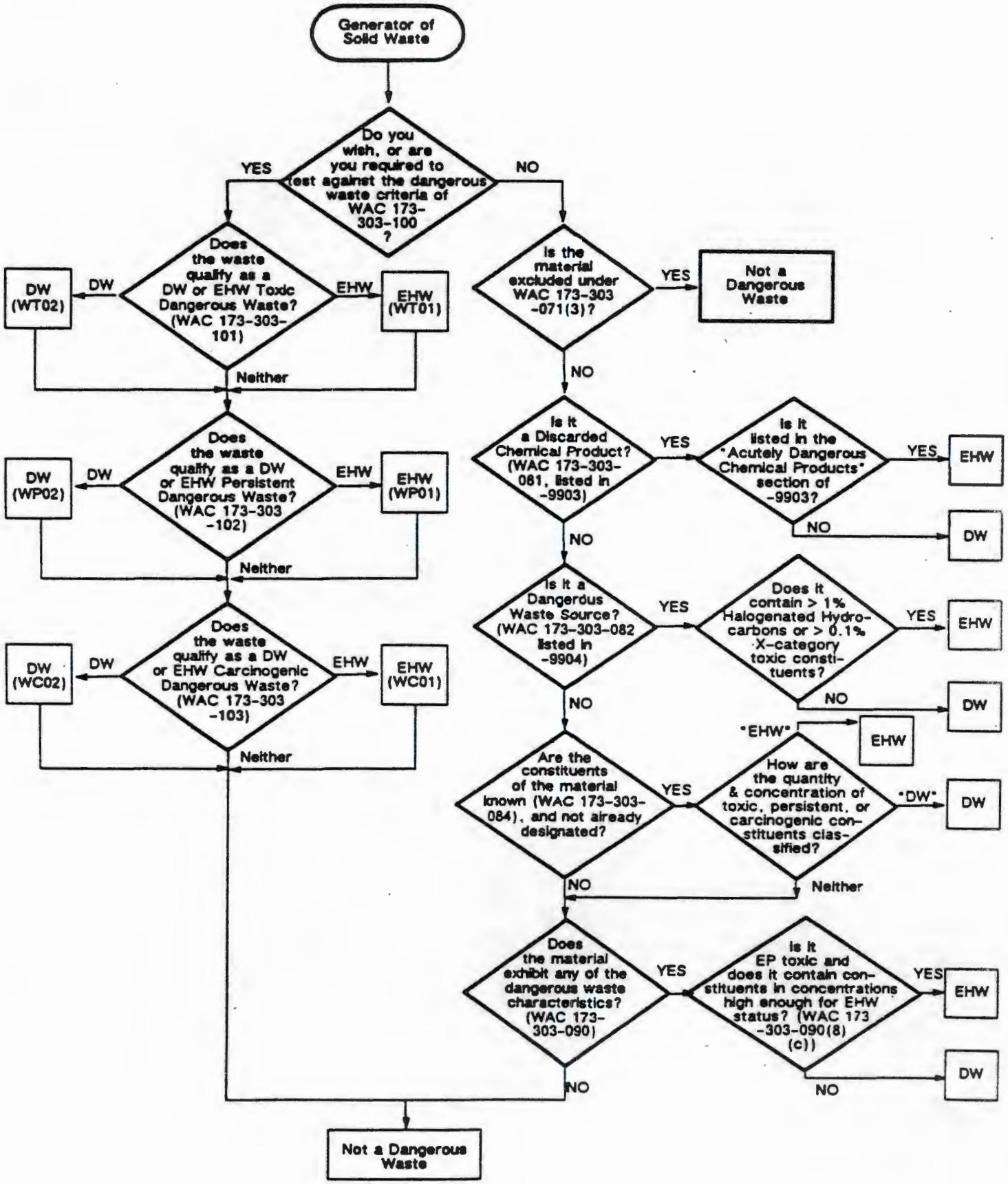
Scrap metal consists of bits and pieces of metal that are discarded after consumer use or that result from metal processing operations. Examples include the following:

- Metal turnings;
- Metal chips;
- Scrap automobiles; and
- Scrap radiators.

The following materials do not qualify as scrap metal:

- Residues generated from metal smelting and refining operations;
- Liquid wastes containing metals in solution;
- Liquid metal wastes (e.g., liquid mercury); and
- Metal-containing wastes with a significant liquid component (e.g., spent batteries).

Sequence B


Generator of Solid Waste
Do you wish, or are you required to test against the dangerous waste criteria of WAC 173-303-100 ?
YES
NO
Does the waste qualify as a DW or EHW Toxic Dangerous Waste? (WAC 173-303-101)
DW
DW (WT02)
EHW
EHW (WT01)
Neither
Does the waste qualify as a DW or EHW Persistent Dangerous Waste? (WAC 173-303 -102)
DW
DW (WP02)
EHW
EHW (WP01)
Neither
Does the waste qualify as a DW or EHW Carcinogenic Dangerous Waste? (WAC 173-303 -103)
DW
DW (WC02)
EHW
EHW (WC01)
Neither
Is the material excluded under WAC 173-303 -071(3)?
YES
Not a Dangerous Waste
NO
Is it a Discarded Chemical Product? (WAC 173-303-081, listed in -9903)
YES
Is it listed in the "Acutely Dangerous Chemical Products" section of -9903?
YES
EHW
NO
DW
NO
Is it a Dangerous Waste Source? (WAC 173-303-082 listed in -9904)
YES
Does it contain > 1% Halogenated Hydrocarbons or > 0.1% X-category toxic constituents?
YES
EHW
NO
DW
NO
Are the constituents of the material known (WAC 173-303-084), and not already designated?
YES
How are the quantity & concentration of toxic, persistent, or carcinogenic constituents classified?
"EHW"
EHW
"DW"
DW
NO
Neither
Does the material exhibit any of the dangerous waste characteristics? (WAC 173-303-090)
YES
Is it EP toxic and does it contain constituents in concentrations high enough for EHW status? (WAC 173 -303-090(8)(c))
YES
EHW
NO
DW
NO
Not a Dangerous Waste

Sequence C

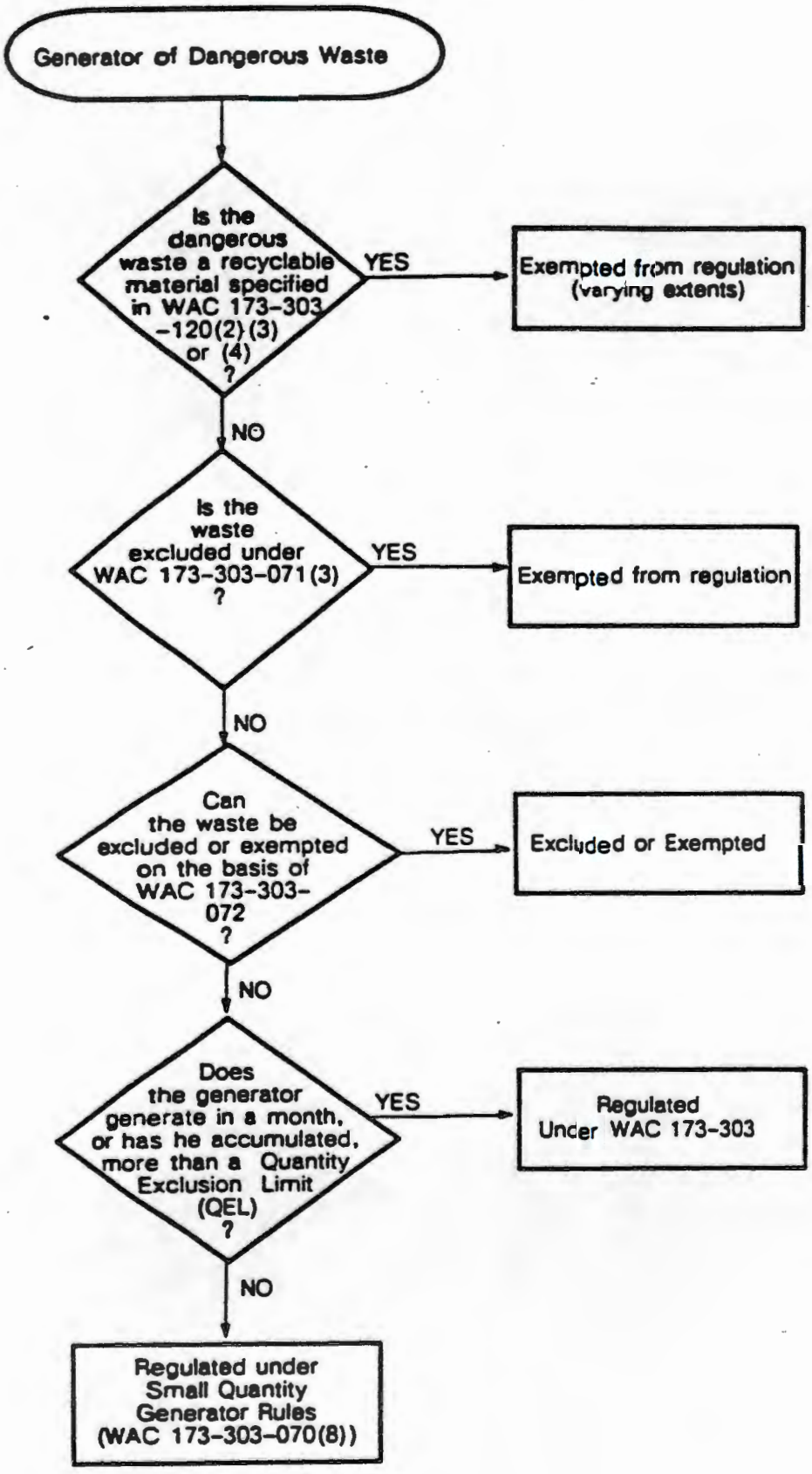

Generator of Dangerous Waste
Is the dangerous waste a recyclable material specified in WAC 173-303-120(2)(3) or (4) ?
YES
Exempted from regulation (varying extents)
NO
Is the waste excluded under WAC 173-303-071(3) ?
YES
Exempted from regulation
NO
Can the waste be excluded or exempted on the basis of WAC 173-303-072 ?
YES
Excluded or Exempted
NO
Does the generator generate in a month, or has he accumulated, more than a Quantity Exclusion Limit (QEL) ?
YES
Regulated Under WAC 173-303
NO
Regulated under Small Quantity Generator Rules (WAC 173-303-070(8))

TABLE 1

List of Hazardous Wastes from Non-Specific Sources (40 CFR 261.31)

Industry and EPA Hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004 and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1, 1, 1-trichloroethane, chlorobenzene, 1, 1, 2-trichloro-1, 2, 2-trifluoroethane, orthodichlorobenzene, trichlorofluoromethane, and 1, 1, 2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I) *
F004	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I, T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum	(T)
F007	Spent Cyanide plating bath solutions from electroplating operations.	(R, T)
F008	Plating sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F024	Wastes, including, but not limited to, distillation residues, heavy ends, tars, and reactor cleanout wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. [This listing does not include light ends, spent filters and filter aids, spent desiccants, wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in §261.32].	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulation containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	(T)

* (I, T) should be used to specify mixture containing ignitable and toxic constituents.

[261.31 amended by 45 FR 47833, July 16, 1980, revised by 45 FR 74890, November 12, 1980, 46 FR 4617, January 16, 1981, 46 FR 27475, May 20, 1981, 49 FR 5312, February 10, 1984; 50 FR 661, January 4, 1985; 50 FR 1999, January 14, 1985; 50 FR 53319, December 31, 1985; corrected by 51 FR 2702, January 21, 1986; amended by 51 FR 6541, February 25, 1986]

TABLE 2

List of Hazardous Wastes from Specific Sources (40 CFR 261.32)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation. K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	T
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	T
K003	Wastewater treatment sludge from the production of molybdate orange pigments	T
K004	Wastewater treatment sludge from the production of zinc yellow pigments	T
K005	Wastewater treatment sludge from the production of chrome green pigments	T
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	T
K007	Wastewater treatment sludge from the production of iron blue pigments	T
K008	Oven residue from the production of chrome oxide green pigments	T
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene	T
K010	Distillation side cuts from the production of acetaldehyde from ethylene	T
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	R, T
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	R, T
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	T
K015	Still bottoms from the distillation of benzyl chloride	T
K016	Heavy ends or distillation residues from the production of carbon tetrachloride	T
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	T
K018	Heavy ends from the fractionation column in ethyl chloride production	T
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	T
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	T
K021	Aqueous spent antimony catalyst waste from fluoromethanes production	T
K022	Distillation bottom tars from the production of phenol/acetone from cumene	T
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	T
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	T
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	T
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	T
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	T
K026	Stripping still tails from the production of methy ethyl pyridines	T
K027	Centrifuge and distillation residues from toluene diisocyanate production	R, T
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	T
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	T
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	T
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	T
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	T
K083	Distillation bottoms from aniline production	T
K103	Process residues from aniline extraction from the production of aniline	T
K104	Combined wastewater streams generated from nitrobenzene/aniline production	T
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	T
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	T

[K111 through K116 added by 50 FR 42942, October 23, 1985]

K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	T
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	T
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	T
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	T
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine	T
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	T
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	T
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	T

[K117, 118 and 136 added by 51 FR 5330, February 13, 1986]

Industry and EPA hazardous waste No	Hazardous waste	Hazard code
Inorganic chemicals:		
K071	Brine purification muds from the mercury cell process in chlorine production where separately prepurified brine is not used.	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
K032	Wastewater treatment sludge from the production of chlordane	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	(T)
K037	Wastewater treatment sludges from the production of disulfoton	(T)
K038	Wastewater from the washing and stripping of phorate production	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate	(T)
K041	Wastewater treatment sludge from the production of toxaphene	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)

[K123 through 126 added by 51 FR 37728, October 24, 1986]

K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
Explosives		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045	Spent carbon from the treatment of wastewater containing explosives	(R)
K046	Wastewater treatment sludges from the manufacturing formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities with the iron and steel industry (SIC Codes 331 and 332).	(C, T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
Ink formulation: K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)

[261.32 amended by 45 FR 47833, July 16, 1980; 45 FR 72039, October 30, 1980; revised by 45 FR 74980, November 12, 1980; 46 FR 4617, January 16, 1981; 46 FR 27476, May 20, 1981; 50 FR 42942, October 23, 1985; 51 FR 5330, February 13, 1986; 51 FR 19322, May 28, 1986; corrected by 51 FR 33612, September 22, 1986; amended by 51 FR 37728, October 24, 1986; 52 FR 28698, August 3, 1987]

TABLE 3

List of Acutely Hazardous Commercial Chemical Products (40 CFR 261.33(e))

Hazardous waste No.	Chemical abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P066	16752-77-5	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P004	309-00-2	Aldrin
P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-alpha-Aminopyridine
P008	131-74-8	Ammonium picrate (R)
P119	7803-55-6	Ammonium vanadate
P010	7778-39-4	Arsenic acid
P012	1327-53-3	Arsenic oxide As_2O_3
P011	1303-28-2	Arsenic oxide As_2O_5
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
	108-98-5	Benzenethiol
b	81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium dust
P016	542-88-1	Bis(chloromethyl) ether
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P021	592-01-8	Calcium cyanide
P022	75-15-0	Carbon bisulfide
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P029	544-92-3	Copper cyanide
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropyl fluorophosphate (DFP)
P004	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-
P051	72-20-8	2,7:3,6-Dimethanonaphth[2,3b]oxirene, octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-
P044	60-51-5	Dimethoate
P045	39196-18-4	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime
P046	122-09-8	alpha, alpha-Dimethylphenethylamine
P047	534-52-1	4,6-Dinitro-o-cresol and salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb

Hazardous waste No.	Chemical abstracts No.	Substance
P085	152-16-9	Diphosphoramide, octamethyl-
P039	298-04-4	Disulfoton
P049	541-53-7	2,4-Dithiobiuret
P050	115-29-7	Endosulfan
P088	145-73-3	Endothal
P051	72-20-8	Endrin
P042	51-43-4	Epinephrine
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyltetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P064	624-83-9	Isocyanic acid, methyl ester
P060	465-73-6	Isodrin
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	16752-77-5	Methomyl
P067	75-55-8	2-Methylaziridine
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methyllactonitrile
P071	298-00-0	Methyl parathion
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl, (T-4)-
P075	[1] 54-11-5	Nicotine and salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO_2
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P074	557-19-7	Nickel cyanide
P085	152-16-9	Octamethylpyrophosphoramide
P087	20816-12-0	Osmium oxide
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	[1] 534-52-1	Phenol, 2-methyl-4,6-dinitro- and salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoric acid, bis(1-methylethyl)- ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P099	506-61-6	Potassium silver cyanide
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-

Hazardous waste No.	Chemical abstracts No.	Substance
081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	581-09-2	2-Propyn-1-ol
P008	504-24-5	Pyridinamine
P075	[1] 54-11-5	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111	107-49-3	Pyrophosphoric acid, tetraethyl ester
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P107	1314-96-1	Strontium sulfide
P108	[1] 57-24-9	Strychnidin-10-one, and salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	[1] 57-24-9	Strychnine and salts
P115	10031-59-1	Sulfuric acid, thallium(I) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethylpyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium(III) oxide
P114	12039-52-0	Thallium(I) selenite
P115	10031-59-1	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium(V) oxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	81-81-2	Warfarin
P121	557-21-1	Zinc cyanide
122	1314-84-7	Zinc phosphide (R,T)

[1] CAS Number given for parent compound only.

TABLE 4

List of Non-Acutely Hazardous Commercial Chemical Products (40 CFR 261.33(f))

Hazardous waste No	Chemical abstracts No.	Substance
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl
U112	141-78-6	Acetic acid, ethyl ester (I)
U144	301-04-2	Acetic acid, lead salt
U214	563-68-8	Acetic acid, thallium (1+) salt
U232	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonenitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	3,4-Benzacridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1, 1'-(2,2-dichloroethylidene)bis[4-chloro-
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,T)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro- (I,T)
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)[4-methoxy-
U023	98-07-7	Benzene, (trichloromethyl)- (C,R,T)
U234	99-35-4	Benzene, 1,3,5-trinitro- (R,T)
U021	92-87-5	Benzidine
U202	1 91-07-2	1,2-Benzisothiazol-3-(2H)-one, 1,1-dioxide and salts
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U064	189-55-9	Benzo(rst)pentaphene
U022	50-32-8	Benzo(a)pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2'-Bioxirane (I,T)
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine
U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U027	39638-32-9	Bis(2-chloroisopropyl) ether
U024	111-91-1	Bis(2-chloroethoxy) ethane
U028	117-81-7	Bis(2-ethylhexyl) phthalate

Hazardous waste No.	Chemical abstracts No.	Substance
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (I)
U159	78-93-3	2-Butanone (I,T)
U160	1338-23-4	2-Butanone peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy)methyl]-2,3,5,7a-tetrahydro-1-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S, 3R), 7aalpha]]-
U031	71-36-3	n-Butyl alcohol (I)
U136	75-60-5	Cacodylic acid
U032	13765-19-0	Calcium chromate
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U097	79-44-7	Carbamic chloride, dimethyl-
U114	' 111-54-6	Carbamodithioic acid, 1,2-ethanediylbis-, salts and esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	12789-03-6	Chlordane
U026	494-03-1	Chlornaphazine
U037	108-90-7	Chlorobenzene
U039	59-50-7	p-Chloro-m-cresol
U041	106-89-8	1-Chloro-2,3-epoxypropane
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid, calcium salt
*1050	218-01-9	Chrysene
51	8021-39-4	Creosote
52	1319-77-3	Cresols (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide
U197	106-51-4	2,5-Cyclohexadiene-1, 4-dione
U056	110-82-7	Cyclohexane (I)
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro
U058	50-18-0	Cyclophosphamide
U240	' 94-75-7	2,4-D, salts and esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-1	Dichloroethyl ether
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U240	' 94-75-7	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	78-87-5	1,2-Dichloropropane
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U108	123-91-1	1,4-Diethyleneoxide
U086	1615-80-1	N,N-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl-S-methyl-dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbestrol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
[illegible]	119-93-7	3,3'-Dimethylbenzidine
[illegible]	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
[illegible]	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene

Hazardous waste No.	Chemical abstracts No.	Substance
U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-64-7	Di-n-propylnitrosamine
U001	75-07-0	Ethanal (I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U117	60-29-7	Ethane, 1,1'-oxybis- (I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U227	110-80-5	Ethanol, 2-ethoxy-
U359	79-00-5	Ethane, 1,1,2-trichloro-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	127-18-4	Ethene, tetrachloro
U228	79-01-6	Ethene, trichloro
U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U238	51-79-6	Ethyl carbamate
U038	510-15-6	Ethyl 4,4'-dichlorobenzilate
U114	111-54-6	Ethylenebisdithiocarbamic acid, salts and este
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (I,T)
U116	96-45-7	Ethylene thiourea
U117	60-29-7	Ethyl ether (I)
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate
U119	62-50-0	Ethylmethanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)
U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro- (I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U129	58-89-9	Hexachlorocyclohexane (gamma isomer)
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136	75-60-5	Hydroxydimethylarsine oxide
U116	96-45-7	2-Imidazolidinethione
U137	193-39-5	Indeno[1,2,3cd]pyrene
U139	9004-66-4	Iron dextran
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate
U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I,T)

Hazardous waste No.	Chemical abstracts No.	Substance
A2	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I,T)
U046	107-30-2	Methane, chloromethoxy-
U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I,T)
U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U123	64-18-6	Methanoic acid (C,T)
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methylchlorocarbonate (I,T)
U226	71-55-6	Methylchloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U163	70-25-7	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'dimethyl-(1,1'biphenyl)-4,4'-diyl)]-bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
166	130-15-4	1,4-Naphthoquinone
167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U026	494-03-1	2-Naphthylamine, N,N'-bis(2-chloromethyl)-
U167	134-32-7	1-Naphthylenamine
U168	91-59-8	2-Naphthylenamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine
U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetr. hydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
U182	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
U242	87-86-5	Pentachlorophenol
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethanediyl)bis-, (E)-
U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U170	100-02-7	Phenol, 4-nitro-
U242	87-86-5	Phenol, pentachloro-
U212	58-90-2	Phenol, 2,3,4,6-tetrachloro-
U230	95-94-4	Phenol, 2,4,5-trichloro-
U231	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead salt
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl-, S-methyl-, ester
U189	108-95-2	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-

Hazardous waste No.	Chemical abstracts No.	Substance
U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	39638-32-9	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U084	542-75-6	1-Propene, 1,3-dichloro-
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U007	79-06-1	2-Propenamide
U243	1888-71-7	1-Propene, hexachloro-
U009	107-13-1	2-Propenenitrile
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	93-72-1	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	56-04-2	4-(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	81-07-2	Saccharin and salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7446-34-6	Selenium sulfide (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
U233	93-72-1	Silvex
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
U232	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
U212	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	15843-14-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium chloride
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonic diamide, tetramethyl-
U219	62-56-6	Thiourea
U244	137-26-8	Thiuram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U226	71-55-6	1,1,1-Trichloroethane
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
U230	95-95-4	2,4,5-Trichlorophenol
U231	88-06-2	2,4,6-Trichlorophenol
U234	99-35-4	sym-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris (2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	81-81-2	Warfarin, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester
U249	1314-84-7	Zinc phosphide, when present at concentrations of 10% or less

[a] CAS Number given for parent compound only.

TABLE 5

List of Halogenated Organic Compounds (HOCs) (Appendix III to 40 CFR Part 268)

Volatiles

Bromodichloromethane
Bromomethane
Carbon Tetrachloride
Chlorobenzene
2-Chloro-1,3-butadiene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
3-Chloropropene
1,2-Dibromo-3-chloropropane
1,2-Dibromomethane
Dibromomethane
Trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
Trans-1,2-Dichloroethene
1,2-Dichloropropane
Trans-1,3-Dichloropropene
cis-1,3-Dichloropropene
Iodomethane
Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Tribromomethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichloromonofluoromethane
1,2,3-Trichloropropane
Vinyl chloride

Semivolatiles

Bis(2-chloroethoxy)ethane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl) ether
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol
2-Chloronaphthalene
2-Chlorophenol
3-Chloropropionitrile
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Hexachloropropene
4,4'-Methylenebis(2-chloroaniline)
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Pronamide
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Tris(2,3-dibromopropyl)phosphate

Organochlorine Pesticides

Aldrin
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC
Chlordane
DDD
DDE
DDT
Dieldrin
Endosulfan I
Endosulfan II
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Isodrin
Kepone
Methoxyclor
Toxaphene

Phenoxyacetic Acid Herbicides

2,4-Dichlorophenoxyacetic acid
Silvex
2,4,5-T

PCBs

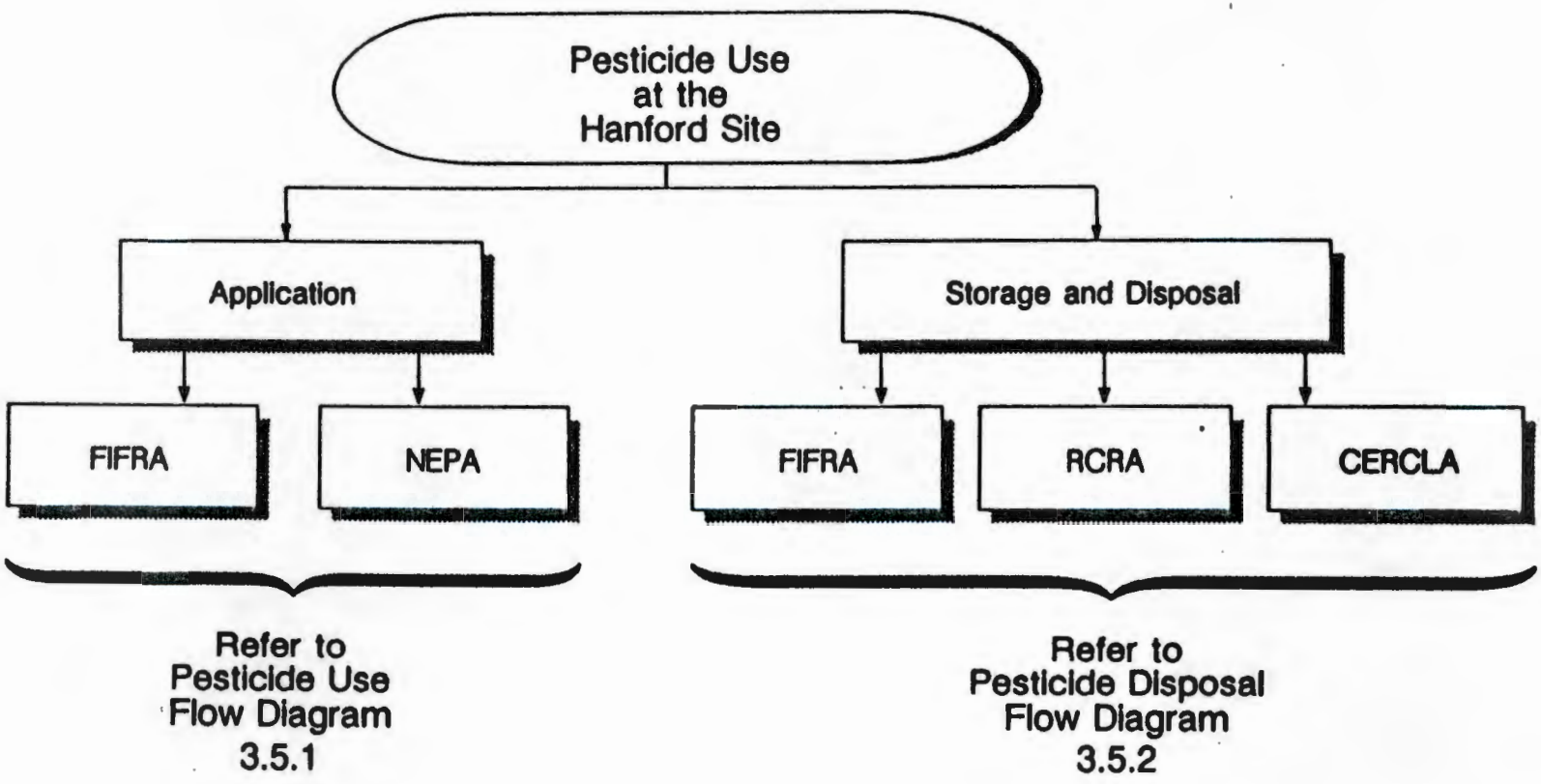
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
PCBs not otherwise specified

Dioxins and Furans

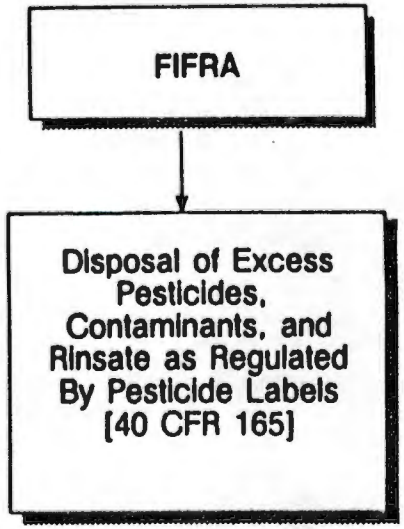
Hexachlorodibenzo-p-dioxins
Hexachlorodibenzofurans
Pentachlorodibenzo-p-dioxins
Pentachlorodibenzofuran
Tetrachlorodibenzo-p-dioxins
Tetrachlorodibenzofuran
2,3,7,8-Tetrachlorodibenzo-p-dioxin

3.5 Pesticide Programs Subflowsheet

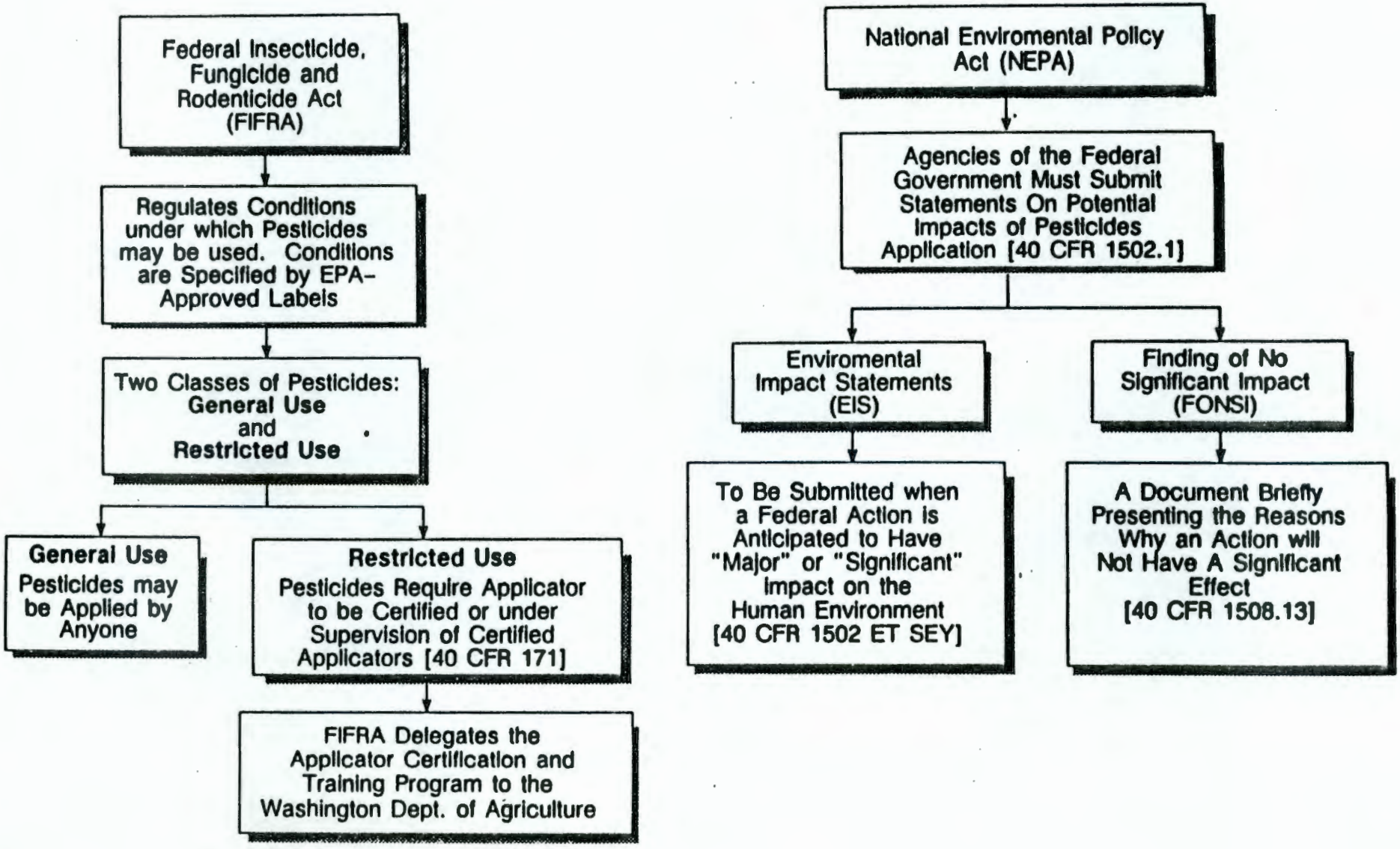
3.5
Pesticide Programs Subflowsheet



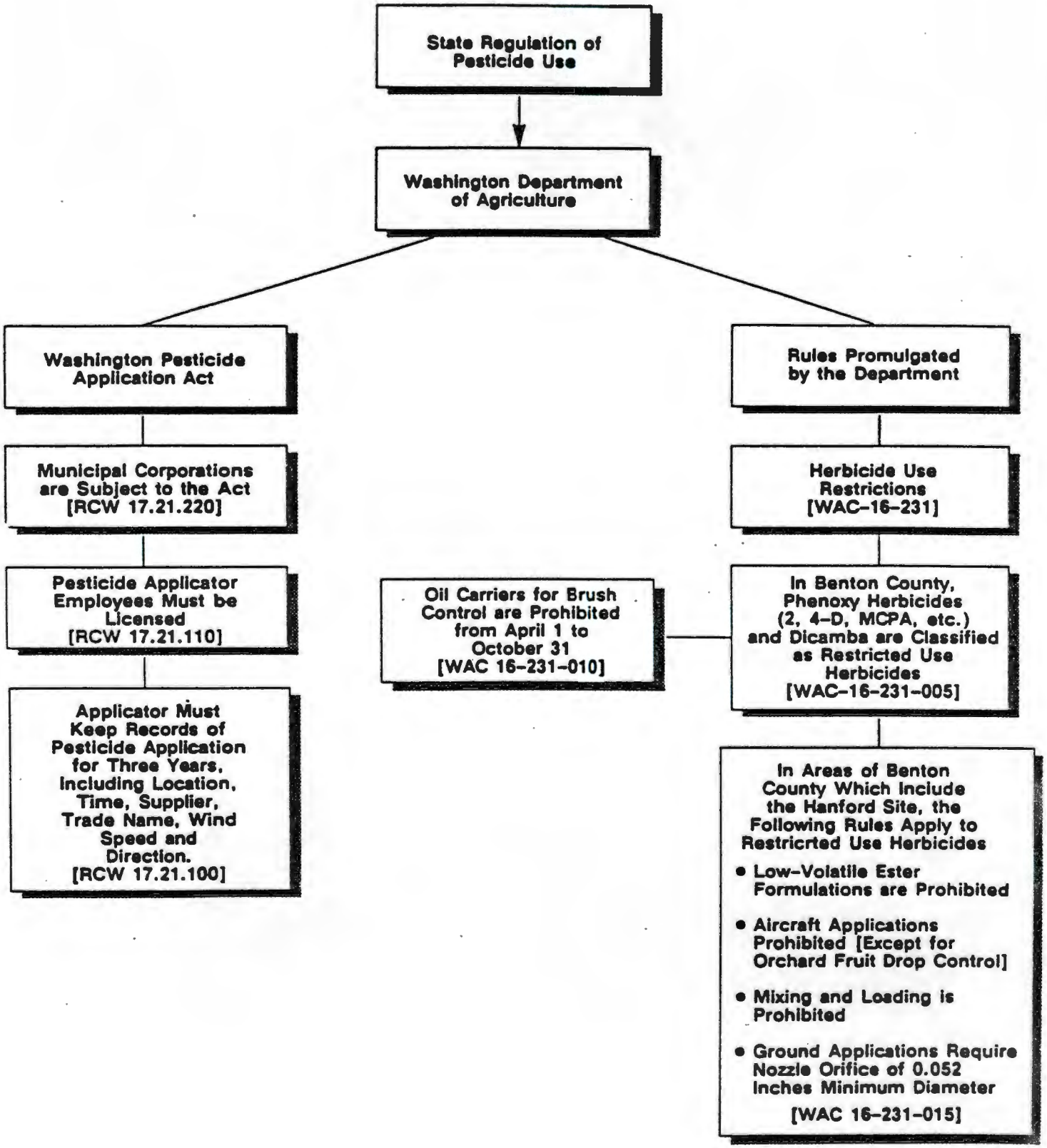
3.5.1
Pesticide Use Subflowsheet



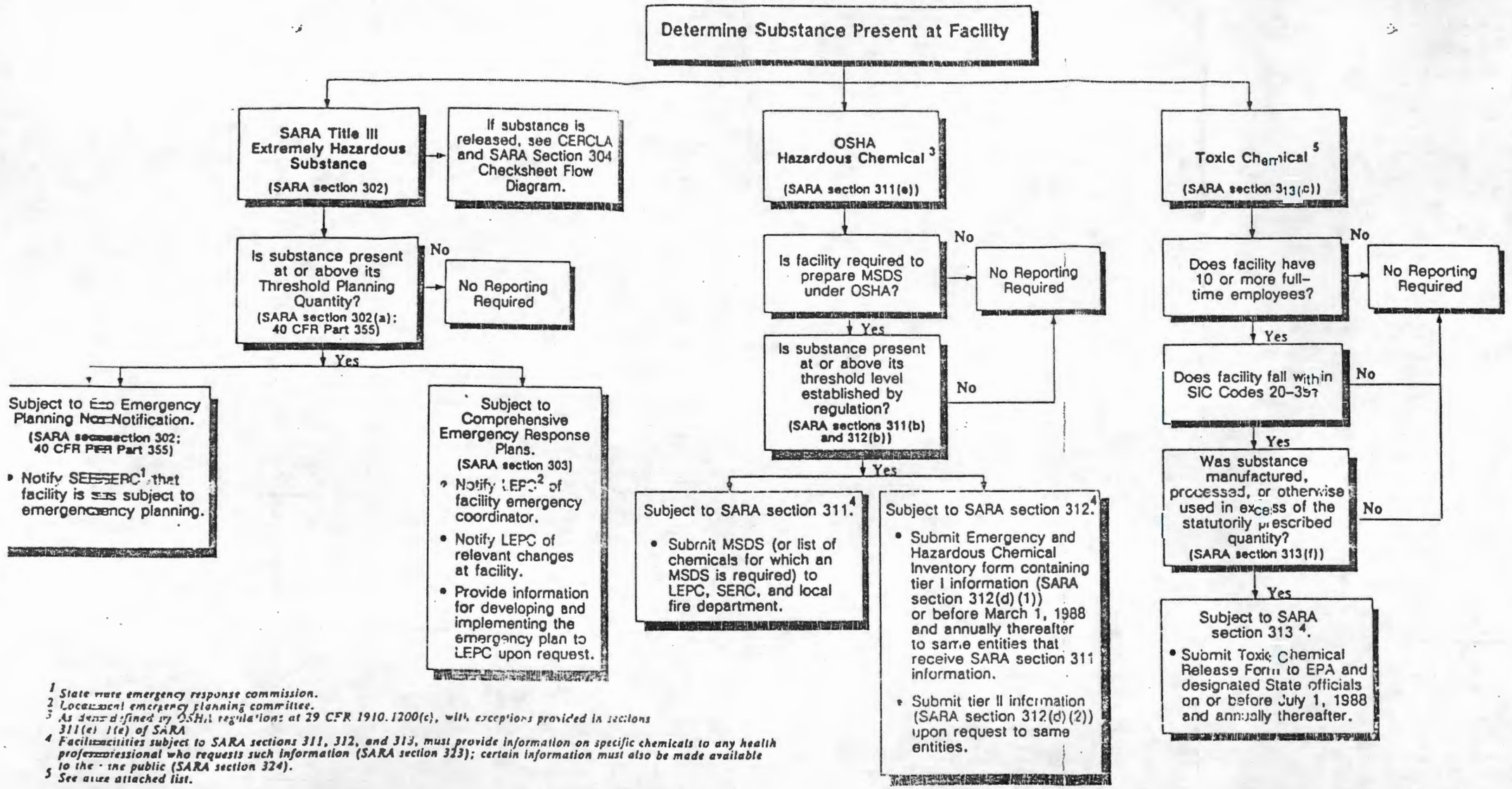
3.5.2
Pesticide Use Subflowsheet



3.5.3
Washington State Pesticide Use Subflowsheet



3.6 SARA Title III Notification and Reporting Subflowsheet



1 State emergency response commission.
2 Local emergency planning committee.
3 As defined by OSHA regulations at 29 CFR 1910.1200(c), with exceptions provided in sections 311(e)(1)(e) of SARA
4 Facilities subject to SARA sections 311, 312, and 313, must provide information on specific chemicals to any health professional who requests such information (SARA section 323); certain information must also be made available to the public (SARA section 324).
5 See attached list.

abandonment or discarding of barrels, containers, and other closed receptacles) of any toxic chemical.

"Title III" means Title III of the Superfund Amendments and Reauthorization Act of 1986, also titled the Emergency Planning and Community Right-To-Know Act of 1986.

"Toxic chemical" means a chemical or chemical category listed in § 372.45.

§ 372.5 Persons who must report.

Owners and operators of covered facilities described in § 372.10 are subject to the requirements of this part. If the owner and operator of a covered facility are different persons, only one need report for each toxic chemical required to be reported under this part. However, if no report is submitted, EPA will hold both the owner and the operator liable under section 325(c) of Title III.

§ 372.10 Covered facilities.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year.

(a) The facility has 10 or more full-time employees.

(b) The facility is in Standard Industrial Classification Codes 20 through 39 as in effect on January 1, 1987.

(c) The facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical set forth in § 372.12.

§ 372.12 Thresholds for reporting.

The threshold amounts for purposes of reporting under this Part for toxic chemicals are as follows:

(a) With respect to a toxic chemical manufactured (including imported) or processed at a facility during the following calendar years:

1987—75,000 pounds of the chemical for the year.
1988—50,000 pounds of the chemical for the year.
1989 and thereafter—25,000 pounds of the chemical for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000 pounds of the chemical for the applicable calendar year.

§ 372.15 Reporting requirements and schedule for reporting.

A person subject to this Part must submit to EPA and to the State in which the covered facility is located a completed EPA Form R (EPA Form 7740-20) for each toxic chemical manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in § 372.12 for a calendar year. A report must be submitted for releases of the toxic chemical that occurred during that calendar year at that facility on or before July 1 of the next year. The first such report for calendar year 1987 must be submitted on or before July 1, 1988.

§ 372.16 Recordkeeping.

(a) Each person subject to the reporting requirements of this Part must retain the following records for a period of 5 years following the submission of a report:

(1) A copy of the report submitted by the person in response to the requirements of this Part.

(2) All supporting materials and documentation used by the person to complete each report.

(b) Records retained under this section must be retained at the facility to which the report applies. Such records must be readily available for purposes of inspection by EPA.

(c) If the facility closes permanently, the records retained under this section must be transfered to and retained by the owner or operator of the facility. If there is no separate owner or operator, then such records must be sent to EPA.

§ 372.19 Compliance and enforcement.

Violators of the requirements of this part are subject to the civil and administrative penalties as provided in section 325(c) of Title III.

Subpart B—[Reserved]

Subpart C—Specific Toxic Chemical Listings

§ 372.42 Generic classification of listed chemicals and chemical categories for purposes of trade secrecy claims.

The following generic classification names and codes are to be used when the identity of a chemical or chemical category listed in § 372.45 of this part is claimed a trade secret. All chemicals and chemical categories listed in § 372.45 have been assigned one of the generic classifications as indicated by the code that appears in the column titled "Generic Classification Code." The generic classification names and codes are listed in the following Table 1:

TABLE 1.—CHEMICAL CLASSIFICATIONS AND CATEGORIES

Generic classifications	Code
Hydrocarbons	C01
Halogenated alkanes	C02
Halogenated alkenes	C03
Halogenated aromatics	C04
Hydroxy compounds	C05
Ethers and epoxides	C06
Aldehydes and ketones	C07
Carboxylic acids, esters, anhydrides, lactones	C08
Other carboxylic acid derivatives	C09
Amines	C10
Amine derivatives	C11
Nitro and nitroso compounds	C12
Phosphorus and sulfur compounds	C13
Azo and hydrazo compounds	C14
Metal containing compounds	C15
Non-metal containing inorganic compounds	C16

§ 372.45 Chemicals and chemical categories to which this part applies.

The reporting requirements of this Part apply to the following chemicals and chemical categories. This section contains three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this section contains the chemical categories for which reporting is required. These chemical categories are listed in alphabetical order.

(a) Alphabetical listing.

Chemical name	CAS No.	Generic classification code	Effective date
Acetaldehyde	75-07-0	C07	01/01/87
Acetamide	60-35-5	C09	01/01/87
Acetone	67-64-1	C07	01/01/87
Acetonitrile	75-05-8	C11	01/01/87
2-Acetylaminofluorene	53-96-3	C10	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Acrolein	107-02-8	C07	01/01/87
Acrylamide	79-06-1	C09	01/01/87
Acrylic acid	79-10-7	C08	01/01/87
Acrylonitrile	107-13-1	C11	01/01/87
Aldrin [1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]	309-00-2	C03	01/01/87
Allyl chloride	107-05-1	C03	01/01/87
Aluminum (fume or dust)	7429-90-5	C15	01/01/87
Aluminum oxide	1344-28-1	C15	01/01/87
2-Aminoanthraquinone	117-79-3	C10	01/01/87
4-Aminoazobenzene	60-09-3	C10	01/01/87
4-Aminobiphenyl	92-67-1	C10	01/01/87
1-Amino-2-methylanthraquinone	82-28-0	C10	01/01/87
Ammonia	7664-41-7	C16	01/01/87
Ammonium nitrate (solution)	6484-52-2	C16	01/01/87
Ammonium sulfate (solution)	7783-20-2	C16	01/01/87
Aniline	62-53-3	C10	01/01/87
o-Anisidine	90-04-0	C10	01/01/87
p-Anisidine	104-94-9	C10	01/01/87
o-Anisidine hydrochloride	134-29-2	C10	01/01/87
Anthracene	120-12-7	C01	01/01/87
Antimony	7440-36-0	C15	01/01/87
Arsenic	7440-38-2	C15	01/01/87
Asbestos (friable)	1332-21-4	C16	01/01/87
Auramine [Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-]	492-80-8	C10	01/01/87
Barium	7440-39-3	C15	01/01/87
Benzal chloride	98-87-3	C02	01/01/87
Benzamide	55-21-0	C09	01/01/87
Benzene	71-43-2	C01	01/01/87
Benzidine	92-87-5	C10	01/01/87
Benzoic trichlorides (Benzotrichloride)	98-07-7	C02	01/01/87
Benzoyl chloride	98-88-4	C09	01/01/87
Benzoyl peroxide	94-36-0	C09	01/01/87
Benzyl chloride	100-44-7	C02	01/01/87
Beryllium	7440-41-7	C15	01/01/87
Biphenyl	92-52-4	C01	01/01/87
Bis(2-chloroethyl) ether	111-44-4	C06	01/01/87
Bis(chloromethyl) ether	542-88-1	C06	01/01/87
Bis(2-chloro-1-methylethyl) ether	108-60-1	C06	01/01/87
Bis(2-ethylhexyl) adipate	103-23-1	C08	01/01/87
Bromoform (Tribromomethane)	75-25-2	C02	01/01/87
Bromomethane (Methyl bromide)	74-83-9	C02	01/01/87
1,3-Butadiene	106-99-0	C01	01/01/87
Butyl acrylate	141-32-2	C08	01/01/87
n-Butyl alcohol	71-36-3	C05	01/01/87
sec-Butyl alcohol	78-92-2	C05	01/01/87
tert-Butyl alcohol	75-65-0	C05	01/01/87
Butyl benzyl phthalate	85-68-7	C08	01/01/87
1,2-Butylene oxide	106-88-7	C06	01/01/87
Butyraldehyde	123-72-8	C07	01/01/87
C.I. Acid Blue 9, diammonium salt	2650-18-2	C13	01/01/87
C.I. Acid Blue 9, disodium salt	3844-45-9	C13	01/01/87
C.I. Acid Green 3	4680-78-8	C13	01/01/87
C.I. Basic Green 4	569-64-2	C10	01/01/87
C.I. Basic Red 1	989-38-8	C10	01/01/87
C.I. Disperse Yellow 3	2832-40-8	C14	01/01/87
C.I. Food Red 5	3761-53-3	C14	01/01/87
C.I. Food Red 15	81-88-9	C10	01/01/87
C.I. Solvent Orange 7	3118-97-6	C14	01/01/87
C.I. Solvent Yellow 3	97-56-3	C14	01/01/87
C.I. Solvent Yellow 14	842-07-9	C14	01/01/87
C.I. Vat Yellow 4	128-66-5	C07	01/01/87
Cadmium	7440-43-9	C15	01/01/87
Calcium cyanamide	156-62-7	C11	01/01/87
Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2- [(trichloromethyl)thio]-]	133-06-2	C13	01/01/87
Carbaryl [1-Naphthalenol,methylcarbamate]	63-25-2	C09	01/01/87
Carbon disulfide	75-15-0	C13	01/01/87
Carbon tetrachloride	56-23-5	C02	01/01/87
Carbonyl sulfide	463-58-1	C13	01/01/87
Catechol	120-80-9	C05	01/01/87
Chloramben [Benzoic acid, 5-amino-2,5-dichloro-]	133-90-4	C11	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a- hexahydro-]	57-74-9	C03	01/01/87
Chlorinated fluorocarbon (Freon 113)[Ethane, 1,1,2-trichloro-1,2, 2-trifluoro-]	76-13-1	C02	01/01/87
Chlorine	7782-50-5	C16	01/01/87
Chlorine dioxide	10049-04-4	C16	01/01/87
Chloroacetic acid	79-11-8	C08	01/01/87
2-Chloroacetophenone	532-27-4	C07	01/01/87
Chlorobenzene	108-90-7	C04	01/01/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester]	510-15-6	C08	01/01/87
Chloroethane (Ethyl chloride)	75-00-3	C02	01/01/87
Chloroform	67-66-3	C02	01/01/87
Chloromethane (Methyl chloride)	74-87-3	C02	01/01/87
Chloromethyl methyl ether	107-30-2	C08	01/01/87
Chloroprene	126-99-8	C03	01/01/87
Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1897-45-6	C09	01/01/87
Chromium	7440-47-3	C15	01/01/87
Cobalt	7440-48-4	C15	01/01/87
Copper	7440-50-8	C15	01/01/87
p-Cresidine	120-71-8	C06	01/01/87
Cresol (mixed isomers)	1319-77-3	C05	01/01/87
m-Cresol	108-39-4	C05	01/01/87
o-Cresol	95-48-7	C05	01/01/87
p-Cresol	106-44-5	C05	01/01/87
Cumene	98-82-8	C01	01/01/87
Cumene hydroperoxide	80-15-9	C05	01/01/87
Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	135-20-6	C12	01/01/87
Cyanide compounds	57-12-5	C16	01/01/87
Cyclohexane	110-82-7	C01	01/01/87
2,4-D [Acetic acid, (2,4-dichloro-phenoxy)-]	94-75-7	C08	01/01/87
Decabromodiphenyl oxide	1163-19-5	C04	01/01/87
Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3- dichloro-2-propenyl) ester]	2303-16-4	C13	01/01/87
2,4-Diaminoanisole	615-05-4	C10	01/01/87
2,4-Diaminoanisole sulfate	39156-41-7	C10	01/01/87
4,4'-Diaminodiphenyl ether	101-80-4	C10	01/01/87
Diaminotoluene (mixed isomers)	25376-45-8	C10	01/01/87
2,4-Diaminotoluene	95-80-7	C10	01/01/87
Diazomethane	334-88-3	C11	01/01/87
Dibenzofuran	132-64-9	C06	01/01/87
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	C02	01/01/87
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	C02	01/01/87
Dibutyl phthalate	84-74-2	C08	01/01/87
Dichlorobenzene (mixed isomers)	25321-22-6	C04	01/01/87
1,2-Dichlorobenzene	95-50-1	C04	01/01/87
1,3-Dichlorobenzene	541-73-1	C04	01/01/87
1,4-Dichlorobenzene	106-46-7	C04	01/01/87
3,3'-Dichlorobenzidine	91-94-1	C10	01/01/87
Dichlorobromomethane	75-27-4	C02	01/01/87
1,2-Dichloroethane (Ethylene dichloride)	107-06-2	C02	01/01/87
1,2-Dichloroethylene	540-59-0	C03	01/01/87
Dichloromethane (Methylene chloride)	75-09-2	C02	01/01/87
2,4-Dichlorophenol	120-83-2	C04	01/01/87
1,2-Dichloropropane	78-87-5	C02	01/01/87
1,3-Dichloropropylene	542-75-6	C03	01/01/87
Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	62-73-7	C13	01/01/87
Dicofol [Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl).alpha.-(trichloromethyl)-]	115-32-2	C04	01/01/87
Diepoxybutane	1464-53-5	C06	01/01/87
Diethanolamine	111-42-2	C10	01/01/87
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	C08	01/01/87
Diethyl phthalate	84-66-2	C08	01/01/87
Diethyl sulfate	64-67-5	C13	01/01/87
3,3'-Dimethoxybenzidine	119-90-4	C10	01/01/87
4-Dimethylaminoazobenzene	60-11-7	C10	01/01/87
3,3'-Dimethylbenzidine(*o*-Tolidine)	119-93-7	C10	01/01/87
Dimethylcarbamyl chloride	79-44-7	C09	01/01/87
1,1-Dimethyl hydrazine	57-14-7	C11	01/01/87
2,4-Dimethylphenol	105-67-9	C05	01/01/87
Dimethyl phthalate	131-11-3	C08	01/01/87
Dimethyl sulfate	77-78-1	C13	01/01/87
4,6-Dinitro-*o*-cresol	534-52-1	C12	01/01/87
2,4-Dinitrophenol	51-28-5	C12	01/01/87
2,4-Dinitrotoluene	121-14-2	C12	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
2,6-Dinitrotoluene	606-20-2	C12	01/01/87
n-Dioctyl phthalate	117-84-0	C08	01/01/87
1,4-Dioxane	123-91-1	C06	01/01/87
1,2-Diphenylhydrazine(Hydrazobenzene)	122-66-7	C11	01/01/87
Direct Black 38	1937-37-7	C14	01/01/87
Direct Blue 6	2602-46-2	C14	01/01/87
Direct Brown 95	16071-86-6	C14	01/01/87
Epichlorohydrin	106-89-8	C06	01/01/87
2-Ethoxyethanol	110-80-5	C06	01/01/87
Ethyl acrylate	140-88-5	C06	01/01/87
Ethylbenzene	100-41-4	C01	01/01/87
Ethyl chloroformate	541-41-3	C09	01/01/87
Ethylene	74-85-1	C01	01/01/87
Ethylene glycol	107-21-1	C05	01/01/87
Ethyleneimine (Aziridine)	151-56-4	C11	01/01/87
Ethylene oxide	75-21-8	C06	01/01/87
Ethylene thiourea	96-45-7	C13	01/01/87
Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	2164-17-2	C09	01/01/87
Formaldehyde	50-00-0	C07	01/01/87
Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7- methano-1H-indene]	76-44-8	C03	01/01/87
Hexachlorobenzene	118-74-1	C04	01/01/87
Hexachloro 1,3-butadiene	87-68-3	C03	01/01/87
Hexachlorocyclopentadiene	77-47-4	C03	01/01/87
Hexachloroethane	67-72-1	C02	01/01/87
Hexachloronaphthalene	1335-87-1	C04	01/01/87
Hexamethylphosphoramide	680-31-9	C13	01/01/87
Hydrazine	302-01-2	C11	01/01/87
Hydrazine sulfate	10034-93-2	C11	01/01/87
Hydrochloric acid	764-01-07	C16	01/01/87
Hydrogen cyanide	74-90-8	C16	01/01/87
Hydrogen fluoride	7664-39-3	C16	01/01/87
Hydroquinone	123-31-9	C07	01/01/87
Isobutyraldehyde	78-84-2	C07	01/01/87
Isopropyl alcohol (mfg.—strong acid processes)	67-63-0	C05	01/01/87
4,4'-Isopropylidenediphenol	80-05-7	C05	01/01/87
Lead	7439-92-1	C15	01/01/87
Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha., 3.beta. 4.alpha.,5.alpha.,6.beta.)-]	58-89-9	C02	01/01/87
Maleic anhydride	108-31-6	C08	01/01/87
Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	12427-38-2	C16	01/01/87
Manganese	7439-96-5	C15	01/01/87
Melamine	108-78-1	C10	01/01/87
Mercury	7439-97-6	C15	01/01/87
Methanol	67-56-1	C05	01/01/87
Methoxychlor [Benzene, 1,1'-(2,2 2-trichloroethylidene)bis[4-methoxy-]	72-43-5	C03	01/01/87
2-Methoxyethanol	109-86-4	C06	01/01/87
Methyl acrylate	96-33-3	C08	01/01/87
Methyl *tert*-butyl ether	1634-04-4	C06	01/01/87
4,4'-Methylenebis(2-chloro aniline) (MBOCA)	101-14-4	C10	01/01/87
4,4'-Methylenebis(*N,N*-dimethyl) benzenamine	101-61-1	C10	01/01/87
Methylenebis(phenylisocyanate) (MBI)	101-68-8	C11	01/01/87
Methylene bromide	74-95-3	C02	01/01/87
4,4'-Methylenedianiline	101-77-9	C10	01/01/87
Methyl ethyl ketone	78-93-3	C07	01/01/87
Methyl hydrazine	60-34-4	C11	01/01/87
Methyl iodide	74-88-4	C02	01/01/87
Methyl isobutyl ketone	108-10-1	C07	01/01/87
Methyl isocyanate	624-85-9	C11	01/01/87
Methyl methacrylate	80-62-6	C08	01/01/87
Michler's ketone	90-94-8	C07	01/01/87
Molybdenum trioxide	1313-27-5	C15	01/01/87
Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]	505-60-2	C13	01/01/87
Naphthalene	91-20-3	C01	01/01/87
alpha-Naphthylamine	134-32-7	C10	01/01/87
beta-Naphthylamine	91-59-8	C10	01/01/87
Nickel	7440-02-0	C15	01/01/87
Nitric acid	7697-37-2	C16	01/01/87
Nitrilotriacetic acid	139-13-9	C08	01/01/87
5-Nitro-*o*-anisidine	99-59-2	C12	01/01/87
Nitrobenzene	98-95-3	C12	01/01/87
4-Nitrobiphenyl	92-93-3	C12	01/01/87

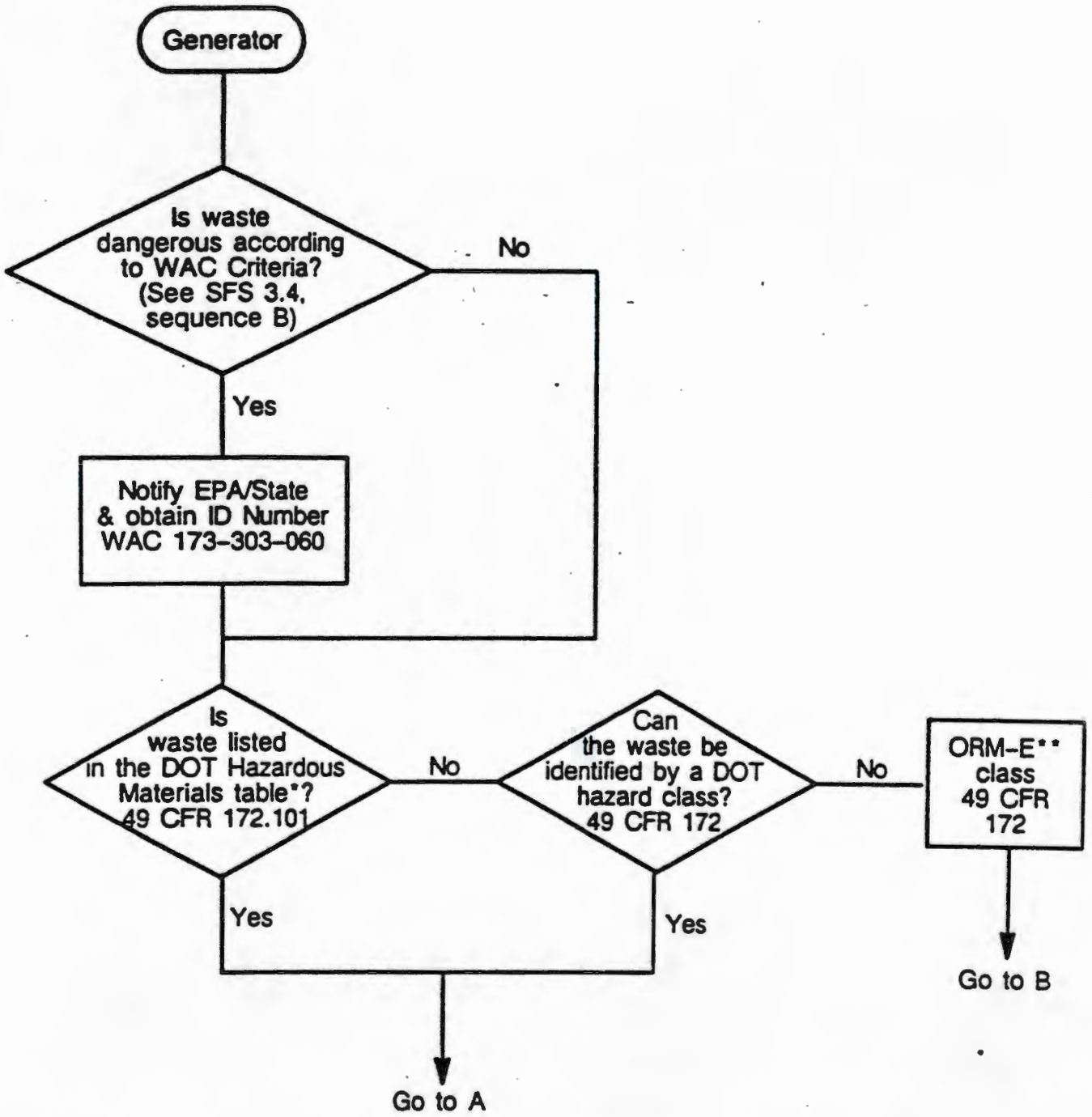
Chemical name	CAS No.	Generic classification code	Effective date
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	1836-75-5	C15	01/01/87
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	51-75-2	C10	01/01/87
Nitroglycerin	55-63-0	C12	01/01/87
2-Nitrophenol	88-75-5	C12	01/01/87
4-Nitrophenol	100-02-7	C12	01/01/87
2-Nitropropene	79-46-9	C12	01/01/87
p Nitrosodiphenylamine	156-10-5	C12	01/01/87
N,N-Dimethylaniline	121-69-7	C10	01/01/87
N-Nitrosodi-*n*-butylamine	924-16-3	C12	01/01/87
N-Nitrosodiethylamine	55-18-5	C12	01/01/87
N-Nitrosodimethylamine	62-75-9	C12	01/01/87
N-Nitrosodiphenylamine	86-30-6	C12	01/01/87
N-Nitrosodi-*n*-propylamine	621-64-7	C12	01/01/87
N-Nitrosomethylvinylamine	4549-40-0	C12	01/01/87
N-Nitrosomorpholine	59-89-2	C12	01/01/87
N-Nitroso-*N*-ethylurea	759-73-9	C12	01/01/87
N-Nitroso-*N*-methylurea	684-93-5	C12	01/01/87
N-Nitrosonornicotine	16543-55-8	C12	01/01/87
N-Nitrosopiperidine	100-75-4	C12	01/01/87
Octachloronaphthalene	2234-13-1	C04	01/01/87
Osmium tetroxide	20816-12-0	C15	01/01/87
Parathion [Phosphorothioic acid, 0,0-dieth 1-0-(4-nitrophenyl)ester]	56-38-2	C13	01/01/87
Pentachlorophenol (PCP)	87-86-5	C04	01/01/87
Peracetic acid	79-21-0	C09	01/01/87
Phenol	108-95-2	C05	01/01/87
p-Phenylenediamine	106-50-3	C10	01/01/87
2-Phenylphenol	90-43-7	C05	01/01/87
Phosgene	75-44-5	C09	01/01/87
Phosphoric acid	7664-38-2	C16	01/01/87
Phosphorus (yellow or white)	7723-14-0	C16	01/01/87
Phthalic anhydride	85-44-9	C08	01/01/87
Picric acid	88-89-1	C06	01/01/87
Polychlorinated biphenyls (PCBs)	1336-36-3	C04	01/01/87
Propane sultone	1120-71-4	C13	01/01/87
beta-Propiolactone	57-57-8	C06	01/01/87
Propionaldehyde	123-38-6	C07	01/01/87
Propoxur [Phenol, 2-(1-methylethoxy)-,methylcarbamate]	114-26-1	C09	01/01/87
Propylene (Propene)	115-07-1	C01	01/01/87
Propyleneimine	75-55-8	C11	01/01/87
Propylene oxide	75-56-9	C06	01/01/87
Pyridine	110-86-1	C11	01/01/87
Quinoline	91-22-5	C11	01/01/87
Quinone	106-51-4	C07	01/01/87
Quintozene [Benzene, pentachloronitro-]	82-68-8	C12	01/01/87
Saccharin (manufacturing) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	81-07-2	C09	01/01/87
Safrole	94-59-7	C06	01/01/87
Selenium	7782-49-2	C16	01/01/87
Silver and compounds	7440-22-4	C15	01/01/87
Sodium hydroxide (solution)	1310-73-2	C16	01/01/87
Sodium sulfate (solution)	7757-82-6	C16	01/01/87
Styrene	100-42-5	C01	01/01/87
Styrene oxide	96-09-3	C06	01/01/87
Sulfuric acid	7664-93-9	C16	01/01/87
Terephthalic acid	100-21-0	C08	01/01/87
1,1,2,2-Tetrachloroethane	79-34-5	C02	01/01/87
Tetrachloroethylene (Perchloroethylene)	127-18-4	C03	01/01/87
Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	961-11-5	C13	01/01/87
Thallium	7440-28-0	C15	01/01/87
Thioacetamide	62-55-5	C13	01/01/87
4,4'-Thiodianiline	139-65-1	C13	01/01/87
Thiourea	62-56-6	C13	01/01/87
Thorium dioxide	1314-20-1	C15	01/01/87
Titanium dioxide	13463-67-7	C15	01/01/87
Titanium tetrachloride	7550-45-0	C15	01/01/87
Toluene	108-88-3	C01	01/01/87
Toluene 2,4 diisocyanate	584-84-9	C11	01/01/87
Toluene-2,6-diisocyanate	91-08-7	C11	01/01/87
o-Toluidine	95-53-4	C10	01/01/87
o-Toluidine hydrochloride	636-21-5	C10	01/01/87
Toxaphene	8001-35-2	C02	01/01/87

Chemical name	CAS No.	Generic classification code	Effective date
Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	68-76-8	C11	01/01/87
Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-,dimethyl ester]	52-68-6	C13	01/01/87
1,2,4-Trichlorobenzene	120-82-1	C04	01/01/87
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6	C02	01/01/87
1,1,2-Trichloroethane	79-00-5	C02	01/01/87
Trichloroethylene	79-01-6	C03	01/01/87
2,4,5-Trichlorophenol	95-95-4	C04	01/01/87
2,4,6 Trichlorophenol	88-06-2	C04	01/01/87
Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	1582-09-8	C12	01/01/87
1,2,4-Trimethylbenzene	95-63-6	C01	01/01/87
Tris(2,3-dibromopropyl) phosphate	126-72-7	C13	01/01/87
Urethane (Ethyl carbamate)	51-79-6	C09	01/01/87
Vanadium (fume or dust)	7440-62-2	C15	01/01/87
Vinyl acetate	108-05-4	C08	01/01/87
Vinyl bromide	593-60-2	C03	01/01/87
Vinyl chloride	75-01-4	C03	01/01/87
Vinylidene chloride	75-35-4	C03	01/01/87
Xylene (mixed isomers)	1330-20-7	C01	01/01/87
m-Xylene	108-38-3	C01	01/01/87
o-Xylene	95-47-6	C01	01/01/87
p-Xylene	106-42-3	C01	01/01/87
2,6-Xylidine	87-62-7	C10	01/01/87
Zinc (fume or dust)	7440-66-6	C15	01/01/87
Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	12122-67-7	C15	01/01/87

(b) *CAS Number listing.*

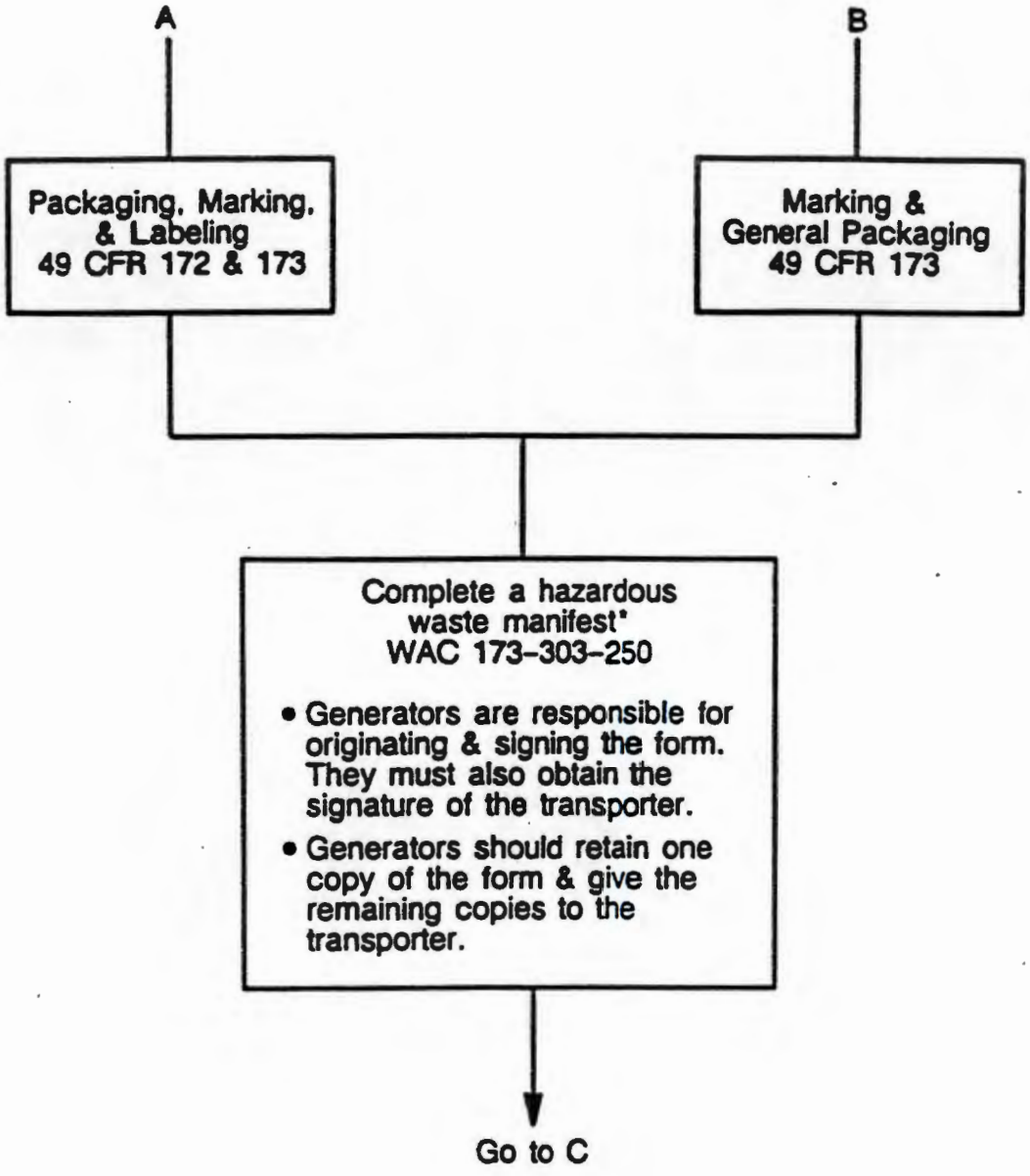
CAS No.	Chemical name	Generic classification code	Effective date
50-00-0	Formaldehyde	C07	01/01/87
51-28 5	2,4-Dinitrophenol	C12	01/01/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl) -N-methylethanamine]	C10	01/01/87
51-79-6	Urethane (Ethyl carbamate)	C09	01/01/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	C13	01/01/87
53-96-3	2-Acetylaminofluorene	C10	01/01/87
55-18-5	*N*-Nitrosodiethylamine	C12	01/01/87
55-21-0	Benzamide	C09	01/01/87
55-63-0	Nitroglycerin	C12	01/01/87
56-23-5	Carbon tetrachloride	C02	01/01/87
56-38-2	Parathion [Phosphorothioic acid, 0, 0-diethyl 1-0-(4-nitrophenyl) ester]	C13	01/01/87
57-12-5	Cyanide compounds	C16	01/01/87
57-14-7	1,1-Dimethyl hydrazine	C11	01/01/87
57-57-8	*beta*-Propiolactone	C08	01/01/87
57-74-9	Chlordane [4, 7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	C03	01/01/87
58-89-9	Lindane [Cyclohexane 1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-].	C02	01/01/87
59-89-2	*N*-Nitrosomorpholine	C12	01/01/87
60-09-3	4-Aminoazobenzene	C10	01/01/87
60-11-7	4-Dimethylaminoazobenzene	C10	01/01/87
60-34-4	Methyl hydrazine	C11	01/01/87
60-35-5	Acetamide	C09	01/01/87
62-53-3	Aniline	C10	01/01/87
62-55-5	Thioacetamide	C13	01/01/87
62-56-6	Thiourea	C13	01/01/87
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	C13	01/01/87
62-75-9	*N*-Nitrosodimethylamine	C12	01/01/87
63-25-2	Carbaryl [1-Naphthalenol methylcarbamate]	C09	01/01/87
64-67-5	Diethyl sulfate	C13	01/01/87
67-56-1	Methanol	C05	01/01/87
67-63-0	Isopropyl alcohol (mfg.—strong acid processes)	C05	01/01/87
67-64-1	Acetone	C07	01/01/87
67-66-3	Chloroform	C02	01/01/87
67-72-1	Hexachloroethane	C02	01/01/87
68-76-8	Triaziquone [2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris (1-aziridinyl)-]	C11	01/01/87
71-36-3	*n*-Butyl alcohol	C05	01/01/87
71-43-2	Benzene	C01	01/01/87

3.7 Transportation Subflowsheet

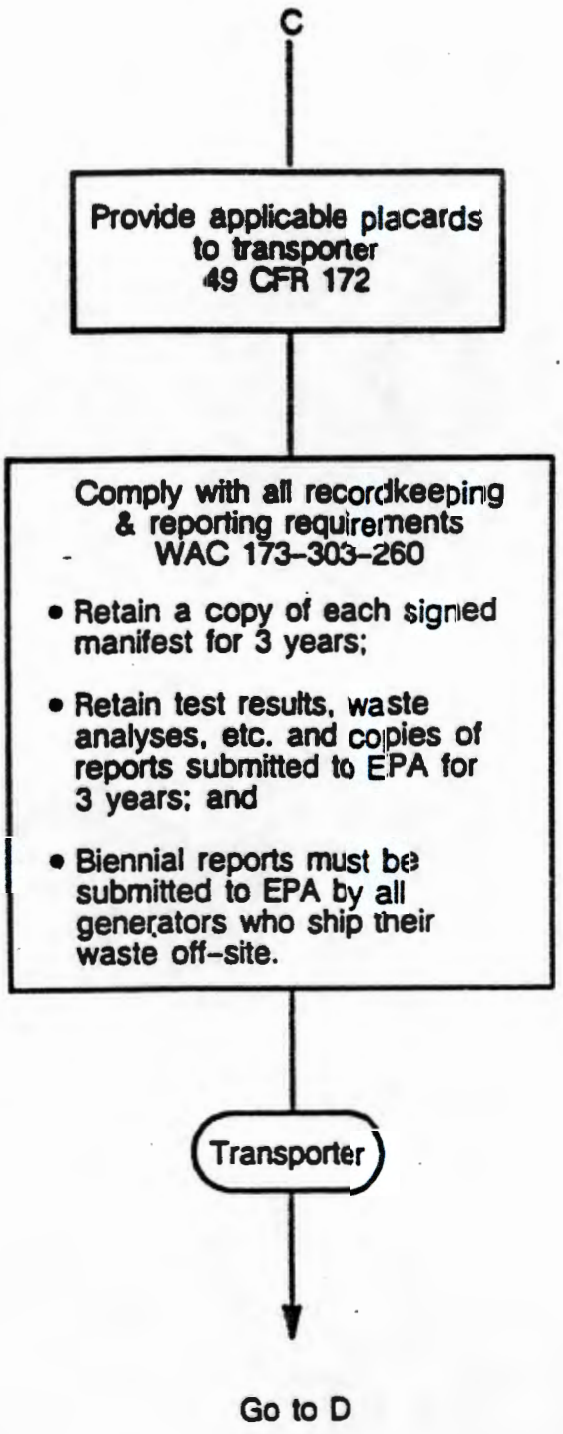


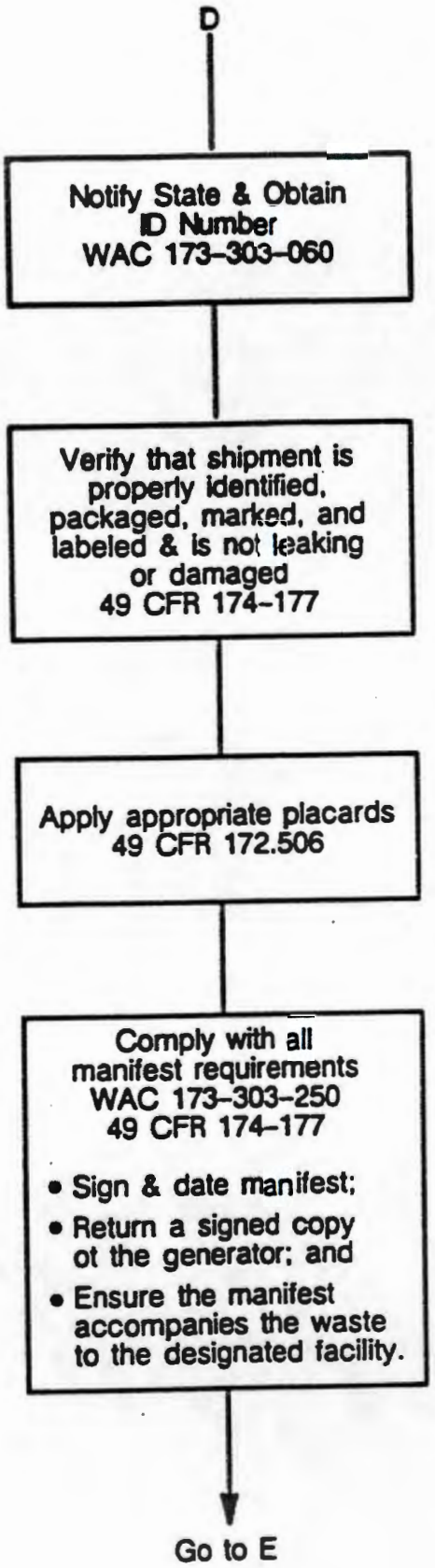
* Identification of hazardous wastes under EPA is a separate procedure from classifying wastes under DOT's regulations. DOT considers hazardous waste to be a subset of hazardous materials regulated under 49 CFR. In addition, the four characteristics used by EPA to identify wastes are different than DOT's hazard classes.

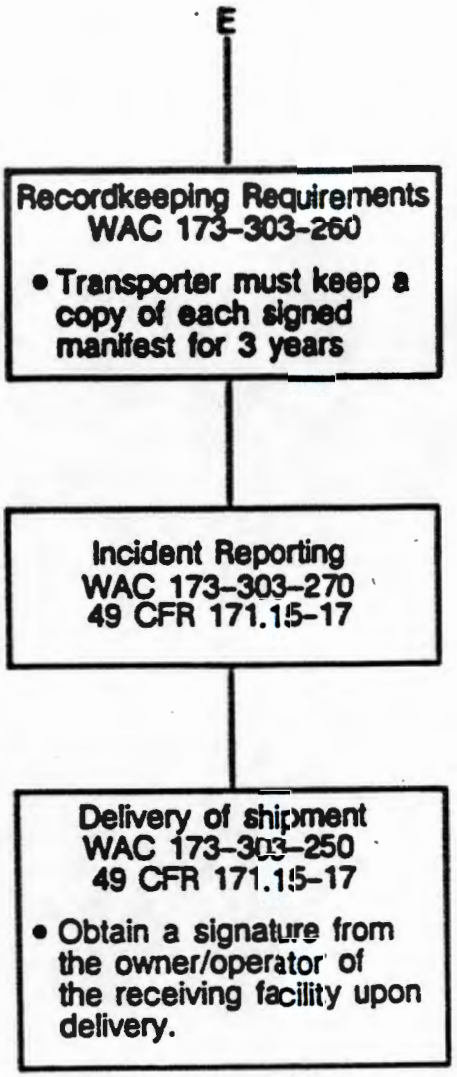
** Other Regulated Material not included in any other DOT hazard class.



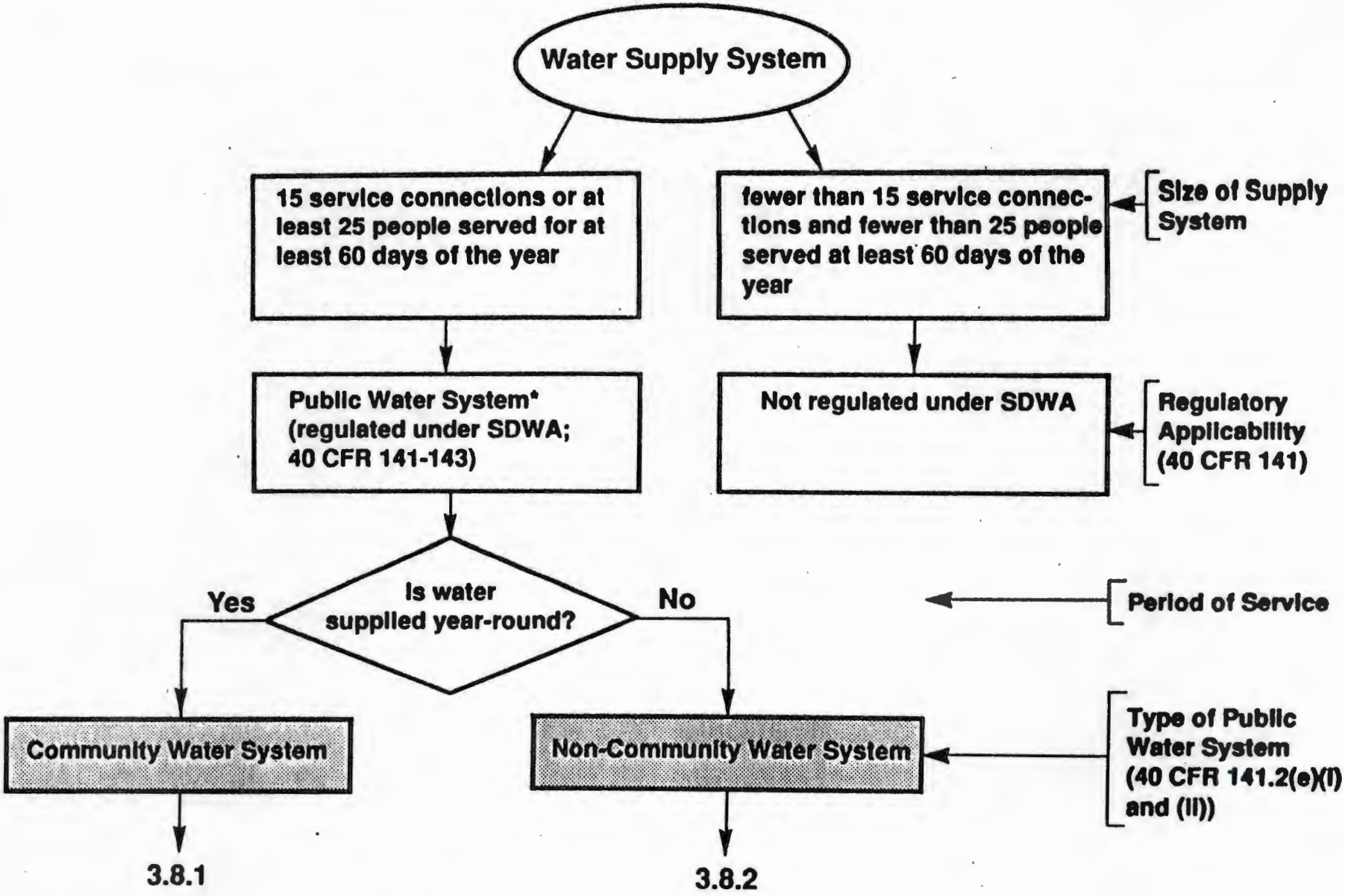
* DOT regulations specify that an EPA manifest may be used in place of a DOT shipping paper (49 CFR 172.05).


C
Provide applicable placards to transporter 49 CFR 172
Comply with all recordkeeping & reporting requirements WAC 173-303-260
• Retain a copy of each signed manifest for 3 years;
• Retain test results, waste analyses, etc. and copies of reports submitted to EPA for 3 years; and
• Biennial reports must be submitted to EPA by all generators who ship their waste off-site.
Transporter
Go to D


D
Notify State & Obtain ID Number WAC 173-303-060
Verify that shipment is properly identified, packaged, marked, and labeled & is not leaking or damaged 49 CFR 174-177
Apply appropriate placards 49 CFR 172.506
Comply with all manifest requirements WAC 173-303-250 49 CFR 174-177
• Sign & date manifest;
• Return a signed copy ot the generator; and
• Ensure the manifest accompanies the waste to the designated facility.
Go to E


E
Recordkeeping Requirements
WAC 173-303-260
• Transporter must keep a copy of each signed manifest for 3 years
Incident Reporting
WAC 173-303-270
49 CFR 171.15-17
Delivery of shipment
WAC 173-303-250
49 CFR 171.15-17
• Obtain a signature from the owner/operator of the receiving facility upon delivery.

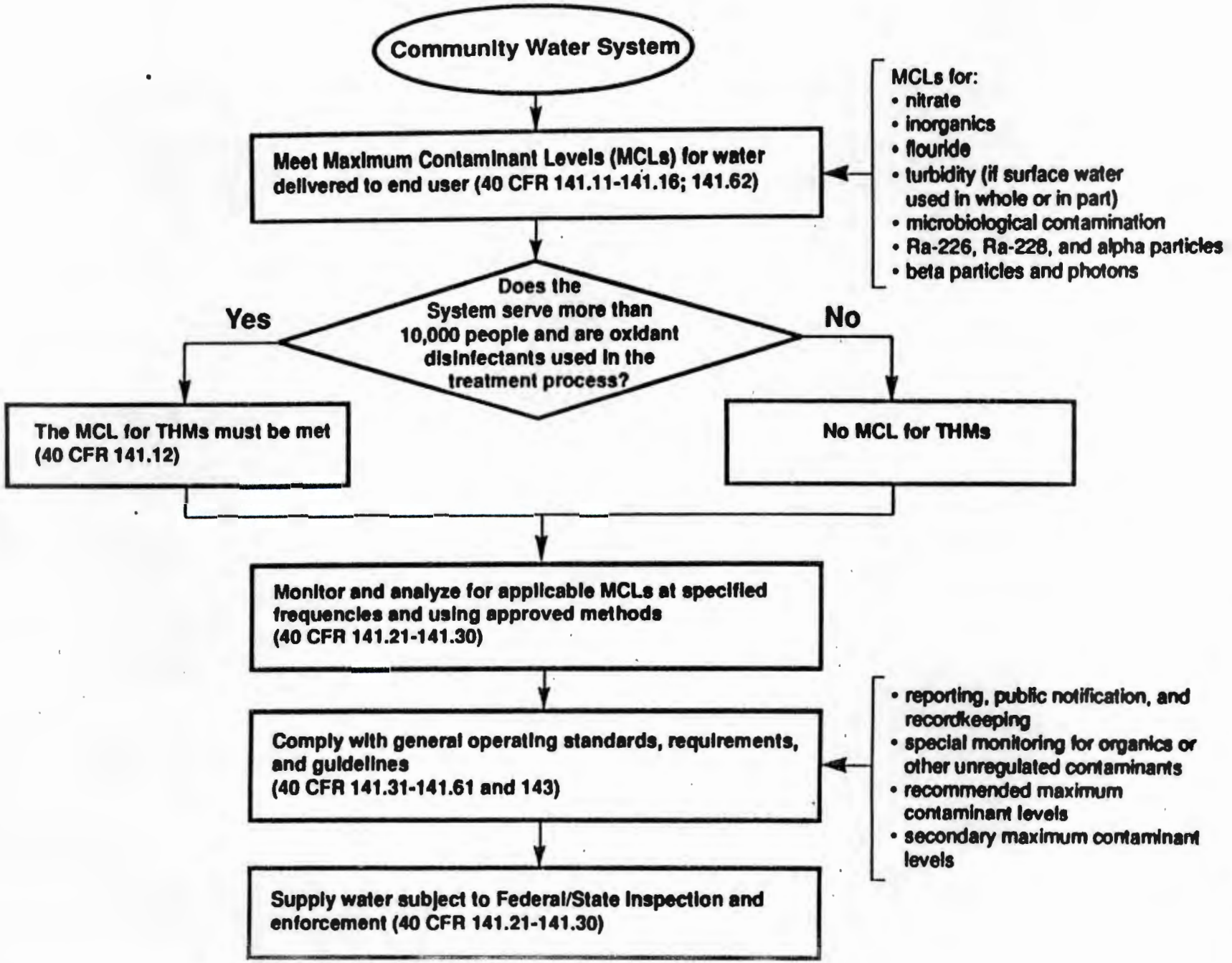
3.8 Water Supply System Subflowsheet



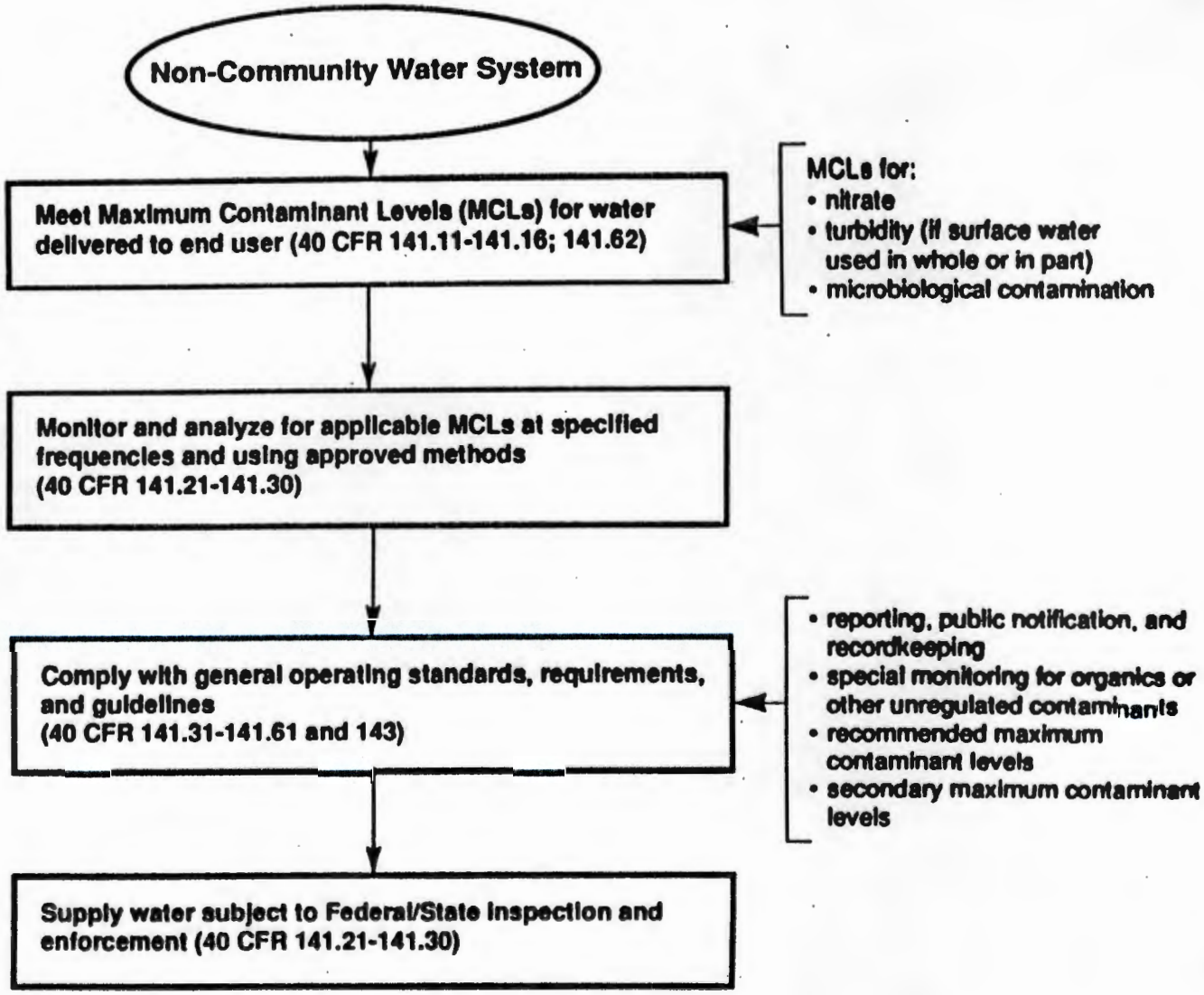
* See 40 CFR 141.3 for a list of conditions under which the SDWA Drinking Water Regulations do not apply to a Public Water System.

3.8.

Subflowsheet

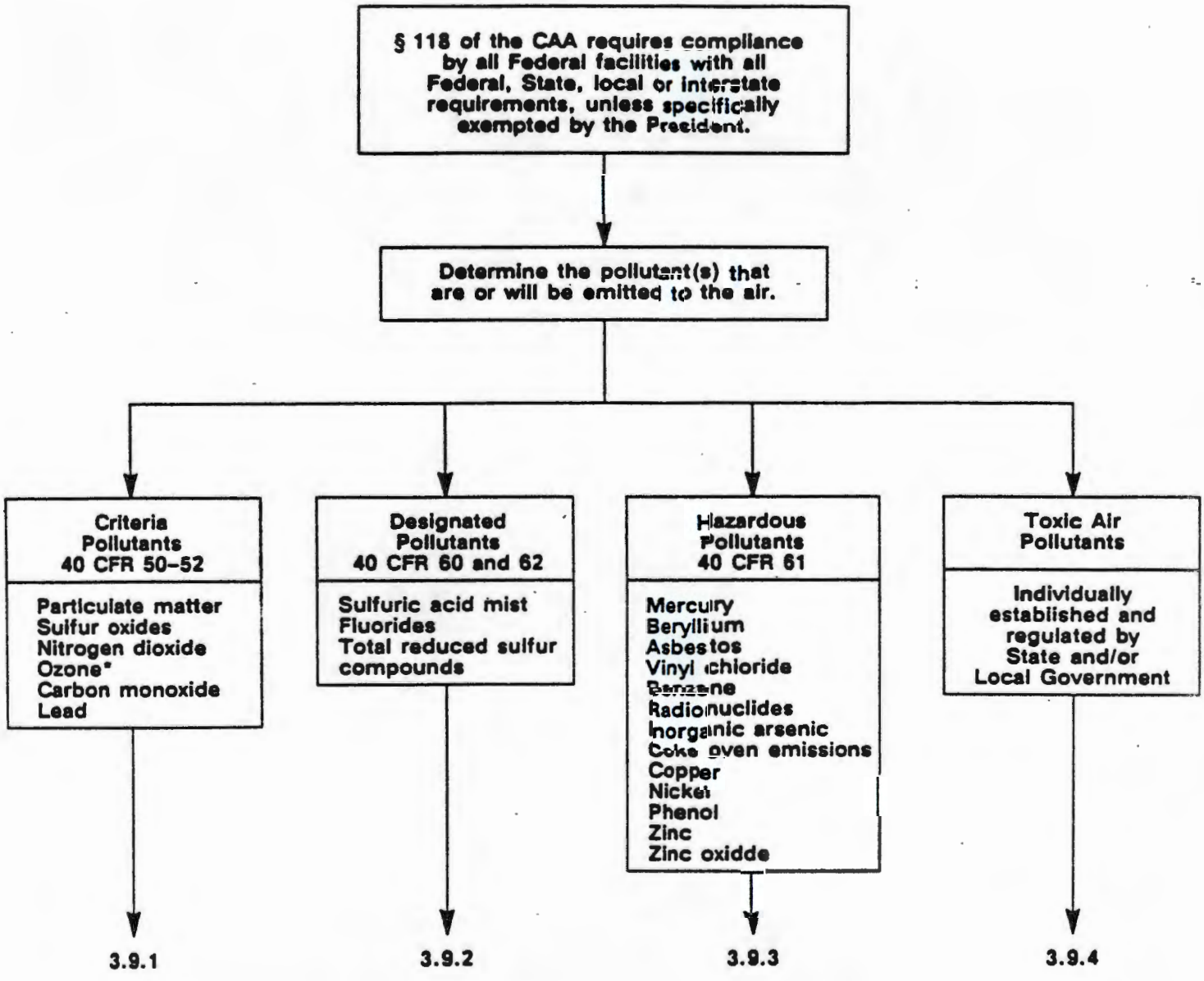


3.8.
Subflowsheet



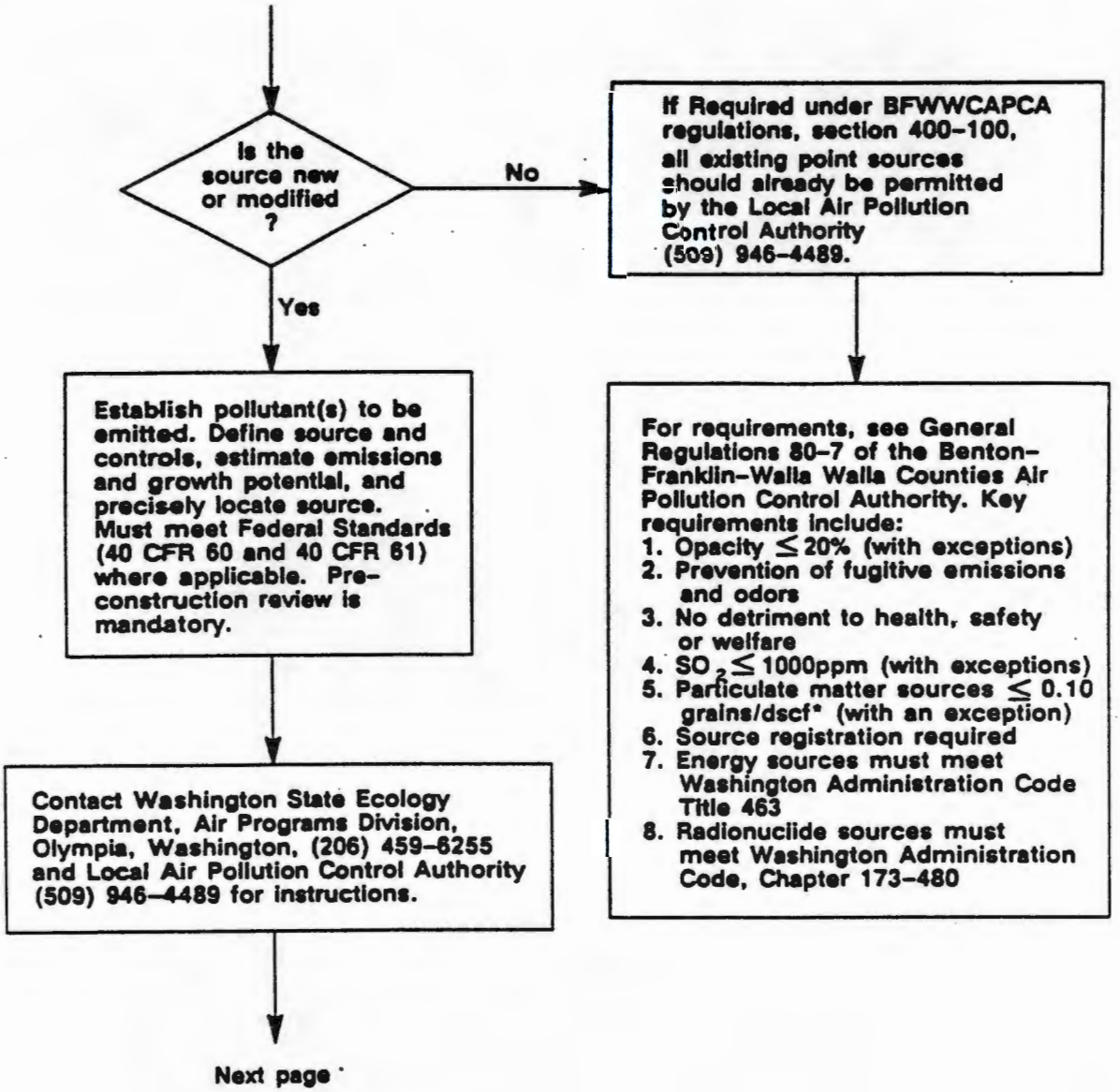
3.9 Clean Air Act Subflowsheet

3.9
Clean Air Act (CAA) Subflowsheet



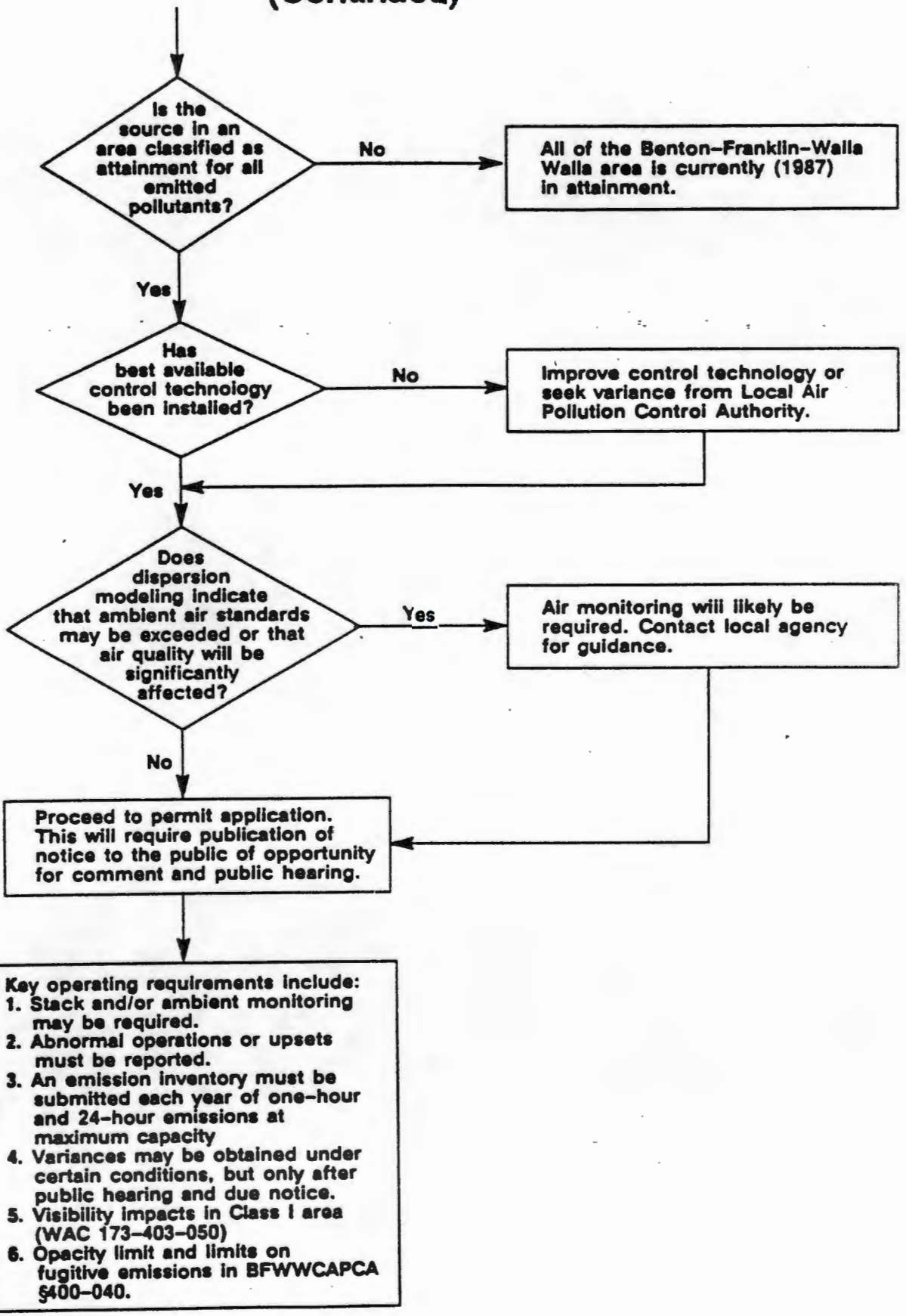
* Photochemically produced from volatile organic compounds and oxides of nitrogen

3.9.1
Criteria Pollutants Subflowsheet

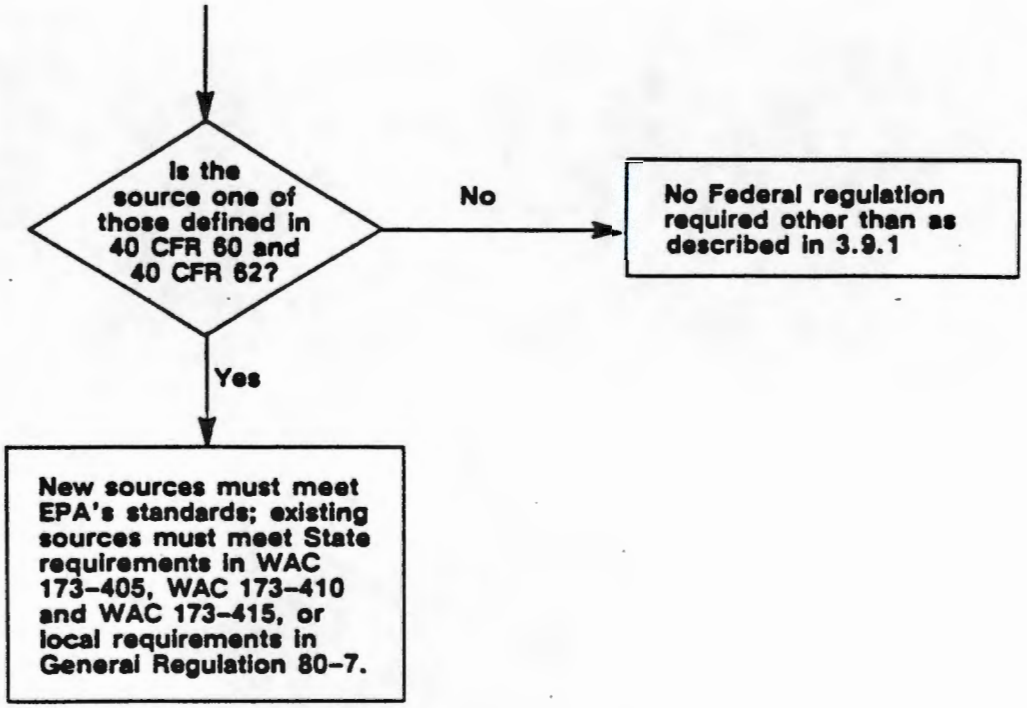


* dscf - dry standard cubic foot

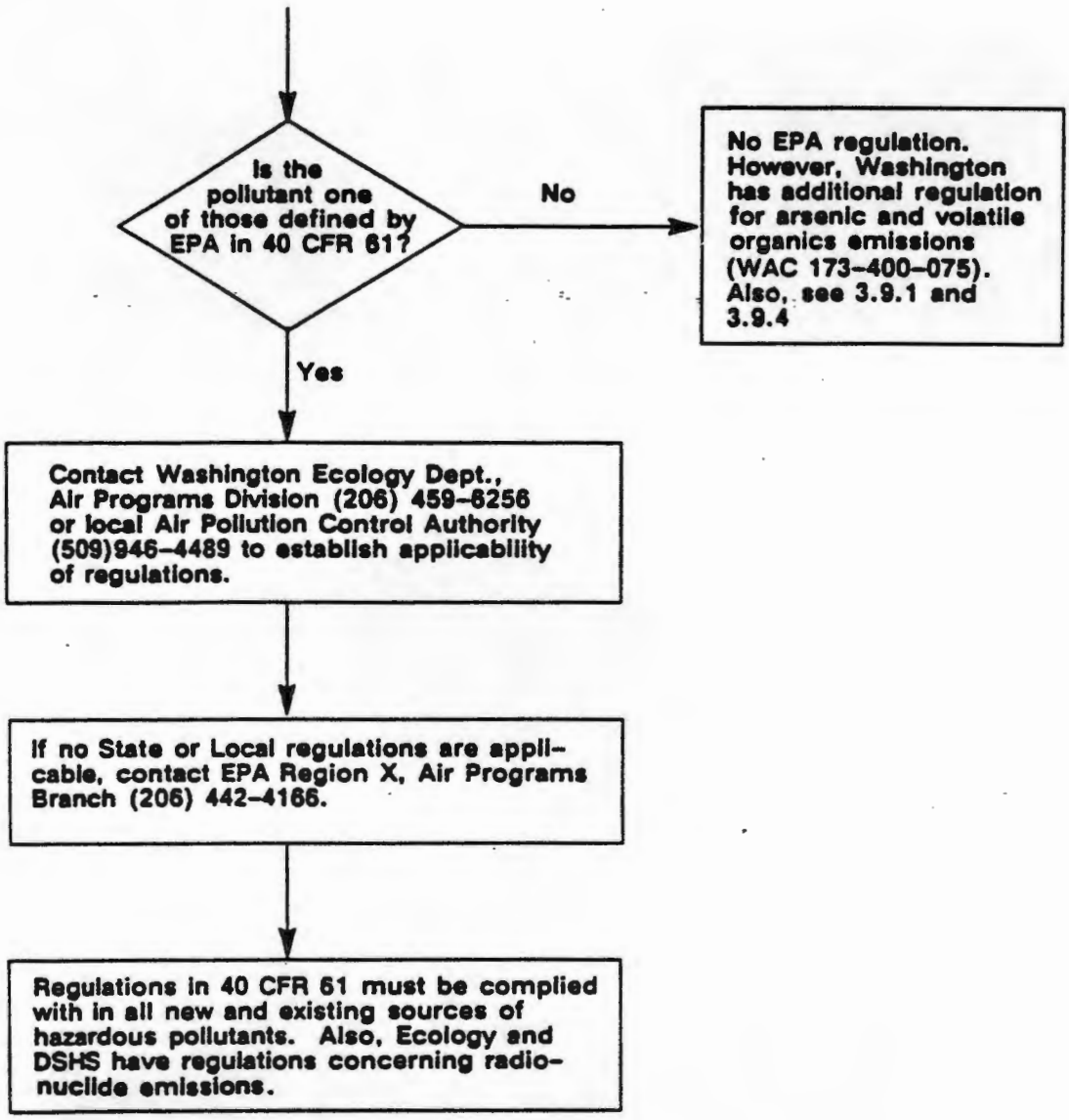
3.9.1 (Continued)



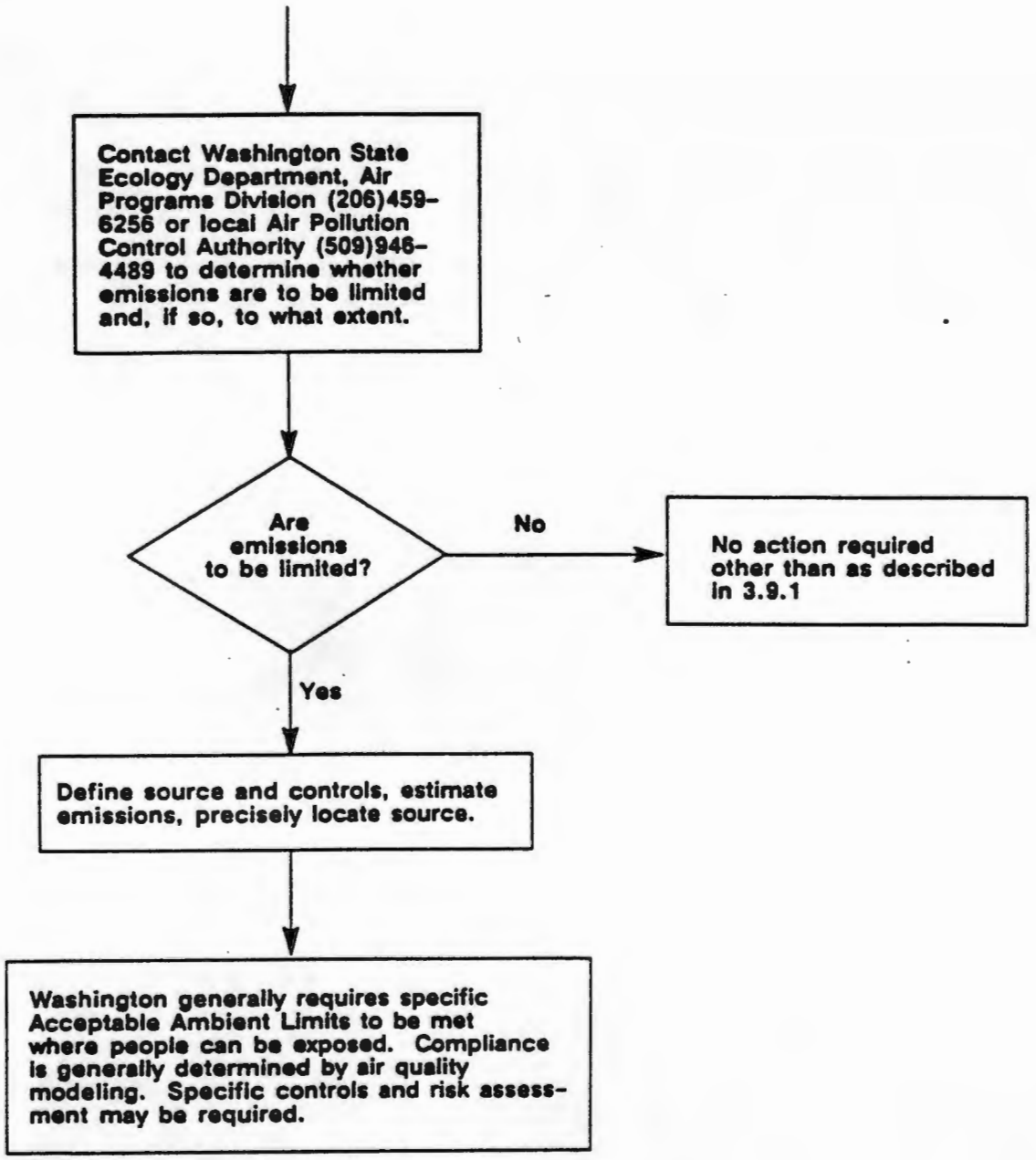
3.9.2
Designated Pollutants Subflowsheet



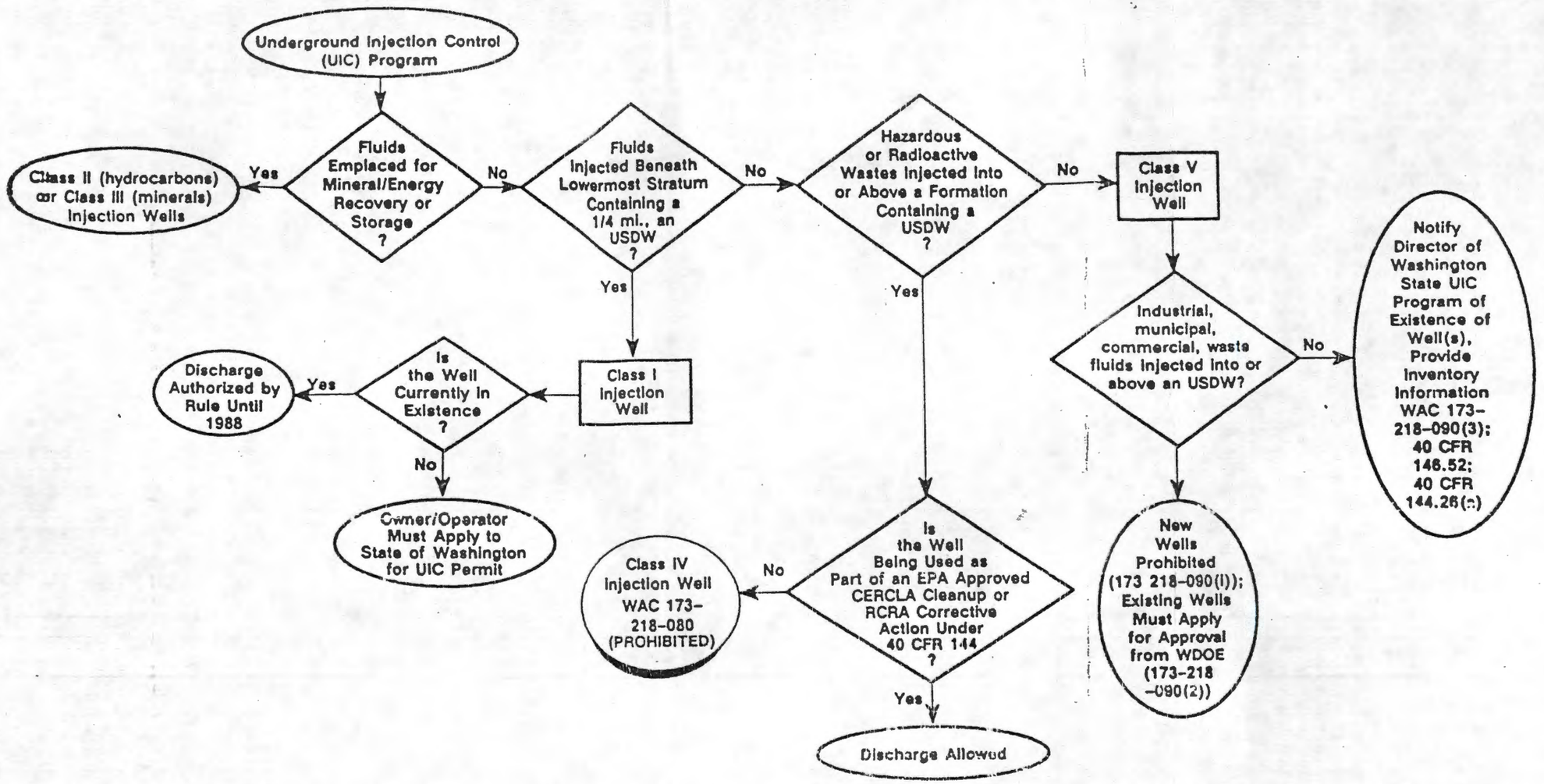
3.9.3
Hazardous Pollutants Subflowsheet



3.9.4
Toxic Air Pollutants Subflowsheet

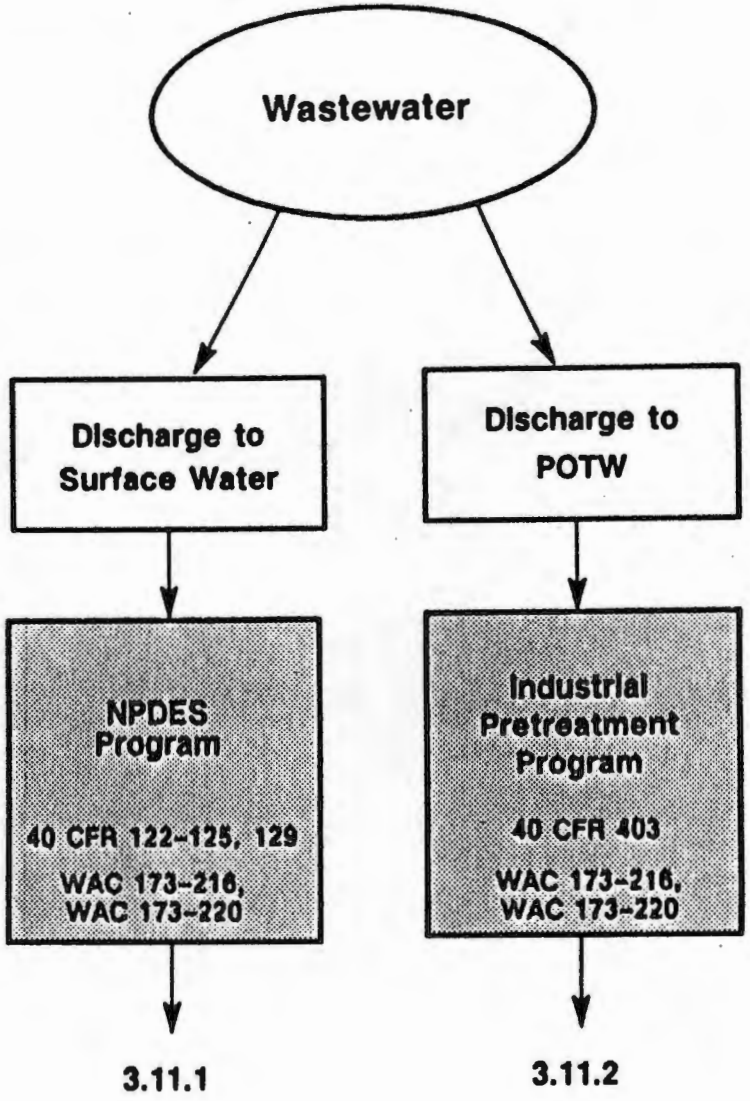


3.10 Underground Injection Control Well Subflowsheet

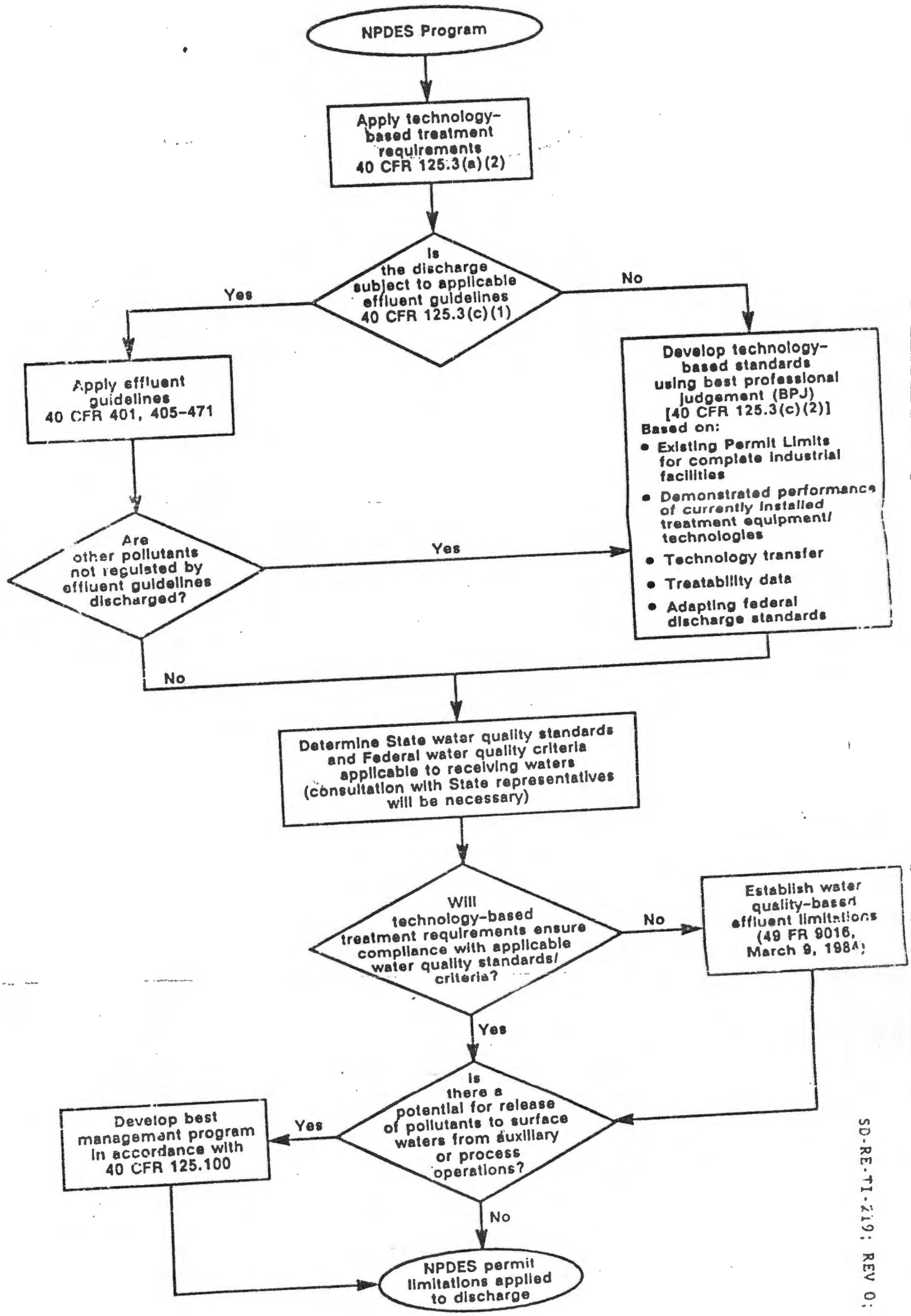


3.10 Underground Injection Control Subflowsheet

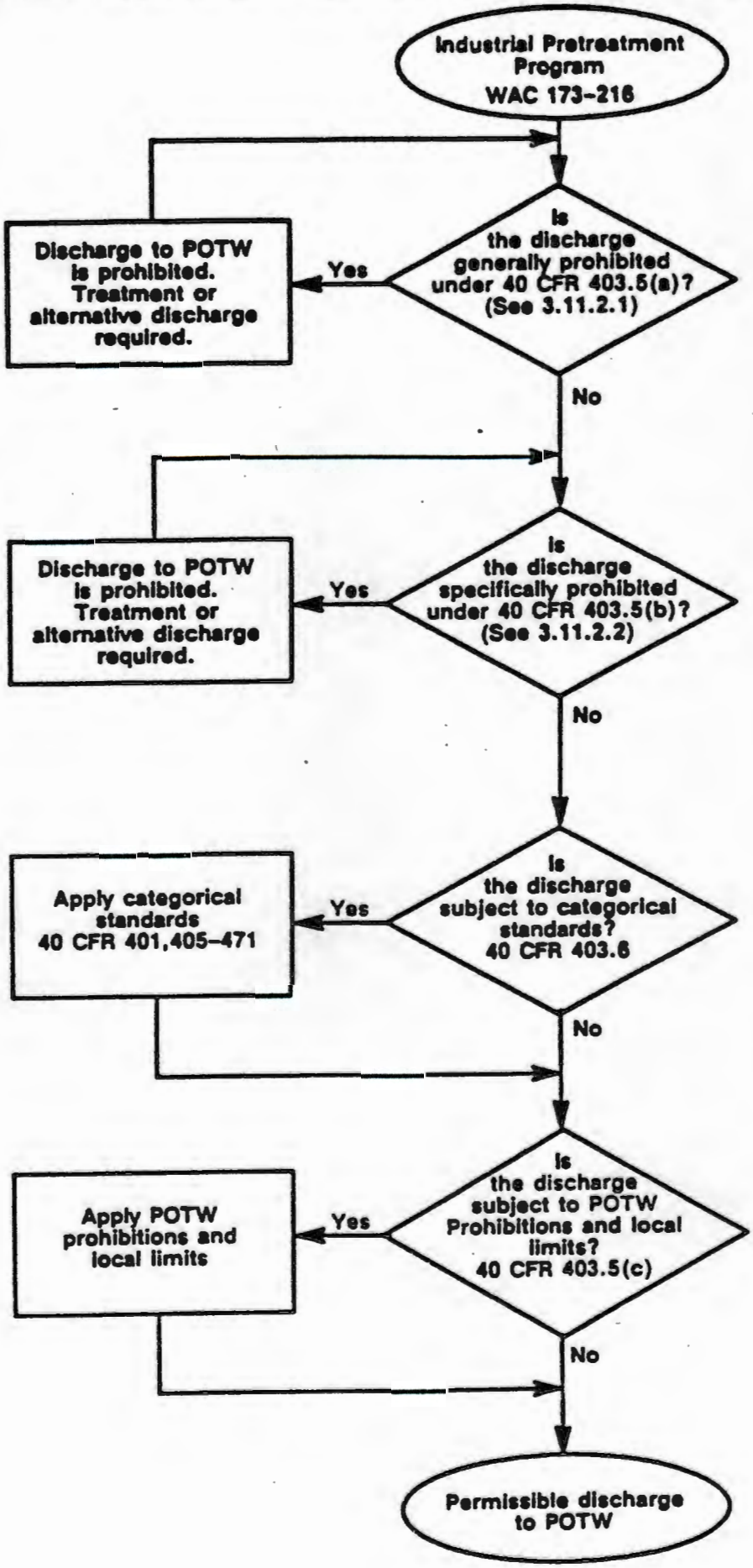
3.11
Water Programs Subflowsheet



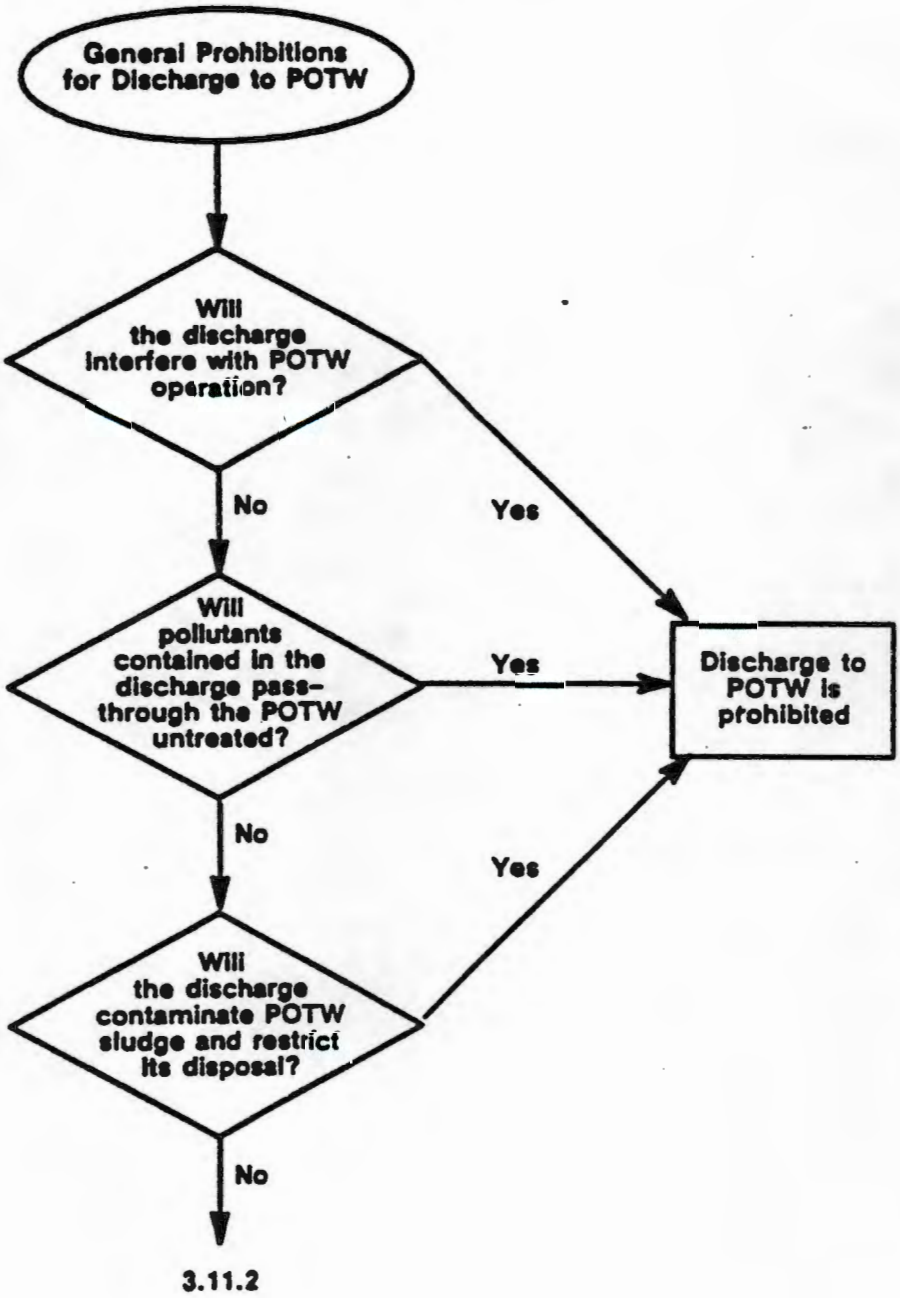
3.11.1
NPDES Subflowsheet



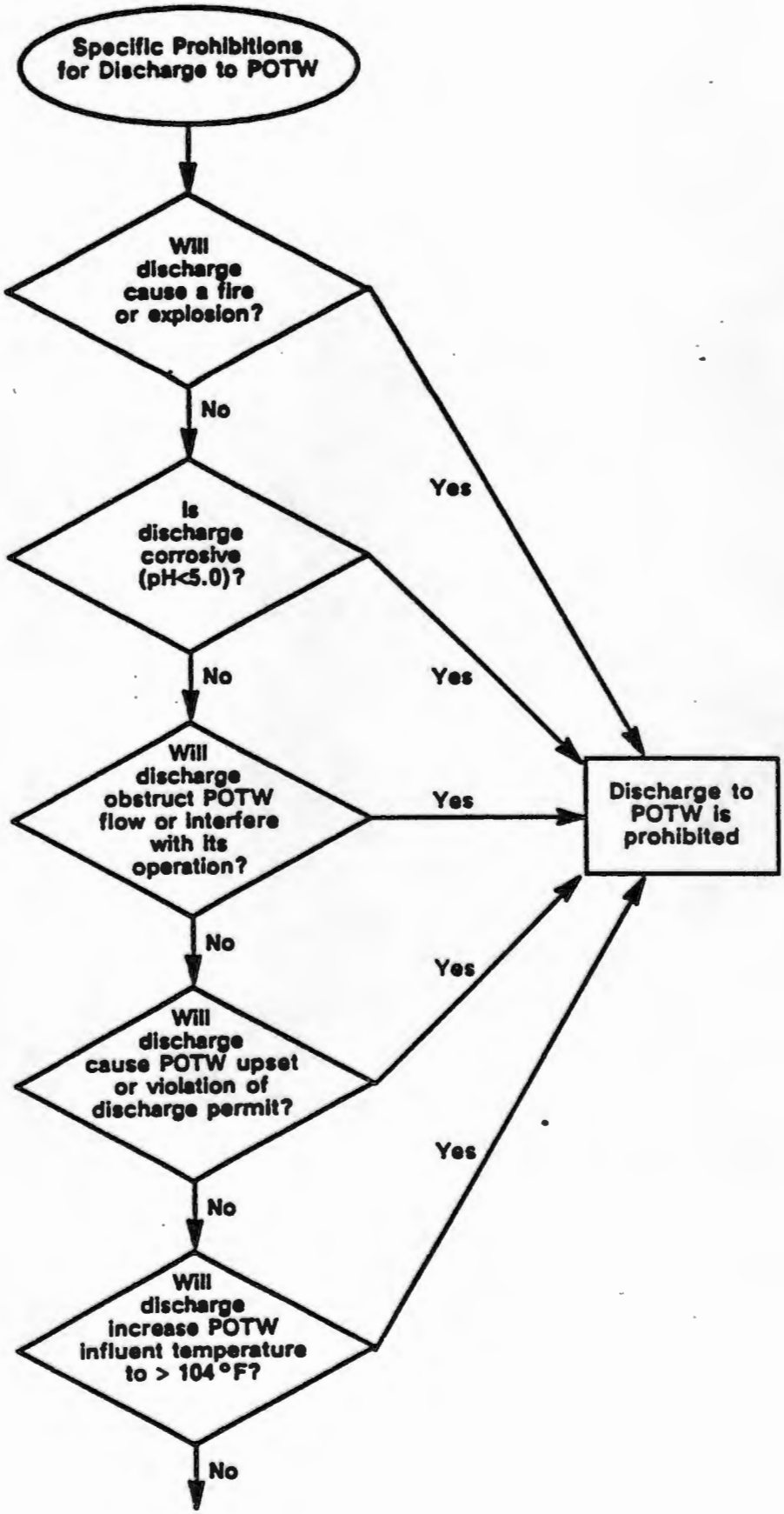
3.11.2 Industrial Pretreatment Subflowsheet



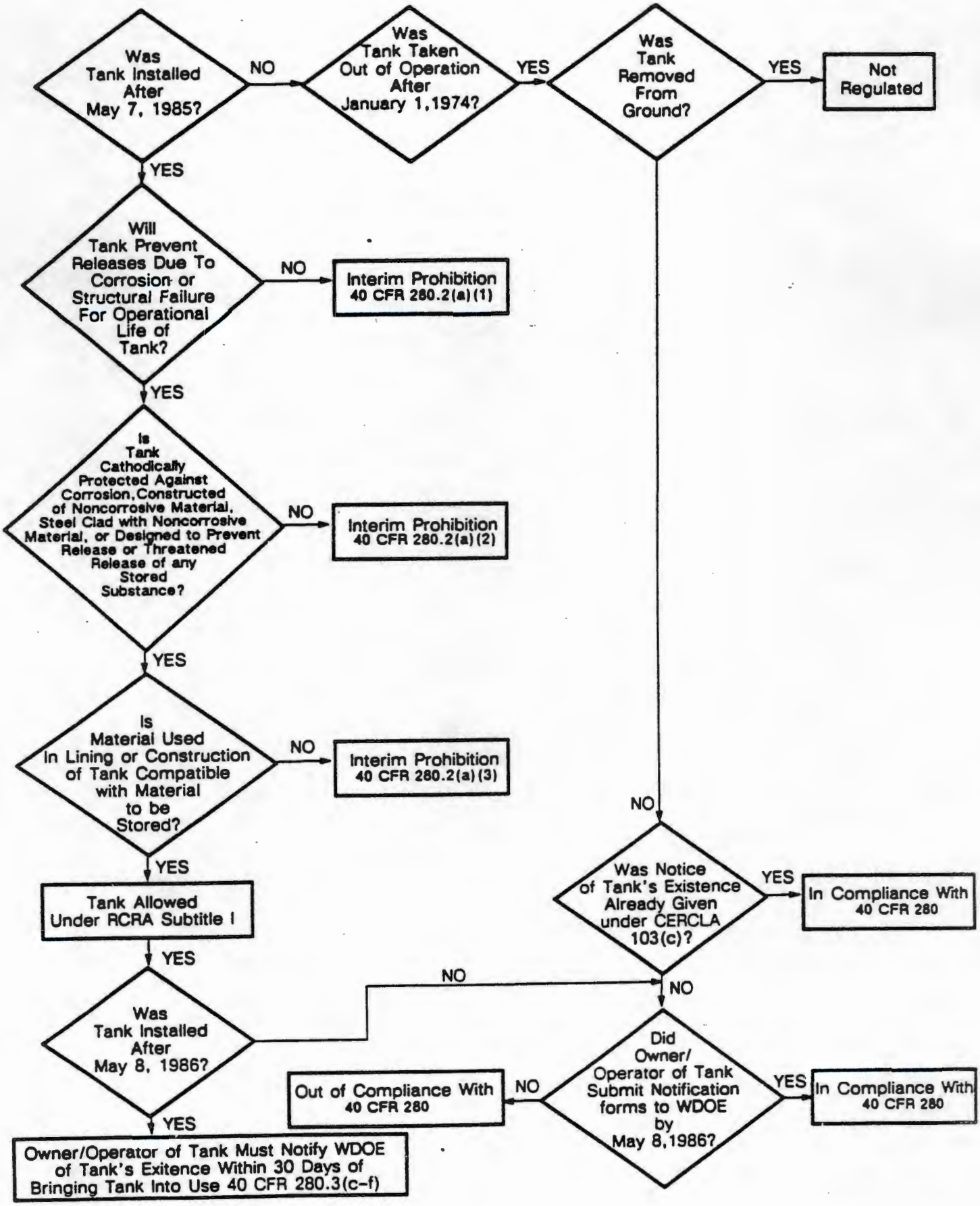
3.11.2.1 Subflowsheet



3.11.2.2 Subflowsheet



3.12
RCRA/UST Subflowsheet



4.0 Background Information

4.0 BACKGROUND INFORMATION

4.1 STATUTES

Regulatory programs and the legislative mandates they serve have evolved alongside society's understanding of man's interaction with his environment. As a consequence, a diverse set of regulatory controls forms the legal framework with which Hanford operations must comply. By virtue of the manner in which programs have been established, the division of authority to regulate activities at federal facilities, and the complex nature of environmental actions, there is considerable overlap in authority among the present regulatory controls. It is necessary to identify all potentially applicable regulatory programs and to evaluate their purview to clearly establish the regulatory framework for environmental management at Hanford.

The Clean Air Act (CAA)

The Clean Air Act (42 U.S.C. Section 7401 et seq.), establishes the legislative framework for controlling emissions to air. Regulations promulgated under CAA were mandated first by the Air Quality Act of 1967, and subsequently by the Clean Air Act Amendments of 1970 and 1977. (Clean Air Act Amendments are currently being considered in Congress.) The complex regulatory scheme embodied in CAA is codified at 40 CFR Parts 50-99.

In essence, CAA embraces a program to attain and maintain healthful air quality by regulating emissions from stationary and mobile sources. The program is structured around four key elements: 1) national ambient air quality standards (NAAQS), 2) emission standards, 3) prevention of significant deterioration (PSD), and 4) the nonattainment program.

With the NAAQS, EPA determines maximum pollutant concentration levels in the ambient atmosphere which will protect human health (primary NAAQS) and welfare (secondary NAAQS). States are encouraged to work toward achieving the NAAQS by adopting state implementation plans (SIPs) that specify emission limitations for individual

industrial categories. SIPs are administered by one of 247 Air Quality Control Regions (AQCR) in the U.S. EPA retained the responsibility for approving SIPs for each state and each pollutant. States failing to obtain approval must subsequently accept an EPA-devised plan.

Emission standards promulgated by EPA (over and above SIPs devised for states without an approved plan) fall into two categories: 1) New Source Performance Standards (NSPS), and 2) National Emission Standards for Hazardous Air Pollutants (NESHAP). The former standards are a uniform set of limitations designed to prevent states from attracting new industry by lowering emission requirements. NSPS are applicable to new facilities built after the effective date of the regulation. They acknowledge economic constraints within categories of industrial sources by considering emission levels based on best available control technology (BACT).

NESHAPS are emission standards applied to specific pollutants listed by EPA as hazardous when discharged to the atmosphere. The limitation can be applied to both existing and new emission sources and is based on "an ample safety margin to protect the public health." States may be delegated responsibility for both NSPS and NESHAPS, but they are also directly enforceable by EPA.

The PSD program was developed to preserve air quality in regions where conditions already exceed NAAQS. When a region is designated as a PSD area, permits are required before any major new source or source modification can be constructed. PSD areas are categorized into three classes with each having unique incremental levels of pollutant concentrations allowed from new or modified sources. EPA policy in permitting new sources has allowed emissions trading or bubble concepts where individual source emissions can be increased if total emissions within a well defined bubble are held constant or reduced.

Nonattainment areas are those AQCRs which have failed to meet NAAQS. In these areas special permits must be obtained before new sources of emissions or modifications to existing sources can be constructed. Bans on construction are possible, but EPA allows new sources if there is an offset (reduction in other sources) or the AQCR is making progress toward attainment.

The State of Washington is authorized to implement and enforce the CAA program. Washington exercises that authority as well as its own program under the Washington Clean Air Act as amended. Washington's program adopts the federal program in general, but includes several elements that are more restrictive:

- an additional one-hour SO_2 standard is established along with the federal ambient air quality standards;
- an ambient air quality standard for fluorides;
- all facilities must implement BACT regardless of size, whereas the federal program is not so all-encompassing;
- Washington has promulgated Best Available Radionuclide Control Technology (BARCT) for which there is no comparable federal requirement; and
- Washington's Department of Social and Health Services (DSHS) has developed air emission standards for radionuclides based on the State Clean Air Act, but has not received authority to implement the federal NESHAPS; therefore, permits are required from both the State and EPA.

State-authorized portions of the Clean Air Act Program are implemented at Hanford by the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, the "Superfund" Act, (42 U.S.C. Section 9601 et seq.) and subsequent amendments contained in the Superfund Amendments and Reauthorization Act of 1986 (PL 99-499) (SARA), address the identification and remediation of contamination resulting from spills or uncontrolled waste sites. Neither piece of legislation is a primary regulatory mechanism. They create the necessary funds and enforcement authorities to support the restoration of sites contaminated with hazardous chemicals. Pursuant to these objectives, EPA has developed a program for notification, assessment, and remediation. The essence of the process is detailed in the National Contingency Plan (NCP) (40 CFR 300).

Notification requirements fall into two areas. Initially, industry and public organizations were required to provide a listing of all known spill sites or uncontrolled hazardous waste sites. The composite listing was to create a candidacy of sites from all past activities that could pose a threat to public health or welfare because of the presence of hazardous chemicals. This first notification was a one-time event. The second type of notification is an on-going process by which new sites are identified when hazardous chemicals in excess of reportable quantities are released in an unpermitted discharge, or when evidence of an unreported site is encountered. For the purposes of reporting, hazardous substances are defined by list by EPA at 40 CFR 302.

Once a site has been identified, a series of activities aimed at assessment and, if necessary, remediation are prescribed in the NCP. Specific steps include the development of a preliminary assessment through site investigations (SI) and data collection to support scoring the site using the Hazard Ranking System (HRS). Site scores are used to determine the efficacy of nominating and listing a site on the National Priority List (NPL).

If a site is put on the NPL, a formal process of remedial investigation (RI) and feasibility study (FS) is required. The RI determines the extent and nature of contamination. A risk or endangerment assessment accompanies the RI to quantify the significance of that contamination. The FS identifies and screens alternative solutions to the problem, including the no-action scenario. When an optimum alternative is identified, it is documented in a Record of Decision (ROD) and implementation of remediation is initiated. The entire process includes requirements for a program of community relations.

EPA and Washington State can lead cleanup actions under the State Superfund Act, and the State is authorized to participate jointly with EPA in cleanups conducted under CERCLA. The State Superfund Act was passed and became effective on October 16, 1987.

In addition, SARA Title III added a provision by which a facility must notify the State emergency response commission if a substance is present within the facility in excess of the Threshold Planning

Quantity (TPQ), which is established by EPA. A listing of EPA designated extremely hazardous wastes and their TPQs is found at 40 CFR 355, Appendices A and B.

The Clean Water Act (CWA)

The Clean Water Act (33 U.S.C. Section 1251 et seq.) (CWA) refers to the legislative program initiated with the Federal Water Pollution Control Act of 1972 and subsequent amendments of the CWA of 1977. The regulations promulgated under CWA protect the quality of surface waters receiving liquid effluents from generators. The regulatory program is based on three key elements: water quality standards, federal effluent limitations, and a permit system for discharges.

Water quality standards are devised for each water use for different water bodies on the basis of federal criteria for pollutants. The standards are set by the state and are subject to EPA review. States must develop area-wide plans to control point and nonpoint sources to maintain these standards and prevent downgrading water uses. If states fail to develop acceptable programs, the EPA will implement and enforce one of its own. Where strict effluent limitations will not attain standards for toxic pollutants, individual strategies must be developed. The standards address toxic pollutants, conventional pollutants, and nonconventional or "gray" pollutants.

Federal effluent limitations serve as a major mechanism by which point sources are controlled to further standards attainment. Limitations are technology-based and are focused on industrial categories. EPA establishes limitations with different levels of control specified for existing versus new sources and toxic versus gray versus conventional pollutants. Special effluent limitations can be promulgated for effluents discharged to publicly-owned treatment works (POTW), for specific toxics, and for specific water bodies. POTWs may enforce even stricter limitations.

The permit system, the National Pollutant Discharge Elimination System (NPDES), ensures compliance with effluent limitations by requiring a permit for all point discharges to navigable waters. In general, permits prescribe effluent limitations or stricter levels for

pollutant concentrations in discharges. Public involvement in the permit process is dictated through hearings and comment periods.

CWA establishes regulations to prohibit and require notification for discharges of harmful quantities of oil and hazardous substances. This provision of the law is parallel to spill provisions in CERCLA. CWA is also the source of authority for the dredge and fill permit program.

Washington has received authority to implement and enforce the provisions of the CWA through programs developed under the Water Pollution Control Act and Amendments, the Pollution Disclosure Act, and the Water Resources Act. In general, the State program adopts the federal program without significant differences. The one major difference between the federal and State programs is that Washington includes groundwaters to be protected through administration of its discharge permit systems. Releases to the soil column where the discharges may ultimately reach the aquifer require permits under the State Waste Discharge Permit Program (the applicability of Washington's regulations for liquid discharges to the soil is uncertain because of questions about State jurisdiction over groundwaters beneath the Hanford Reservation). For discharges to surface waters, EPA administers the NPDES program for federal facilities. Washington has proposed certain more restrictive water quality standards and measurement techniques, but these have not been promulgated. No separate ambient water quality standards have been established for groundwaters.

The Endangered Species Act (ESA)

The ESA provides protection to threatened and endangered species from impacts caused by federally-funded activities. The ESA requires federal agencies, in consultation with the Secretaries of the Interior and Commerce, to insure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. Regulations codified at 50 CFR 402 outline the agency consultation procedures.

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

FIFRA (7 U.S.C 136 et seq.), authorizes a program to regulate the production, use, and disposal of pesticides. As the title of the Act implies, pesticides are broadly defined as chemical substances that prevent, destroy, repel or mitigate pests including insects, rodents, nematodes, fungus, weeds, or micro-organisms not on or in man or living organisms. The exclusion for certain micro-organisms is intended to stop short of human and animal pharmaceuticals that are separately regulated. Key elements of the program are a registration program to control production and distribution of pesticides, and a certification program for transport and disposal of pesticides.

The registration program can be viewed as analogous to that employed under the Toxic Substances Control Act (TSCA). Manufacturers of new pesticides or proposed new applications for registered pesticides must submit data on the substances, their proposed use, and demonstrated benefits. EPA evaluates the data to determine potential effects and their relation to potential benefits. Registration may be granted with any of a number of restrictions on quantities, strengths, and uses to control pests. Restricted pesticides may be classed for general use, restricted use, or both.

The application certification program is designed to assure that only certified applicators apply restricted use pesticides. Certification programs are administered by the states unless the state plan has not been approved by EPA. In the latter case, EPA administers the program. Certification is based on testing and compliance with prescribed standards related to recertifications, continuing education, and use of registered, licensed equipment.

FIFRA contains provisions regulating transport and disposal of pesticides. Transport is covered through referral to Department of Transportation regulations. Disposal is controlled through prescription of acceptable disposal methods for residuals and containers. FIFRA also contains regulations controlling the storage of pesticides.

The State of Washington is authorized to administer the FIFRA program and has specific enabling language in the Pesticide Control Act

and the Pesticide Application Act. The Washington program is based on the federal requirements, but imposes stricter standards for certification. Requirements for disposal of pesticides do not significantly differ from the federal program.

Hazardous Materials Transportation Act (HMTA)

The HMTA, 49 U.S.C. Appendix 1808, provides the focus for regulating hazardous materials packaging and transportation. The program draws on related legislation, such as the Dangerous Cargo Act of 1940, The Federal Aviation Act of 1958, The Tank Vessel Act of 1936, the Ports and Tanker Safety Act of 1978, and the Federal Railroad Safety Act of 1970. HMTA creates a regulatory program that addresses how hazardous materials must be packaged, labeled, and transported, and establishes specifications for transport operator personnel and their training. HMTA requirements are germane both to new chemicals and hazardous wastes.

Packaging, labeling, and transport requirements are detailed for each hazardous material in the Code of Federal Regulations. Specifications include container size, material, and dimensions, as well as label size and wording. It is unclear if Hanford operations will have major requirements under HMTA, since off-site transport is likely to be performed by third-party contractors. However, the operating contractor would still be responsible for selecting and labeling containers for shipment.

The major elements of HMTA are implemented by the Federal Department of Transportation. The State of Washington has imposed similar requirements on in-State transportation and has the option of stricter licensing, registration, and permit requirements. The State has not exercised that option to date; therefore, the Federal HMTA prevails in Washington.

The National Historic Preservation Act (NHPA)

The NHPA is federal legislation designed to prevent the destruction of historic structures or sites. It sets forth a national

policy of historic preservation. Its requirements are intended to ensure, among other things, that federal agencies consider properties (which may be archaeological, historical, or cultural sites and resources) on or eligible for the National Register of Historic Places in their planning, and that they provide the Advisory Council on Historic Preservation with the opportunity to comment. Compliance with NHPA is required, regardless of whether an action falls under NEPA. The implementing regulations are codified at 36 CFR 800, and do not necessarily require mitigation.

The Hanford Site Archaeologist should be contacted to survey any area to be disturbed so that a determination may be made as to whether the area contains sites on or eligible for the National Register.

Hydraulic Projects Act (WHPA)

The WHPA was intended to control activities that might damage fish through disturbance of stream banks and/or waters. The regulation requires applicants to secure a hydraulic project approval prior to conducting any activity that will use, divert, obstruct, or change the natural flow or bed of any salt or fresh waters of the State. The Department of Fisheries or Department of Game administers the program and determines when approval should be granted. Some regulated activities are exempted because they have been determined in advance to be of minimal impact. Other activities are directly addressed in the regulations with specified requirements. Affected activities potentially undertaken at Hanford include bank protection, pier and piling construction, conduit crossing, dredging, outfall construction, and water diversion. Since a State permit-like approval is required, WHPA activities can trigger the State Environmental Policy Act (SEPA) process.

The Marine Protection, Research, and Sanctuaries Act (MPRSA)

The MPRSA of 1972 (33 U.S.C. Sections 1401-1444) addresses activities related to dumping of wastes in the ocean. The regulatory program is based on a system of permits for such activities. The law

also authorizes the designation of National Marine Sanctuaries which will be afforded a greater level of protection through coordinated efforts of all relevant regulatory programs. MPRSA is implemented and enforced by the federal government and specifically prohibits states from adopting or enforcing related rules. The lack of use of the ocean dumping alternative by Hanford renders consideration of MPRSA moot at this time.

National Environmental Policy Act (NEPA)

NEPA (42 U.S.C Section 432 et seq.), establishes the main policy for protection of environmental quality and provides the means for carrying out that policy. Goals devised within the overall policy include the assurance of providing "safe, healthful, productive, and aesthetically and culturally pleasing surroundings" for all Americans. The major means within NEPA to achieve established goals is the requirement for assessment of environmental impacts through development of an Environmental Impact Statement (EIS).

An EIS is required for any major federal or federally-funded project which may have significant impacts on environmental quality. If the need for an EIS is not clear-cut, an environmental assessment (EA) must be prepared with a definitive conclusion either calling for an EIS or making a finding of no significant impact (FONSI). In the latter case, no EIS is required. Regulations governing federal implementation of NEPA and guidelines for preparing an EIS are issued and enforced by the Council on Environmental Quality (CEQ). EPA has the authority to review EISs and may challenge conclusions which then are referred to the CEQ for resolution.

Washington has enacted its own State Environmental Policy Act (SEPA) requiring development of an EIS for projects which have significant environmental impact. In general, the Act extends these requirements beyond those projects utilizing federal funds as directed in NEPA. By applying the SEPA process for any action requiring a State permit, facilities already obligated to conduct an EIS under NEPA many have that submittal accepted under SEPA as well, but the acceptance is not guaranteed and is left to the State lead agency. Hence, in areas

where State permits are sought, Hanford could be obligated to action under both NEPA and SEPA. Candidate projects include those involving shoreline management act permits, hydraulic protection permits, or on-site sewage disposal permits. The process for SEPA is similar to that for NEPA, but formats and requirements are specified by the lead agency. A checklist has been developed to assist the applicant.

The Noise Control Act (NCA)

The NCA (42 U.S.C. Section 4901 et seq.), as amended by the Quiet Communities Act of 1978, establishes a program to control noise levels in products and activities. The main thrust of this regulatory program establishes standards for noise levels for commercial products. In related sections authority is given to control noise from railroads in interstate traffic, interstate motor carriers, and aircraft. Section 4903 requires federal facilities to comply with federal, state, interstate, and local requirements respecting noise control and abatement.

The State of Washington, through the Noise Control Act of 1974 and subsequent amendments, has extended the regulation of noise from products to noise levels reaching beyond the owner/operators boundaries. Regulations under the Noise Act program define land use zones and specify maximum noise levels for those zones. Hanford would be designated a Class C property, as would the land on the Hanford boundaries. Noise levels are not to exceed 70 dBA at those boundaries. These limitations do not apply to sounds resulting from construction and repair, firearm use, or blasting during normal daylight hours as well as vehicles, airplanes, railroad trains, and warning devices. Also exempted are noises from industrial installations operating before 1972 which consistently operated in excess of 15 hours a day. Due to lack of funding, the State has not enforced the noise control program since 1983, but it has empowered cities and counties to enforce it in its stead.

On-Site Sewage Disposal Act (OSDA)

This State of Washington Act empowers the Department of Ecology to establish a permit system for septic tanks and related soil treatment systems for domestic sewage from residences and commercial facilities. Permits are limited to septic tank sewage systems which have a design capacity of less than 3500 gallons per day (gpd). Owners of larger on-site sewage systems with design capacities of greater than 3500 gpd and less than 14,500 gpd are required to submit plans and specifications for new construction, repairs, or expansions to the local health department for approval. On-site sewage systems with design capacities of greater than 14,500 gpd are subject to the regulations set forth at WAC 173-216 (State Waste Discharge Permit) and WAC 173-240 (Design Standards for Wastewater Facilities).

Pipeline Safety Acts (PSA)

Pipeline safety is regulated under the Natural Gas Pipeline Safety Act (NGPSA) as amended and the Hazardous Liquid Pipeline Safety Act (HLPSA). In order to promote consistent safety programs throughout the country, coverage has been extended to intra-, as well as interstate pipelines. The program is a regulatory one under which standards are promulgated for the design, installation, construction, inspection, emergency planning, testing, operation, replacement, and maintenance of pipelines carrying natural gas, petroleum or designated hazardous liquids, such as chlorine and ammonia. Washington is authorized to inspect intrastate gas pipelines under this program. At this time there appear to be no applicable pipelines at the Hanford site.

The Resource Conservation and Recovery Act (RCRA)

RCRA (42 U.S.C. Section 6901 et seq.) encompasses the legislative program first prescribed in the 1976 act and subsequently amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). With the exception of the underground storage tank provisions, the RCRA program regulates the management of solid wastes. While RCRA is often treated

as though it exclusively addresses hazardous wastes, its purview actually extends to all solid wastes and includes provisions related to discharges to soil, groundwater and the air.

RCRA has been touted as the first piece of legislation to close the gap on waste discharges by addressing placement in soil and groundwater similar to the CWA provisions for discharges to surface water and CAA provisions for discharges to air. Unlike CWA and CAA, RCRA does not revolve around a set of ambient standards for the receiving media. Rather, it creates regulatory requirements for generators, transporters and owners/operators of solid waste treatment, storage, and disposal sites keyed to necessary permits.

RCRA focuses on the management of solid wastes, but employs a definition which encompasses solids, sludges, slurries, liquids, and containerized gases. Within that very broad spectrum, RCRA distinguishes between hazardous and nonhazardous solid wastes. Requirements for management of the two types are significantly different, and must be discussed separately.

A solid waste is hazardous if it is not excluded by definition at 40 CFR 260 and meets one of the following criteria:

- is listed as a hazardous waste (40 CFR 261);
- is a waste mixture containing one or more listed hazardous wastes; or
- exhibits one or more of the four characteristics of hazardous wastes: ignitibility, corrosivity, reactivity, or extraction procedure (EP) toxicity.

Authority for regulating hazardous wastes is delegated to EPA under Subtitle C of RCRA.

Generators of solid wastes are required to determine if their waste is hazardous and, if so, to notify the enforcement agency (state or EPA) to obtain an identification number. Regulations require proper packaging and labeling of wastes, manifesting of all off-site shipments, and delivery of wastes only to authorized transporters or management facilities. Permits are required if wastes whose quantity exceeds the regulatory limits are stored for more than 90 days.

Owners/operators of hazardous waste treatment, storage, or disposal facilities must apply for interim status for existing units or

permits for new units. Permits for new units at facilities with contaminant releases from inactive units are contingent upon corrective action for the latter. Permits require adherence to extensive standards for design and operation of the facilities. Specific areas addressed include waste analysis, security, inspection, training, siting, emergency preparedness, monitoring, financial assurance, and closure. RCRA also contains provisions for regulations restricting specified wastes from being disposed in landfills and underground injection control wells.

Solid waste programs in Washington arise from the Washington Solid Waste Management Law and the Washington Hazardous Waste Disposal Act. With respect to nonhazardous solid wastes, federal location and design criteria have yet to be promulgated. Consequently, the State program stands alone in this area. Comparison with other states indicates the Washington criteria are comparable or more restrictive than most states with respect to allowable distances to surface water, groundwater, residential zones, and other potentially impacted features.

While RCRA Subtitle D allows EPA to devise a similar program for nonhazardous wastes, the approach to date has been one of minimum standards for sanitary landfills with broad leeway for states to develop more stringent requirements. Currently, EPA is working on a more restrictive regulatory program that will significantly tighten location and design requirements of sanitary landfills significantly. A special class of wastes (euphemistically referred to as D+) is also being defined as large volume wastes which fail the extraction test for classification as hazardous but not a distilled water extraction indicating that they do not pose a significant risk when monofilled (for example, flyash).

The State of Washington is authorized to implement baseline solid waste management programs encompassed by RCRA. Effective November 23, 1987, the State was authorized to regulate the hazardous constituents of radioactive mixed wastes. Washington's hazardous waste program differs considerably from the federal program by virtue of its more encompassing definition of hazardous wastes. Washington uses a unique formulation to define dangerous and extremely hazardous wastes considering both intrinsic toxicity and volume of waste. Wastes may

also be categorized as dangerous on the basis of total halogenated or polycyclic aromatic content. Most Washington regulatory requirements follow the federal program with several key exceptions:

- storage tanks can not be closed as a landfill unit;
- underground storage of hazardous wastes is prohibited;
- new storage facilities have special secondary containment requirements; and
- land disposal of extremely hazardous wastes (EHW) is prohibited. (Thus, Washington does have its own version of a landfill ban even though they are not authorized to implement the federal ban program under HSWA.)

RCRA Subtitle I, as established by HSWA and amended by SARA, requires EPA to develop a regulatory and release response program for underground storage tanks (UST). For purposes of this program, UST is defined as any tank and associated piping with greater than 10% of its volume underground that is used to contain a regulated substance. A regulated substance is defined as (1) petroleum and (2) any CERCLA hazardous substance that is not regulated as a RCRA hazardous waste. Thus, most regulated substances are not wastes and mixed radioactive and RCRA hazardous wastes are not regulated substances. (Most of the proposed UST regulations would not apply to UST systems containing radioactive wastes or used oil. See 52 Federal Register 12662, 126770, April 17, 1987, proposed to be codified at 40 CFR 280.10[b].) Unlike most other environmental programs, owners or operators of USTs are not required to obtain a permit.

The current UST program includes a ban on the installation of certain types of tanks and requirements that owners of existing or newly-installed tanks notify the State or a local agency of the tank's age, size, type, location, and use. As required by RCRA Subtitle I, EPA is currently developing a comprehensive regulatory program for USTs that will include requirements concerning:

- New tank design, construction, installation, and notification;
- Release detection;
- Release reporting and investigation;
- Corrective action;

- Closure; and
- Financial responsibility.

EPA published proposed rules in these areas on April 17, 1987 (see above), and plans to finalize the rules in Spring, 1988. In addition, the EPA has a $500 million Leaking UST Trust Fund to finance cleanup of the releases from USTs containing petroleum.

The regulatory program will be implemented by EPA until states receive EPA approval to implement their own program in lieu of the federal program.

The Safe Drinking Water Act (SDWA)

The SDWA (42 U.S.C. Section 300f et seq.) addresses issues related to groundwater protection and assuring the quality of water supplied to the public. Both parts of the program are regulatory in nature with the former addressing waste management practices through control of underground injection control wells. All federal facilities are required to comply with both portions of SDWA unless specifically exempted by the EPA.

The waste-related portion of SDWA is specific to underground injection control (UIC). It establishes control through classification of injection control wells and a permit system keyed to location and waste type considerations. Well classification distinguishes wells used for petroleum extraction wastes, mineral recovery, and waste disposal as well as those injected above and below usable aquifers. Permits are issued by authorized states and place requirements on design and operating parameters. While the regulatory language appears to restrict UIC to the injection of liquids in wells, recent court decisions have broadened the scope to include radioactive solids placed in any excavation or boring whose depth exceeds its largest horizontal dimension.

The sole source aquifer demonstration program establishes procedures for developing, implementing, and assessing demonstration programs designed to protect critical aquifer protection areas located within areas designated as sole or principal source aquifers. Under this program, any state, municipal, or local government or political

subdivision that identifies a critical aquifer protection area over which it has authority or jurisdiction may apply to the EPA Administrator to select such an area for a demonstration program.

In addition to the sole source aquifer program, the SDWA established authority for state programs to establish wellhead protection areas. A wellhead protection area is the surface and subsurface area that surrounds a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield. By June 19, 1989, states must adopt and submit a state program to the EPA Administrator to protect wellhead areas within their jurisdiction from contaminants that may adversely affect human health.

The water supply portion of SDWA seeks to protect the public by establishing health- (primary) and aesthetic- (secondary) based standards for toxic constituents at the tap from public supplies. Primary drinking water standards consist of two values for each contaminant: a nonenforceable recommended maximum contaminant level (RMCL), which is based on health considerations only, and an enforceable maximum contaminant level, which is set as closely as possible to the RMCL and takes into account feasibility and cost, as well as health protection. Secondary standards are not mandatory, but exceeding provided standards can obligate the purveyor to notify users.

Washington State is authorized to administer the UIC program for all five classes of injection wells. The State's program was promulgated under the State Water Pollution Control Act and differs from the federal program in that it prohibits all class IV wells regardless of proximity to an underground source of drinking water (USDW). New class V wells are prohibited in or above an underground source of drinking water. Existing class V wells that inject into or above an USDW must have applied to the State for approval to continue within a year of promulgation. Owners of all other class V wells must notify the State in that same time frame.

Toxic Substances Control Act (TSCA)

TSCA (15 U.S.C. Section 2601 et seq.) was enacted to provide for cradle to grave protection from chemicals produced, used or imported into the U. S. The foundation of the program is a system of testing and review to determine the potential effects from proposed uses of chemicals. When those effects are deemed unacceptable, restrictions can be placed on production, use, and disposal methods.

Production and use restrictions largely affect producers and importers. Disposal restrictions can affect anyone in the product cycle including the user. To date, TSCA has been used to regulate disposal of wastes containing either of two specific toxic substances: asbestos and polychlorinated biphenyls (PCBs).

PCB disposal regulations address storage prior to disposal, incineration, treatment, landfill or EPA approved alternate disposal methods. Regulations also impose recordkeeping and reporting requirements. TSCA also prescribes procedures for PCB spill cleanup. Procedures for handling and disposing of asbestos are addressed by TSCA, but disposal is largely deferred to RCRA.

The State of Washington does not administer an independent TSCA program. All requirements would, therefore, be those promulgated under the EPA program. Management of wastes containing PCBs and/or asbestos are promulgated under the State's solid waste program.

4.2 DOE Orders

The Department of Energy (DOE) is organized as a self-regulatory entity but is charged to meet the letter and spirit of all federal and state regulations that do not conflict with the Atomic Energy Act of 1954 (AEA). Authority to self-regulate flows from the AEA through predecessor agencies to DOE. The mechanism by which internal contracts are formulated and communicated is a system of DOE Orders. Orders may be issued by DOE Headquarters or local DOE operations offices. In the latter case, requirements should be consistent within the framework set by the Headquarters Orders. The following sections summarize current DOE Orders relevant to environmental considerations on the Hanford Site.

DOE N 5400.1 Environmental Policy Statement

This Headquarters Order communicates the basic environmental policy position of the Department, namely that DOE must conduct operations "in compliance with the letter and spirit of applicable environmental statutes, regulations, and standards." To that end, programs will be implemented to protect human health and welfare and these programs will be applied consistently across all facilities and operations.

RL 5440.1A Implementation of the National Environmental Policy Act at the Richland Operations Office

This Richland Operations (RL) Order supplements headquarters Order 5440.1C with respect to implementation of the National Environmental Policy Act (NEPA). The supplement commits Hanford to meeting the letter and intent of NEPA. It identifies roles and responsibilities and outlines the basic policy. The Order refers exclusively to NEPA with no mention of the State Environmental Policy Act (SEPA). By omitting reference to SEPA, the Order provides no mandate to meet unique State requirements such as the checklist which would necessitate

obtaining a shoreline permit for any project on the river bank costing in excess of $1,000.

The RL Order adds three requirements to those contained in NEPA procedures:

1) review of environmental impacts in wetlands and 100-year or 500-year flood-plains with a specific discussion of measures to mitigate environmental impacts;
2) calculation of radioactive doses to the public from proposed actions; and
3) identification of all historic properties potentially affected. At a minimum, archeological reconnaissance will be required whenever excavation or ground disturbance is proposed.

DOE 5440.1C National Environmental Policy Act

This Headquarters Order establishes a basic policy to comply with the letter and spirit of NEPA. It outlines responsibilities within the DOE for meeting NEPA process requirements.

RL 5480.4 Environmental Protection, Safety, and Health Protection Standards for RL

This Richland Operations Order prescribes responsibilities for seeking exemptions from mandatory environmental protection, safety, and health protection standards. Relevant environmental areas listed include "Oil Pollution Regulation" (33 CFR 151), "EPA Certification of Usefulness of Pesticide Chemicals" (40 CFR 163), and "EPA Registration of Pesticide-Producing Establishments, Submission of Pesticide Reports and Labeling" (40 CFR 167).

DOE 5480.3 Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes

This Headquarters Order establishes requirements for packaging and transporting hazardous materials, hazardous substances, and hazardous wastes. The basic requirement calls for all shipments delivered to

carriers to meet relevant DOT and NRC regulations. Special provisions are included for packaging plutonium and radioactive materials in amounts greater than Type A quantities. If shipments do not meet DOT requirements or qualify for a National Security Exemption, a DOT exemption must be obtained. The Order contains package standards, quality assurance procedures, operating procedures, and specifications for normal conditions of transport and hypothetical accident conditions. Package standards include materials augmenting requirements provided in 10 CFR 71 and 49 CFR 173 with respect to radiological contents. Quality assurance procedures are based on those delineated in 10 CFR 71.

DOE 5480.14 Comprehensive Environmental Response, Compensation, and Liability Act Program

This Headquarters Order provides instructions for implementing a DOE CERCLA program. It addresses all CERCLA-type activities with the exception of removal actions or actions taken under the Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Remedial Action Project (UMTRAP), Grand Junction Remedial Action Project (GJRAP), or the Surplus Facility Management Program (SFMP). The latter four are subject to requirements in their respective charters and plans. The Order requires conduct of five phases of work at candidate sites. These phases do not match the current National Contingency Plan (NCP) procedures and do not reflect the recent SARA legislation. As a consequence, this Order is currently being rewritten. Based on language in SARA, the new requirements are very likely to parallel the NCP more closely.

DOE 5482.1B Environment, Safety, and Health Appraisal Program

This Headquarters Order provides guidance and assigns responsibilities for conducting appraisals with respect to safety, health, and environmental programs. The Order mandates conduct of site surveys and audits to clearly establish the nature of environmental problems at DOE facilities and the status of compliance programs.

RL 5482.1B Environment, Safety, Health, and Quality Assurance Appraisal and Surveillance Program

This Richland Operations Order supplements its headquarters precursor by assigning responsibility to functions below the operations manager. Inspections and appraisals are the primary responsibility of the RL Environment, Safety, Health, and Quality Assurance Division (ES&H). Contractor responsibilities consist of production of quarterly progress reports on all corrective actions arising from results of audits, appraisals, or surveillance.

DOE 5820.2 Radioactive Waste Management

This Headquarters Order establishes policy and procedures for managing radioactive wastes, waste by-products, and radioactively contaminated surplus facilities. Implementation plans are required for management of high-level (HLW), transuranic (TRU), and low-level (LLW) wastes. The HLW plan requires interim storage of waste in tanks (doubly contained for all new wastes) with monitoring and leak detection systems, and adequate space capacity for transfer in the case of emergencies. All operations other than disposal must comply with relevant EPA standards and, when practical, NRC regulations. The Order encourages the development and implementation of waste by-products and mandates programs to reduce the volume and mobility of stored wastes. To be shipped off-site, HLW shall be placed in approved containers to meet DOT and NRC regulations and disposal site acceptance criteria. Disposal of new and readily retrievable wastes is to be in a geologic repository meeting the requirements of the Nuclear Waste Policy Act (NWPA). Other wastes are to be stabilized in place if possible and meet applicable EPA standards. Waste disposed prior to 1984 shall be monitored in situ. All waste management activity should provide adequate protection of the public and environment.

Wastes suspected of containing transuranic radionuclides will be characterized and categorized as recoverable scrap, TRU waste, LLW, or waste below threshold quantities. Materials designated as TRU wastes must be disposed in Carlsbad, New Mexico if possible. If TRU waste

cannot be certified for acceptance at WIPP, alternate disposal will be evaluated. Criteria are established as thresholds for TRU designation. If practical, uncertified wastes are to be treated if practical to meet acceptance criteria. Small amounts of TRU wastes that are impractical to certify may be approved for storage and shipment on a case-by-case basis. Programs are required to reduce or eliminate generation of TRU wastes that cannot be certified in a practical manner.

Certified wastes are to be shipped to disposal as soon as practical. If stored, storage is to be in a manner that will not affect certification. Uncertified waste must be stored or disposed with greater confinement. If left in place, TRU wastes in burial sites or soils shall be monitored in situ. TRU waste generation is to be minimized and shipping and disposal containers must meet transportation and disposal site acceptance criteria. Information on TRU waste storage and disposal quantities, locations, and characteristics must be entered in the Integrated Data Base program managed by DRNL.

LLW is to be disposed in shallow land burial sites or greater confinement. Liquid discharged to soil is to be solidified prior to disposal or immobilization in-place unless otherwise approved by the head of DOE field organizations. Field organizations are charged with developing criteria for waste form acceptance, disposal site selection, disposal site design, disposal site operation, and disposal site closure/post closure plans.

With the approval of the appropriate DOE field organization, waste contaminated with naturally occurring radionuclides can be disposed in existing DOE LLW disposal sites or new sites designed to meet the required LLW disposal site criteria. With approval of NE-1 and other involved federal agencies, States, and Indian tribes, these wastes may also be disposed at tailings disposal sites established under the Uranium Mill Tailings Radiation Control Act. DOE by-product material that cannot be disposed at existing DOE sites must be disposed according to the intent of EPA standard 40 CFR 192 Subpart A. Data on waste location, quantities, and characteristics must be provided to the Integrated Data Base program.

DOE 5484.1 Environmental Protection, Safety, and Health Protection Information Reporting Requirements

This Headquarters Order establishes the Environmental Protection Safety, and Health Protection Information Reporting Requirements. Individual chapters address specific requirements on: 1) notification of occurrences; 2) investigation requirements; 3) effluent and environmental monitoring program requirements; 4) environmental protection, safety, and health protection reports; and 5) criteria for determining DOE property valuation and DOE losses. Of these, the third chapter has direct bearing on environmental programs.

Monitoring program requirements include a baseline survey one to two years prior to startup of new sites, processes, or facilities to establish current and background levels of contaminants. All sites must maintain radiation monitoring program to monitor releases from and impacts of operations. Nonradioactive contaminant monitoring is also required if effluent monitoring data cannot assure compliance with federal, State, and local environmental quality standards. Effluent monitoring is also required. Reports of monitoring data are mandated and format and content specified.

DOE 5480.4 Environmental Protection, Safety, and Health Protection Standards

This Headquarters Order lists all federal standards which are mandatory or reference for DOE facilities.

DOE 5480.1B Environment, Safety, and Health Program for Department of Energy Operations

This Headquarters Order establishes the DOE Environment, Safety, and Health Program. Relevant chapters include IX wherein the contracting officer is charged with taking appropriate measures to minimize the possibility of adverse environmental impacts resulting from construction activities. Chapter XI establishes radiation protection requirements including ALARA standards for the public in

uncontrolled areas. Specific elements require effluent monitoring to demonstrate public protection, concentration standards for effluents, and special limitations on effluents to sanitary sewage systems.

RL 4330.2 Water Treatment Plants and Distribution Systems

This Richland Operations Order addresses management of the Hanford potable water supplies. Operations are required to meet federal and State requirements including safe drinking water standards. Testing capabilities are required at each water treatment plant and sampling must be conducted at periodic intervals. Operators must have water plant operator training or work under the direct supervision of one who has this training. Wastes from the settling basins must be managed in accordance with DOE, federal, and State regulations.

DOE 6430.1 General Design Criteria

This Headquarters Order addresses general design criteria for new facilities including those containing water and air pollution control systems. DOE sites are required to comply with all federal water and air pollution control standards as promulgated under the Clean Water Act, Safe Drinking Water Act, the Clean Air Act, and the Resource Conservation Recovery Act, as well as other applicable DOE Orders. During design activities, planners must consider alternate production flow methods to minimize water use and waste volumes, materials recycled, and resource recovery, "best available" technology, and solids management for treatment residuals.

Consideration should be given to use of municipal sewerage systems, waste segregation, and land application of sludges. Treatment units should be located to reduce aesthetic impacts. Specifications are also given for design of the sewer system. Storage areas, coal piles, floor drains, and landfill leachate collection systems must be designed to minimize loss to surface or ground water. Construction activities must also be performed in a manner that minimizes soil erosion and water pollution by adhering to specific requirements.

Combustion process installations must be designed in concert with guidelines on stack height, fuel selection, firing equipment, flue-gas-cleaning equipment, emission detectors, coal and ash handling, and testing facilities. Waste incinerators must be based on best-current technology, realistic loading rates, and energy recovery. Incineration is preferred for hazardous, organic wastes, but these materials may be landfilled in compliance with appropriate regulations. Permitted off-site incinerators should be investigated and used when economically feasible.

Volatile liquid storage facilities must be fitted with vapor emission control devices. All other sources of emission must be equipped with exhaust systems. Construction projects must be designed to minimize air pollution through proper disposal of debris, minimization of vegetation removal, dust control on roadways, and grass/brush fire prevention.

4.3 GLOSSARY

AQCR: Air Quality Control Regions (see discussion under the Clean Air Act)

BACT: Best Available Control Technology (see discussion under the Clean Air Act)

BAT: Best Available Technology

CAA: Clean Air Act

CEQ: Council on Environmental Quality

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA Hazardous Substance: A CERCLA hazardous substance includes any substance listed in Section 307(a) or 311(2)(a) of the Clean Water Act; any RCRA hazardous waste (40 CFR 261); any element, mixture, compound, solution, or substance designated under CERCLA Section 102; any hazardous air pollutant listed under Section 112 of the Clean Air Act; and any imminent hazardous chemical substance designated by the EPA Administrator under Section 7 of the Toxic Substances Control Act. The list of CERCLA hazardous substances is contained in 40 CFR 302.4

CWA: Clean Water Act

Dangerous Waste: Solid wastes designated in WAC 173-303 070 through 103 are dangerous and extremely hazardous wastes. Dangerous wastes include all RCRA hazardous wastes (40 CFR 261) and those wastes designated as dangerous by the State of Washington, over and above those that are hazardous under RCRA.

EIS: Environmental Impact Statement (see discussion under NEPA)

ESA: Endangered Species Act

FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act

FONSI: Finding of No Significant Impact (see discussion under NEPA)

FS: Feasibility Study (see discussion under CERCLA)

Hazardous Materials: The list of hazardous materials is contained in 40 CFR 172.101.

HLPSA: Hazardous Liquid Pipeline Safety Act

HMTA: Hazardous Materials Transportation Act

HRS: Hazard Ranking System (see discussion under CERCLA)

HSWA: Hazardous and Solid Waste Amendments of 1984 (see discussion under RCRA)

MCL: Maximum Contaminant Level (see discussion under SDWA)

MCLG: Maximum Contaminant Level Goal

MPRSA: Marine Protection, Research, and Sanctuaries Act

NAAQS: National Ambient Air Quality Standards (see discussion under the Clean Air Act)

NCA: Noise Control Act

NEPA: National Environmental Policy Act

NESHAP: National Emission Standards for Hazardous Air Pollutants (see discussion under the Clean Air Act)

NGPSA: Natural Gas Pipeline Safety Act

NHPA: National Historic Preservation Act

NPDES: National Pollutant Discharge Elimination System (see discussion under the Clean Water Act)

NPL: National Priorities List (see discussion under CERCLA)

NSPS: New Source Performance Standards (see discussion under the Clean Air Act)

Off-site: Although "off-site" is defined by neither WAC nor RCRA, "on-site" is. By deduction, off-site can be defined as any travel between two properties that are divided by a public right-of-way when that right-of-way can be accessed by the public, or when transporters use the right-of-way for anything but crossing at a perpendicular angle.

OSDA: On-Site Sewage Disposal Act

PCBs: Polychlorinated Biphenyls (see discussion under TSCA)

PSD: Prevention of Significant Deterioration (see discussion under the Clean Air Act)

RCRA: Resource Conservation and Recovery Act

Registered Pesticide: Registered pesticides include herbicides, fungicides, insecticides, and rodenticides whose use is regulated by the U.S. and the Washington Department of Agriculture. If a pesticide is registered, a label to that effect appears on the pesticide container.

Release: CERCLA Section 101(22) defines release as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment

(including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes (A) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (B) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (C) release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 107 of such Act, or, for the purposes of CERCLA Section 104 or any other response action, any release of source by-product, or special nuclear material from any processing site designated under Section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978, and (D) the normal application of fertilizer.

Reportable Release: A release of a CERCLA hazardous substance in an amount equal to or greater than its reportable quantity (RQ). The list of hazardous substances and their RQs is contained at 40 CFR 302.

RI: Remedial Investigation (see discussion under CERCLA)

RMCL: Recommended Maximum Contaminant Level (see discussion under SDWA)

ROD: Record of Decision (see discussion under CERCLA)

SDWA: Safe Drinking Water Act

SEPA: State Environmental Policy Act

SIPs: State Implementation Plans (see discussion under the Clean Air Act)

SUA: Stream, Unit, or Activity

Superfund: see Comprehensive Environmental Response, Compensation, and Liability Act.

TSCA: Toxic Substances Control Act

UIC: Underground Injection Control (see discussion under SDWA)

Underground Storage Tank: RCRA Subtitle I defines an underground storage tank as any tank that is used to contain accumulated petroleum products or CERCLA hazardous substances, the volume of which, including connected underground piping, is 10% or more below the ground.

UST: Underground Storage Tank (see discussion under RCRA)

WHPA: Washington Hydraulic Projects Act