

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF SOLID WASTE AND EMERGENCY PEEPON OSWER Directive 9347.1-02

MEMORANDUM

SUBJECT: Policy for Superfund Compliance With the RCRA Land Disposal

Restrictions

FROM:

Jonathan 2. Campo

Acting Assistant Administrator

TO:

Regional Administrators, Regions I-X

Purpose

To transmit the Superfund policy for complying with the RCRA land disposal restrictions (LDRs) at Superfund sites.

Background

CERCLA section 121(d) requires on-site Superfund remedial actions to comply with Federal, and more stringent State, environmental requirements that are determined to be applicable or relevant and appropriate requirements (ARARs). Section 121 also identifies six ARAR waivers: 1) interim remedy; 2) greater risk to human health and the environment; 3) technical impracticability; 4) equivalent standard of performance; 5) inconsistent application of State standard; and 6) Fund-balancing.

With regard to Superfund removal actions, the current NCP requires on-site removal actions to comply with Federal ARARs to the extent practicable, considering the exigencies of the situation. The preamble to the proposed NCP contains guidance on how to determine whether compliance is "practicable."

On-site removal and remedial actions must comply with <u>substantive</u> aspects of both applicable and relevant and appropriate requirements. Off-site removal and remedial actions must comply with both <u>substantive</u> and <u>administrative</u> aspects of applicable requirements only.

The RCRA land disposal restrictions are a potential ARAR for Superfund actions. As you may know, OERR is developing a guidance document to assist the Regions in complying with the LDRs. Although several issues must be resolved

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before this guidance is issued, this memorandum will summarize one of the major issues that has been decided, namely, how to determine whether the LDRs are "applicable" to a Superfund response action. This policy will be discussed in greater detail in the guidance document.

Objective

In order to assist Regional removal and remedial staff in making current site decisions about the LDRs, this memorandum will explain: 1) how to determine when the LDRs are "applicable" to a Superfund removal or remedial action, and 2) the Superfund approach for complying with the LDRs when they are determined to be applicable. (This memorandum does not address how to make "relevant and appropriate" determinations.)

Implementation

Section A below explains how site managers (OSCs, RPMs) should determine whether the LDRs are "applicable" to a Superfund response action. Section B explains how Superfund intends to comply with the LDRs when they are determined to be applicable.

A. Application of the LDRs to CERCLA response actions

To determine if the LDRs are applicable to a given response action at a Superfund site, the site manager must answer three questions. The answer to each question must be "yes" for the LDRs to be applicable.

1. Does the CERCLA action constitute "placement"?

The LDRs are triggered as applicable requirements by "placement" of restricted RCRA hazardous wastes in land-based units. Placement occurs when wastes are land disposed (or placed) in land-based RCRA units, such as landfills, surface impoundments, waste piles, and land treatment facilities. Placement does not occur if wastes are moved within a unit or are left in place (e.g., capping, in-situ treatment, consolidation within a unit). Placement does occur when wastes are moved from one unit and placed in another unit. For example, if wastes from a CERCLA site are disposed at an off-site landfill, this action constitutes placement.

However, the concept of a RCRA unit may be less useful for uncontrolled hazardous wants sites, which often involve widespread and dispersed contamination. Therefore, to assist in defining when placement occurs for on-site disposal at Superfund sites, the Agency has developed the concept of an

Several LDR requirements (the storage restrictions, dilution prohibition, and off-site notification requirements, in particular) are triggered when restricted wastes are generated, or picked up, rather than when the wastes are "placed." However, the major LDR restrictions discussed in the remainder of this memorandum are triggered only if wastes are "placed."

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"area of contamination" (AOC). An AOC is delineated by the extent of continuous contamination, although one AOC may contain varying types and concentrations of contamination. For example, a waste pit with the surrounding contaminated soil is one AOC and may be viewed as a single "unit," e.g., a single landfill. For the purposes of the LDRs, therefore, AOCs are equivalent to RCRA units.

Movement of waste within the AOC does not constitute placement, but movement of waste out of the AOC into another unit will trigger placement. Placement would occur if wastes from different AOCs are consolidated into one AOC or if wastes are removed and treated outside the AOC and returned to the same or a different AOC. Placement would also occur if wastes are excavated from the AOC, placed in an incinerator or tank located within the AOC, and then redeposited into the AOC, because the incinerator and tank are considered separate units from the AOC.

2. Is the CERCLA waste also a RCRA hazardous waste?

The LDRs are applicable only to RCRA hazardous wastes (i.e., listed and characteristic wastes identified under §261). However, not all wastes at Superfund sites are RCRA hazardous wastes. Therefore, the site manager must decide if it is reasonably ascertainable, within the scope of the Superfund site investigation, that the CERCLA waste is also a RCRA hazardous waste. Reasonable efforts must be used to collect the information needed to determine if a waste is a RCRA listed or characteristic waste. (It is expected that current data collection efforts at Superfund sites should be sufficient for this purpose.) The site manager should have affirmative evidence (e.g., manifests, records, knowledge of process) to demonstrate that the Superfund waste is a RCRA hazardous waste for the LDRs to be potentially applicable.

To determine whether a CERCLA waste is a RCRA <u>characteristic</u> waste, site managers may test the waste or use their knowledge of the properties of the waste. To determine if a waste is a <u>listed</u> waste, sampling alone will not be sufficient. The RCRA listing descriptions will generally require that the site manager have knowledge about the source of the waste (for example, did the sludge on site result from a wastewater treatment operation?) or its prior use (e.g., was the waste unused when it was discarded?).

If the site manager determines that the site waste is a RCRA hazardous waste, he/she must also determine if that waste is a "California list" waste. The California list wastes are a distinct category of RCRA hazardous wastes regulated under the LDRs. The LDR regulations describe the California list wastes and they will be discussed in the forthcoming guidance document.

3. Is the RCRA waste restricted under the LDRs at the time of placement?

The land disposal restrictions are being phased in for the RCRA hazardous wastes over a period of time. Attachment 1 presents the LDR statutory deadlines established by section 3004 of the 1984 RCRA amendments. A RCRA waste becomes a restricted waste under the LDRs on its statutory deadline, or earlier if EPA chooses to promulgate treatment standards for a waste prior to this deadline. Note that after May 1990, all RCRA hazardous wastes (that were

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listed or characteristic as of the 1984 RCRA amendments) will be restricted under the LDRs.

To determine if the LDRs are applicable, site managers should determine if the RCRA waste will be restricted under the LDRs at the time the waste is to be placed.

To summarize Section A, the LDRs are applicable when three conditions are met: 1) the CERCLA action constitutes placement, 2) the CERCLA waste is a RCRA hazardous waste, and 3) the RCRA waste is restricted at the time of placement. If these conditions are met, the CERCLA action must comply with the LDRs, unless an ARAR waiver is granted (remedial actions) or compliance with the LDRs is determined not to be "practicable" (removal actions).

B. Superfund compliance with the LDRs

Section B briefly describes the different types of LDR requirements and provides an overview of the Superfund approach for complying with these LDR requirements when they are determined to be "applicable." Section B describes only the major LDR restrictions; the upcoming guidance document will give a complete description of all LDR provisions.

1. Summary of the major LDR requirements

When a waste becomes "restricted" on its statutory deadline (or possibly earlier), one of four types of restrictions will take effect:

Treatment standard (§268.40-43) - The RCRA amendments direct EPA to promulgate treatment standards for all RCRA hazardous wastes by the statutory deadlines. To date, most of the standards set by EPA are concentration levels that must be achieved prior to land disposal. (The regulations specify whether a total waste analysis or the Toxicity Characteristic Leaching Procedure (TCLP) must be used to measure the concentration levels.) For concentration-based treatment standards, any technology may be used to achieve these standards. However, in limited cases, EPA has also promulgated a specific technology as a treatment standard, or has established a "no land disposal" treatment standard where a waste was no longer generated, no longer being land disposed, or was capable of being totally recycled.

National capacity extension (§268.30-33) - When EPA sets a treatment standard for a waste, it must also determine if there is sufficient capacity available nationwide to treat the waste to that standard. If not, EPA may grant a nationwide capacity extension for the waste for up to two years. During the extension, the waste does not have to meet the treatment standard. However, if waste that does not meet the standard is disposed in a landfill or surface impoundment, the receiving unit must meet the RCRA §3004(o) minimum technology requirements (e.g., double liner, leachate collection system, ground water monitoring). Because of these limitations on disposal, wastes are still considered "restricted" during national capacity extensions.

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Attachment 2 highlights the national capacity extensions that EPA has granted to date for CERCLA soil and debris wastes that are contaminated with RCRA restricted wastes.

Soft hammer (§268.8) - If EPA fails to set a treatment standard for a First or Second Third waste on the statutory deadline, the soft hammer goes into effect automatically. The soft hammer places two requirements on the disposal of wastes in landfills and surface impoundments: 1) the receiving unit must meet the RCRA minimum technology requirements, and 2) the generator must demonstrate and certify that he has investigated treatment options for the waste, and, where treatment is practically available, that the waste has been treated using the best practically available treatment method. The soft hammer remains in effect until EPA sets a treatment standard for the waste, or until the hard hammer falls in May 1990, whichever comes first.

Hard hammer (RCRA §3004(g)(6)(C)) - If EPA fails to set a treatment standard for a solvent, dioxin, or California list waste by the statutory deadlines for these wastes, or for any "Third" waste by May 1990, the hard hammer falls. The hard hammer prohibits all land disposal of the affected waste.

Compliance with RCRA and the LDRs may also be obtained through several options other than meeting the restrictions above. It is important to note that these options constitute compliance with RCRA; they do not require an ARAR waiver under CERCLA.

A <u>Treatability Variance</u> (§268.44) is available when a treatment standard has been set for a waste. The variance can be used where, because the site manager's waste is significantly different from the waste used by EPA to set the treatment standard, the standard cannot be met or the BDAT technology is inappropriate. The variance can be granted either administratively, for a particular waste at a particular site, or through a rule—making procedure, which establishes a new nationwide waste category and associated treatment standard.

An Equivalent Treatment Method Petition (§268.42) can be used where a treatment standard is a specified technology, but the site manager can demonstrate that another technology can achieve an equivalent measure of performance.

A <u>No-Migration Petition</u> (§268.6) can be used as an alternative to any of the four restrictions above. The site manager must demonstrate that there will be no migration of hazardous constituents above health-based levels from the disposal unit or injection zone for as long as the waste remains hazardous.

<u>Delisting</u> (§260.20 and §260.22) can be used as an alternative to any of the four restrictions above, when the RCRA hazardous waste is a listed waste. The site manager must demonstrate that: 1) the waste does not meet any of the criteria under which the waste was listed, and 2) other factors

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(including additional constituents) would not cause the waste to be hazardous.

2. Superfund approach for complying with the LDR requirements

The present Superfund approach for complying with the LDRs when they are applicable requirements is illustrated below:

CASE A: CERCLA liquid or sludge wastes that are also RCRA restricted hazardous wastes

CERCLA liquid + RCRA restricted + Placement = LDR is applicable. Must comply (unless CERCLA ARAR waiver is granted). If the LDR restriction is a treatment standard, evaluate whether it can be met. If not, determine if a Treatability Variance or other RCRA option is appropriate.

CASE B: CERCLA soil or debris wastes that contain RCRA restricted hazardous wastes

CERCLA soil + RCRA restricted + Placement = LDR is applicable. Must comply (unless CERCLA ARAR waiver is granted). If LDR restriction is a treatment standard, will generally be appropriate to seek a Treatability Variance. Other RCRA options may also be appropriate.

CERCLA response actions often address waste matrices, such as contaminated soil and debris, that are different from the RCRA industrial wastes used to set the LDR treatment standards. Therefore, the Agency is undertaking a rulemaking that will set LDR treatment standards specifically for contaminated soil and debris. Until that rulemaking is completed, site managers should use the data collected during the removal and remedial site investigations to support a Treatability Variance for soil and debris where necessary. As part of this interim approach, the Agency is developing specific guidance for obtaining a Treatability Variance for soil and debris, which establishes alternate treatment levels or methods for soil and debris.

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If you have Turther questions, you may call the Headquarters Superfund Regional Coordinators, Carolyn Offutt of the CERCLA program (FTS 475-9760), or Michaelle Wilson of the RCRA land disposal restrictions program (FTS 382-4770).

Attachments

cc: Regional Counsel, Regions I-X
Director, Waste Management Division, Regions I, IV, V, VII, and VIII
Director, Emergency and Remedial Response Division, Region II
Director, Hazardous Waste Management Division, Regions III and VI
Director, Toxics and Waste Management Division, Region IX
Director, Hazardous Waste Division, Region X
Environmental Services Division Directors, Regions I, VI, and VII
Henry Longest
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Superfund Branch Chiefs, Regions I-X
Oil and Hazardous Materials Coordinators, Regions I-X
Bettie Van Epps, OERR Document Coordinator

Attachment 1

LDR STATUTORY DEADLINES

RCRA HAZARDOUS WASTE	STATUTORY DEADLINE*
Spent solvent wastes (F001-F005)	November 8, 1986
Dioxin wastes (F020-F023 and F026-F028)	November 8, 1986
California list wastes - Any RCRA hazardous waste; and - Liquid (except for HOCs); and - Exceeds statutory prohibition level for certain cyanides, metals, corrosives, PCBs or HOCs	July 8, 1987
CERCLA/RCRA corrective action soil and debris (Solvent-containing, dioxin-containing, and California list wastes only)	November 8, 1988
First Third wastes (listed RCRA hazardous wastes)	August 8, 1988
Second Third wastes (listed RCRA hazardous wastes)	June 8, 1989
Third Third wastes (listed and characteristic RCRA hazardous wastes)	May 8, 1990
New RCRA wastes (any RCRA hazardous waste listed or identified under RCRA 3001 after November 8, 1984)	Within 6 months of listing or identification**

^{*} These dates are statutory deadlines in HSWA. On this date, some type of LDR restriction will apply (i.e., treatment standard, minimum requirement during national capacity extension, soft hammer, hard hammer). However, the Agency also has the authority to restrict a waste earlier than its statutory deadline. Currently, the Agency is planning to restrict certain Third Third wastes in the June 1989 Second Third rule, so individual regulations must be checked.

^{**} If EPA misses the 6 month deadline, the waste will not be restricted under the LDRs because HSWA contained no hammer provisions for newly identified wastes.

Attachment 2

LDR NATIONAL CAPACITY EXTENSIONS FOR CERCLA SOIL AND DEBRIS

Waste Category	Statutory Deadline	Treatment Standard Effective Dape
Solvent (F001-F005)	November 8, 1988	November 8, 1990*
Dioxin (F020-F023 and F026-F028)	November 8, 1988	November 8, 1990*
California list (HOCs)	November 8, 1988	November 8, 1990*
First Third:		
Wastes where BDAT is incineration	August 8, 1988	August 8, 1990*
Wastes where BDAT is other than incineration	August 8, 1988	August 8, 1988**
Soft hammer wastes - treatment standard not set; must meet soft hammer restrictions as of 8/8/88	August 8, 1988	N/A

^{*} The effective date is based on the granting of a national capacity extension. During the capacity extension, the soil and debris do not have to meet the promulgated treatment standards. However, if soil or debris that does not meet the standard is disposed in a landfill or surface impoundment, the receiving unit must meet the RCRA minimum technology requirements (double liner, leachate collection system, ground water monitoring).

^{**} Except for KO48-KO52 and KO71, which were granted capacity extensions until August 8, 1990.

APPENDIX A-1

Type of LDR Restriction in Effect for Each RCRA Hazardous Waste Code

- A-1(a) CHARACTERISTIC, SOLVENT- AND DIOXIN-CONTAINING, AND FIRST AND SECOND THIRD WASTES
- A-1(B) CALIFORNIA LIST WASTES

SEPTEMBER 1989

Waste Code ^{1,2}	Туре ^{3 4 6}	Dates Restricted	Type of Restriction	Coments
CHARACTERISTIC WAST	ES (40 CFR 261.2124)			
DOO1 Ignitable Wastes	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D002 Corrosive Wastes	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D003 Reactive Wastes	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
0004 Arsenic	All	5/8/90	To be determined	Will be restricted in Third Third rule
DOO5 Barium	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D006 Cadmium	All	5/8/90	To be determined	Will be restricted in Third Third rule
D007 Chromium	All	5/8/90	To be determined	Will be restricted in Third Third rule
D008 Lead	Alt	5/8/90	To be determined	Will be restricted in Third Third rule
D009 Mercury	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D010 Selenium	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D011 Silver	ALL	5/8/90	To be determined	Will be restricted in Third Third rule
D012 Endrin	All	5/8/90	To be determined	Will be restricted in Third Third rule
D013 Lindane	All	5/8/90	To be determined	Will be restricted in Third Third rule
D014 Methoxyclor	ALL	5/8/90	To be determined	Will be restricted in Third Third rule

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).2 Type^{3,4,6} Waste Code 1,2 Dates Restricted Type of Restriction Comments D015 ALL 5/8/90 To be determined Will be restricted in Third Third Toxaphene D016 ALL 5/8/90 To be determined Will be restricted in Third Third 2.4-D 5/8/90 To be determined Will be restricted in Third Third D017 2,4,5-TP Silvex rule LISTED WASTES (40 CFR 261.31-.33) 11/8/86 - Final F001-F005 All, except as noted below Treatment Standards Final, unless standards revised Spent Solvents Solvent wastes from small 11/8/88 - Final Treatment Standards final, unless standards revised quantity generators (SQGs) *11/8/86 -National Capacity Extension/ (>100 kg/month and <1000 kg/month) 11/8/88 Minimum Technology Requirements Solvent wastes generated 11/8/88 - Final Treatment Standards Final, unless standards revised from CERCLA/RCRA *11/8/86 -National Capacity Extension/ corrective actions (except 11/8/88 Minimum Technology Requirements contaminated soil and debris) 11/8/88 - Final Initial generator's Treatment Standards Final, unless standards revised solvent-water mixtures. *11/8/86 -National Capacity Extension/ solvent-containing sludges Minimum Technology Requirements or solids, or non-11/8/88 CERCLA/RCRA corrective action soils with < 1 percent total (F001-F005) solvent constituents Soil and debris from 11/8/88 Extension expires 11/8/90 National Capacity Extension/ CERCLA/RCRA corrective Minimum Technology Requirements actions

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).3 Waste Code 1,2 Type^{3,4,6} **Dates Restricted** Type of Restriction Comments F006 8/8/88 Norwastewaters Treatment Standards - concentration levels Final, unless standards revised Electroplating Norwastewaters (Cyanides) wastes 7/8/89 Treatment Standards - concentration levels Final, unless standards revised Soft hammer provisions⁵ **Wastewaters** 8/8/88 Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls F007 All 7/8/89 Treatment Standards - concentration levels Final, unless standards revised: Electroplating or National Capacity Extension/Minimum extension expires June 8, 1991, Technology Requirements (for underground wastes for underground injection only injected wastes) Soft hammer provisions⁵ *8/8/88 -7/8/89 F008 ALL 7/8/89 Treatment Standards - concentration levels Final, unless standards revised Electroplating *6/8/89 -Minimum Technology Requirements wastes 7/8/89 *8/8/88 -Soft hammer provisions 6/8/89 F009 ALL 7/8/89 Treatment Standards - concentration levels Final, unless standards revised Electroplating *6/8/89 -Minimum Technology Standards wastes 7/8/89 Soft hammer provisions⁵ *8/8/88 -6/8/89 F010 All, except as noted below 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Metal heat-National Capacity Extension/Minimum Soil and debris 6/8/89 Extension expires June 8, 1991 treating wastes Technology Requirements

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).4

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA NAZARDOUS WASTE CODE

Waste Code 1,2 Type^{3,4,6} Dates Restricted Type of Restriction Connents F011 Norwastewaters 12/8/89 Final Treatment Standards - concentration Final, unless standards revised Metal heatlevels (110 mg/kg for total cyanides and 9.1 treating wastes mg/kg for amenable cyanides) ***7/8/89** -Interim Treatment Standards - F007, F008, and F009 nonwastewater standards (i.e., 590 12/8/89 mg/kg for total cyanides and 30 mg/kg for amenable cyanides) *6/8/89 -Minimum Technology Requirements 7/8/89 **Wastewaters** 7/8/89 Treatment Standards - concentration levels Final, unless standards revised *6/8/89 -Minimum Technology Requirements 7/8/89 F012 12/8/89 Final Treatment Standards - concentration Norwastewaters Final, unless standards revised Metal heatlevels (110 mg/kg for total cyanides and 9.1 treating wastes mg/kg for amenable cyanides) *7/8/89 -Interim Treatment Standards - F007, F008, and F009 monwastewater standards (i.e., 590 12/8/89 mg/kg for total cyanides and 30 mg/kg for amenable cyanides) *6/8/89 -Minimum Technology Requirements 7/8/89 **Wastewaters** 7/8/89 Treatment Standards - concentration levels Final, unless standards revised *6/8/89 -Minimum Technology Requirements 7/8/89 F019 ALL 8/8/88 Soft hammer provisions Effective until EPA sets treatment standards or May 8. Aluminum coating 1990, when the hard hammer falls wastes

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).5 Type^{3,4,6} Waste Code 1,2 Dates Restricted Type of Restriction Comments F020-F023 All, except as noted below 11/8/88 Treatment Standards Final, unless standards revised Dioxin wastes from chlorophenol Soil and debris from 11/8/88 National Capacity Extension/ Extension expires Nov. 8, 1990. and chlorobenzene CERCLA/RCRA corrective Minimum Technology Requirements Soil and debris treatment production actions standards to be promutgated F024 All, except as noted below Treatment Standards - concentration levels Final, unless standards revised 6/8/89 Chlorinated Aliphatic Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Hydrocarbon Technology Requirements production wastes F026-028 All, except as noted below 11/8/88 Treatment Standards Final, unless standards revised Dioxin wastes from chlorophenol Soil and debris from 11/8/88 National Capacity Extension/ Extension expires Nov. 8, 1990. and chlorobenzene CERCLA/RCRA corrective Soil and debris treatment Minimum Technology Requirements production actions standards to be promulgated K001 All, except as noted below 8/8/88 Treatment Standards - concentration levels Final, unless standards revised Wood preserving National Capacity Extension/ wastes Soil and debris 8/8/88 Extension expires Aug. 8, 1990. Minimum Technology Requirements K002 Will be restricted in the Third 5/8/90 To be determined Chrome yellow and Third rule orange pigment production wastes K003 5/8/90 To be determined Will be restricted in the Third Molybdate orange Third rule pigment production wastes K004 Will be restricted in the Third Nonwastewaters 5/8/90 To be determined Zinc yellow Third rule pigment production wastes *8/8/88 Treatment Standards - no land disposal 6/8/89 Soft harmer provisions⁵ **Vastewaters** 8/8/88 Effective until EPA sets treatment standards or May 8. 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF 1DR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

A-1(a)_6

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
005 Chrome green pigment	Norwastewaters disposed of after June 8, 1989	6/8/89	Treatment Standards - no land disposal	Final, unless standards revised
production wastes	Nonwastewaters disposed of before June 8, 1989	5/8/90	To be determined	Will be restricted in the Third Third rule
	Wastewaters	5/8/90	To be determined	Will be restricted in the Third Third rule
(006 Chrome oxide green pigment production wastes		5/8/90	To be determined	Will be restricted in the Third Third rule
(007 Iron blue pigment	Norwastewaters disposed of after June 8, 1989	6/8/89	Treatment Standards - no land disposal	Final, unless standards revised
production wastes	Norwastewater's disposed of before June 8, 1989	5/8/90	To be determined	Will be restricted in the Third Third rule
	Wastewaters	5/8/90	To be determined	Will be restricted in the Third Third rule
(008 Green pigment	Nonwastewaters	5/8/90	To be determined	Will be restricted in Third Thir rule
chrome oxides production wastes		*8/8/88 6/8/89	Treatment Standards - no land disposal	
	Wastewaters	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K009	Norwastewaters	6/8/89	Freatment Standards - concentration levels	Final, unless standards revised
Acetaldehyde production wastes	Wastewaters	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised; extension expires June 8, 1991, for underground injection only
	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).7 <u>Type</u>3,4,6 <u>Waste</u> Code^{1,2} **Dates Restricted** Type of Restriction Comments K010 All, except as noted below 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Acetal dehyde production wastes Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K011 Nonwastewaters 6/8/89 Treatment Standards - concentration levels Final, unless standards revised; Acrylonitrile or National Capacity Extension/Minimum extension expires June 8, 1991. production wastes Technology Requirements (for underground for underground injection only injected wastes) Soft hammer provisions⁵ *8/8/88 Effective until EPA sets 6/8/89 treatment standards or May 8, 1990, when the hard hammer falls Soft harmer provisions⁵ 8/8/88 Wastewaters Soil and Debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Treatment Standards - concentration levels K013 6/8/89 Final, unless standards revised; Nonwastewaters **Acrylonitrile** or National Capacity Extension/Minimum extension expires June 8, 1991, production wastes Technology Requirements (for underground for underground injection only injected wastes) *8/8/88 Soft harmer provisions⁵ 6/8/89 8/8/88 Soft harmer provisions⁵ Effective until EPA sets **Vastevaters** treatment standards or May 8. 1990, when the hard hammer falls Extension expires June 8, 1991 6/8/89 National Capacity Extension/Minimum Soil and Debris Technology Requirements

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOLIS WASTE CODE

A-1(a).8 Waste Code 1,2 Type^{3,4,6} **Dates Restricted** Type of Restriction Comments K014 Norwastewaters 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Acrylonitrile production wastes Soft hammer provisions⁵ *8/8/88 -6/8/89 Effective until EPA sets Soft harmer provisions⁵ **Vastewaters** 8/8/88 treatment standards or May 8, 1990, when the hard hammer falls Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K015 To be determined Will be restricted in Third Third Nonwastewaters 5/8/90 Benzyl chloride rule distillation wastes *8/8/88 -Treatment Standards - no land disposal 5/2/89 5/8/90 To be determined Will be restricted in Third Third **Wastewaters** rule Treatment Standards - concentration levels *8/8/88 -5/2/89 Soil and debris 5/8/90 To be determined Will be restricted in Third Third rule *8/8/88 -National Capacity Extension/ Minimum Technology Requirements 5/2/89 K016 Treatment Standards - concentration levels Final, unless standards revised All, except as noted below 8/8/88 Carbon Tetrachloride Soil and debris 8/8/88 National Capacity Extension/ Extension expires Aug. 8, 1990 Minimum Technology Requirements production wastes Soft harmer provisions⁵ K017 8/8/88 Effective until EPA sets ALL treatment standards or May 8, Epichlorohydrin production wastes 1990, when the hard hammer falls All, except as noted below Final, unless standards revised K018 8/8/88 Treatment Standards - concentration levels Ethyl chloride Extension expires Aug. 8, 1990 production wastes 8/8/88 National Capacity Extension/ Soil and debris Minimum Technology Requirements

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued) TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
K019 Ethylene	All, except as noted below	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
dichloride production wastes	Soil and debris	8/8/88	National Capacity Extension/ Minimum Technology Requirements	Extension expires Aug. 8, 1990
KO2O Vinyl chloride	All, except as noted below	B/8/88	Treatment Standards - concentration levels	Final, unless standards revised
production wastes	Soil and debris	8/8/88	National Capacity Extension/ Minimum Technology Requirements	Extension expires Aug. 8, 1990
K021 Fluoromethanes production wastes	Norwastewaters disposed of after August 17, 1988	5/2/89	Treatment' Standards- no land disposal	Final, unless standards revised
production wastes	Nonwastewater generated from treatment of wastewater or originally disposed of before August 17, 1988	5/2/89	To be determined	Will be restricted in Third Third rule
	Norwastewaters (all)	*8/8/88 - 5/2/89	Treatment standard - no land disposal	
	Wastewaters	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K022 Phenol/acetone	Nonwastewaters	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
production wastes	Wastewaters	8/8/88	Soft harmer provisions ⁵	Effective until EPA sets treatment standards or May B, 1990, when the hard hammer falls
	Soft and debris	8/8/88	Mational Capacity Extension/Minimum Technology Requirements	Extension expires Aug. 8, 1990
KO23 Phthalic	All, except as noted below	6/8/89	Treatment standards - concentration levels	Final, unless standards revised
anhydride production wastes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
KO24 Phthalic	All, except as noted below	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
anhydride production wastes	Soil and debris	8/8/88	Mational Capacity Extension/Minimum Technology Requirements	Extension expires Aug. 8, 1990
K025 Nitrobenzene production wastes	Nonwestewaters disposed of after August 17, 1988	5/2/89	Treatment Standards - no land disposal	Final, unless standards revised
Nonwastewater generated from treatment of wastewater or originally disposed of before August 17, 1988 Nonwastewaters (all) Wastewaters	5/2/89	To be determined	Will be restricted in Third Third rule	
	Nonwastewaters (all)	*8/8/88 - 5/2/89	Treatment Standards - no land disposal	
	Wastewaters	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
KO26 Methyl ethyl pyridines production wastes		5/8/90	To be determined	Will be restricted in the Third Third rule
KO27 Toluene	All, except as noted below	6/8/89	Treatment Standards - specified technology	Final, unless standards revised
disocyanate production wastes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
K028 1,1,1-	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
Trichloroethane production wastes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).11 Type^{3,4,6} Waste Code^{1,2} **Dates Restricted** Type of Restriction Comments K029 **Norwastewaters** 6/8/89 Treatment Standards - concentration levels Final, unless standards revised 1.1.1-Trichloroethane Soft harmer provisions⁵ **Wastewaters** 6/8/89 Effective until EPA sets treatment standards or May 8. production wastes 1990, when the hard hammer falls Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K030 All, except as noted below 8/8/88 Treatment Standards - concentration levels Final, unless standards revised Trichloroethylene Soil and debris 8/8/88 National Capacity Extension/Minimum Extension expires Aug. 8, 1990 Technology Requirements perchloroethylene production wastes Soft hammer provisions⁵ Effective until EPA sets K031 ALL 8/8/88 MSMA & cacodylic treatment standards or May 8. acid production 1990, when the hard harmer falls wastes K032 Will be restricted in the Third 5/8/90 To be determined Chlordane Third rule production wastes 5/8/90 To be determined Will be restricted in the Third Third rule Chlordane production wastes Will be restricted in the Third K034 5/8/90 To be determined Chilordane Third rule production wastes Soft hammer provisions K035 8/8/88 Effective until EPA sets ALL Creosote treatment standards or May 8. production wastes 1990, when the hard hanner falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

Maste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
K036 Disulfoton production wastes	Norwastewaters disposed of after August 17, 1988	5/2/89	Treatment Standards - no land disposal	Final, unless standards revised
	Nonwastewater generated from treatment of wastewater or originally disposed of before August 17, 1988	5/2/89	To be determined	Will be restricted in Third Third rule
	Nonwastewaters (all)	*8/8/88 - 5/2/89	Treatment Standards - no land disposal	
	Wastewaters	6/8/89	Treatment Standards - concentration levels	Final unless standards revised
		*8/8/88 - 6/8/89	Soft hammer provisions ⁵	
KO37 Disulfoton	All, except as noted below	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
production wastes	Soil and debris	8/8/88	National Capacity Extension/Minimum Technology Requirements	Extension expires Aug. 8, 1990
K038 Phorate	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
production wastes	Soil and debris	6/8/89	Mational Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
K039 Phorate	All, except as noted below	6/8/89	Treatment Standards - specified technology	Final, unless standards revised
production filter cakes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
K040 Phroate	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
production wastes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
KO41 Toxaphene production wastes	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).13 <u>Type</u>3,4,6 Waste Code 1,2 Dates Restricted Type of Restriction Comments Soft hammer provisions K042 ALL 6/8/89 Effective until EPA sets 2.4.5-T treatment standards or May 8, production wastes 1990, when the hard harmer falls K043 All, except as noted below 6/8/89 Treatment Standards - concentration levels Final, unless standards revised 2,4-D production wastes Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K044 ALL 8/8/88 Treatment Standards - no land disposal Final, unless standards revised **Explosives** production wastes K045 ALL 8/8/88 Treatment Standards - no land disposal Final, unless standards revised Spent carbon from explosives treatment K046 Final, unless standards revised 8/8/88 Treatment Standards - concentration levels Nonreactive nonwastewaters Wastes from Lead-Soft harmer provisions⁵ based initiating 8/8/88 Effective until EPA sets Reactive nonwastewaters treatment standards or May 8, compounds 1990, when the hard hammer falls Soft hammer provisions⁵ Effective until EPA sets **Wastewaters** 8/8/88 treatment standards or May 8. 1990, when the hard hammer falls **K047** ALL 8/8/88 Treatment Standards - no land disposal Final, unless standards revised TNT operations waste **KD48** ALL 8/8/88 - 8/8/90 National Capacity Extension/ Minimum Technology Requirements Petroleum refining industry 8/8/90 - Final Treatment Standards - concentration levels Final, unless standards revised wastes K049 All 8/8/88 - 8/8/90 National Capacity Extension/ Minimum Technology Requirements Petroleum refining industry Final, unless standards revised Treatment Standards - concentration levels wastes 8/8/90 - Final

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).14 Waste Code 1,2 Type^{3,4,6} Type of Restriction **Dates Restricted** Comments ALL K050 8/8/88 - 8/8/90 National Capacity Extension/ Petroleum Minimum Technology Requirements refining industry 8/8/90 - Final Treatment Standards - concentration levels Final, unless standards revised wastes K051 All 8/8/88 - 8/8/90 National Capacity Extension/ Minimum Technology Requirements Petroleum refining industry 8/8/90 - Final Treatment Standards - concentration levels Final, unless standards revised wastes K052 ALL National Capacity Extension/ 8/8/88 - 8/8/90 Petroleum Minimum Technology Requirements refining industry Final, unless standards revised 8/8/90 - Final Treatment Standards - concentration levels wastes K060 Norwastewaters disposed of 5/2/89 Treatment Standards - no land disposal Final, unless standards revised Coking operations after August 17, 1988 wastes 5/2/89 Will be restricted in Third Third Norwastewater generated To be determined from treatment of rule wastewater or originally disposed of before August 17, 1988 *8/8/88 -Treatment Standards - no land disposal Norwastewaters (all) 5/2/89 Soft hammer provisions⁵ 8/8/88 **Wastewaters** Effective until EPA sets treatment standards or May 8, 1990, when the hard harmer falls K061 Nonwestewaters - high zinc 8/8/88 - 8/8/90 Interim Treatment Standards - concentration Until Aug. 8, 1990 Electric furnace (≥ 15 percent total zinc) levels steel production 8/8/90 - Final Treatment Standards - no land disposal Final, unless standards revised wastes Norwastewaters - low zinc 8/8/88 Treatment Standards - concentration levels Final, unless standards revised (< 15 percent total zinc) Soft hammer provisions⁵ 8/8/88 Effective until EPA sets **Vastevaters** treatment standards or May 8. 1990, when the hard harmer falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA NAZARDOUS WASTE CODE

A-1(a).15 <u>Was</u>te Code^{1,2} Type^{3,4,6} **Dates Restricted** Type of Restriction Comments ALL K062 8/8/88 Treatment Standards - concentration levels Final, unless standards revised Steel finishing spent pickle liquor Soft hammer provisions⁵ K069 Norwastewaters with 8/8/88 Effective until EPA sets Secondary Lead calcium sulfate treatment standards or May 8, smelting wastes 1990, when the hard hammer falls Norwastewaters without 5/2/89 Treatment Standards - no land disposal Final, unless standards revised calcium sulfate disposed of after August 17, 1988 5/2/89 Will be restricted in Third Third Nonwastewater generated To be determined from treatment of rule wastewater or originally disposed of before August 17, 1988 Nonwastewaters without *8/8/88 -Treatment Standards - no land disposal calcium sulfate (all) 5/2/89 Soft hammer provisions⁵ 8/8/88 Effective until EPA sets **Wastewaters** treatment standards or May 8. 1990, when the hard hammer falls K071 ALL 8/8/88 National Capacity Extension/Minimum Extension expires Aug. 8, 1990. Chlorine Technology Requirements production wastes 8/8/90 Final, unless standards revised Treatment Standards - concentration levels Soft hammer provisions⁵ K073 ALL 8/8/88 Effective until EPA sets Chlorine treatment standards or May 8, production wastes 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
K083 Aniline	Monwastewaters - no ash (<0.01 percent total ash)	5/8/90	To be determined	Will be restricted in Third Third rule
production wastes	,, ,	*8/8/88 - 5/2/89	Treatment Standards - no land disposal	
	Nonwastewaters with detectable ash and	5/8/90	To be determined	Will be restricted in Third Third rule
	wastewaters	*8/8/88 - 5/2/89	Soft hammer provisions ⁵	Tuce
	Soil and debris	5/8/90	To be determined	Will be restricted in Third Third rule
		*8/8/88 - 5/2/89	National Capacity Extension/Minimum Technology Requirements	
KO84 Veterinary pharmaceuticals production wastes	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K085 Chlorobenzene production wastes	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K086 1nk production	Solvent washes, non-soil and debris	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
wastes	Solvent washes, soil and debris	8/8/88	National Capacity Extension/ Minimum Technology Requirements	Extension expires Aug. 8, 1990
	Solvent sludges and caustic water and sludge	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
KO87 Coking operations	All, except as noted below	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
wastes	Soil and debris	8/8/88	National Capacity Extension/Minimum Technology Requirements	Extension expires Aug. 8, 1990

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a),17

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
(093 Phthalic	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
enhydride production wastes	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
KO94 Phthalic	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
enhydride production wastes	Soil and debris	6/8/89	National Capacity Extension/ Minimum Technology Requirements	Extension expires June 8, 1991
K095 1,1,1-trichloro-	Horwastewaters	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
ethane production Wastewaters wastes Soil and debris	Wastewaters	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
(096 1,1,1 trichloro-	Norwestewaters	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
ethane production wastes	Wastewaters	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
	Soil and debris	6/8/89	Wational Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
K097 Chlordane production wastes	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K098 Toxaphene production wastes	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
K099 2,4-D production wastes	All	8/8/88	Treatment Standards - concentration (evels	final, unless standards revised

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
K100 Secondary lead	Nonwastewaters disposed of after August 17, 1988	5/2/89	Treatment Standards - no land disposal	Final, unless standards revised
from treatment of wastewater or origina	wastewater or originally disposed of before August	5/2/89	To be determined	Will be restricted in the Third Third rule
	Nonwastewaters (all)	*8/8/88 - 5/2/89	Treatment Standards - no land disposal	
	Wastewaters	5/8/90	To be determined	Will be restricted in the Third Third rule
K101 Veterinary pharmaceuticals	Nonwastewaters with high arsenic (≥ 1 percent total arsenic)	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
production Wastes	Nonwestewaters (except for soil and debris) with low arsenic (< 1 percent total arsenic)	8/8/88	Treatment Standards - concentration levels	Final, unless standards revised
	Vastewaters	8/8/88	Treatment Standards - concentration levels	final, unless standards revised
	Soil and debris with low arsenic (< 1 percent total arsenic)	8/8/88	National Capacity Extension/Minimum Technology Requirements	Extension expires Aug. 8, 1990

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).19 Waste Code 1,2 Type^{3,4,6} **Dates Restricted** Type of Restriction Comments Soft hammer provisions⁵ K102 Norwastewaters with high 8/8/88 Effective until EPA sets Veterinary arsenic (> 1 percent total treatment standards or May 8, pharmaceuticals arsenic) 1990, when the hard hammer falls production wastes 8/8/88 Nonwastewaters (except for Treatment Standards - concentration levels Final, unless standards revised soil and debris) with low arsenic (< 1 percent total arsenic) **Wastewaters** 8/8/88 Treatment Standards - concentration levels Final, unless standards revised Soil and debris with low 8/8/88 National Capacity Extension/Minimum Extension expires Aug. 8, 1990 arsenic (< 1 percent total Technology Requirements arsenic) 8/8/88 Treatment Standards - concentration levels K103 All, except as noted Final, unless standards revised Aniline Soil and debris 8/8/88 National Capacity Extension/Minimum Extension expires Aug. 8, 1990 production wastes Technology Requirements K104 All, except as noted 8/8/88 Treatment Standards - concentration levels Final, unless standards revised Nitrobenzene/ aniline Soil and debris 8/8/88 National Capacity Extension/Minimum Extension expires Aug. 8, 1990 Technology Requirements production wastes K105 ALL 6/8/89 Soft harmer provisions Effective until EPA sets treatment standards or May 8, Chlorobenzene production wastes 1990, when the hard hammer falls Soft harmer provisions⁵ 8/8/88 Effective until EPA sets K106 ALL Chlorine treatment standards or May 8, 1990, when the hard harmer falls production wastes K111 7 To be N/A HSWA requires EPA to set standards within six months of Dinitrotoluene determined listing, but no hammers apply production wastes K112 7 HSWA requires EPA to set To be N/A Toluenediamine determined standards within six months of listing, but no hammers apply production wastes

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).20 <u>Vaste</u> Code^{1,2} Type^{3,4,6} Dates Restricted Type of Restriction Connents K113 7 All, except as noted below 5/8/89 Treatment Standards - specified technology Final, unless standards revised Toluenedianine Soil and debris 6/8/89 Kational Capacity Extension/Minimum Extension expires June 8, 1991 production wastes Technology Requirements X114 7 Treatment Standards - specified technology All, except as noted below 6/8/89 Final, unless standards revised Toluenediamine 6/8/89 production wastes Soil and debris Mational Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K115 7 All, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised Toluenediamine and concentration levels for treatment production wastes residues Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K116 7 All, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised Toluene production wastes Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements K117 8 AI I 10 be HSWA requires EPA to set Ethylene determined standards within six months of dibromide listing, but no hammers apply K118 8 HSWA requires EPA to set ALL To be Ethylene determined standards within six months of dibromide listing, but no hammers apply K123 9 10 be HSMA requires EPA to set ALL ERDC determined standards within six months of listing, but no hammers apply K124 9 ALL To be HSWA requires EPA to set ERDC determined standards within six months of listing, but no hammers apply K125 9 ALL to be NA RSWA recuires EPA to set standards within six months of ERDC determined listing, but no hammers apply

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
K126 ⁹ ERDC	ALL	To be determined	HA	HSWA requires EPA to set standards within six months of listing, but no hammers apply
K136 ⁸ Ethylene dibromide	All	To be determined	NA	HSWA requires EPA to set standards within six months of listing, but no hammers apply
P001 Warfarin, > 0.3 percent	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P002 1-Acetyl-2- thicurea	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P003 Acrolein	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P004 Aldrin	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P005 Allyl alcohol	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P006 Aluminum phosphide	•••••	5/8/90	To be determined	Will be restricted in the Third Third rule
P007 5-(Aminoethyl)-3- isoxazolol	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P008 4-Aminopyridine	ALL	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P009 Ammonium picrate		5/8/90	To be determined	Will be restricted in the Third Third rule

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

<u>Waste Code^{1,2}</u> Type^{3,4,6} Type of Restriction **Dates Restricted Comments** Soft harmer provisions⁵ P010 ALL 8/8/88 Effective until EPA sets Arsenic acid treatment standards or May 8. 1990, when the hard hammer falls P011 8/8/88 Soft hammer provisions⁵ Effective until EPA sets Arsenic (V) oxide treatment standards or May 8. 1990, when the hard hammer falls P012 8/8/88 Soft hammer provisions⁵ ALL Effective until EPA sets Arsenic (111) treatment standards or May 8. oxide 1990, when the hard harmer falls P013 ALL 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Barium cyanide P014 Soft harmer provisions ALL 6/8/89 Effective until EPA sets Thiophenol treatment standards or May 8, 1990, when the hard harmer falls Soft hammer provisions⁵ P015 ALL 8/8/88 Effective until EPA sets Beryllium dust treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ P016 ALL 8/8/88 Effective until EPA sets Bis-(chlorotreatment standards or May 8. methyl) ether 1990, when the hard hammer falls _______ P017 5/8/90 To be determined Will be restricted in the Third Bromoacetone Third rule P018 ALL 8/8/88 Soft hammer provisions⁵ Effective until EPA sets Brucine treatment standards or May 8. 1990, when the hard hammer falls · P020 8/8/88 Soft harmer provisions ALL Effective until EPA sets Dinoseb treatment standards or May 8, 1990, when the hard hammer falls P021 ALL 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Calcium cyanide P022 5/8/90 To be determined Will be restricted in the Third Carbon disulfide Third rule

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).23 Type^{3,4,6} Waste Code 1.2 Dates Restricted Type of Restriction Comments P023 5/8/90 To be determined Will be restricted in the Third Chloroacetalde-Third rule hyde P024 5/8/90 To be determined Will be restricted in the Third p-Chloroaniline Third rule P026 ALL 6/8/89 Soft harmer provisions Effective until EPA sets 1-(o-Chlorotreatment standards or May 8. phenyl) thiourea 1990, when the hard harmer falls Soft hammer provisions P027 ALL 6/8/89 Effective until EPA sets Propanenitrile. treatment standards or May 8, 3-chtoro 1990, when the hard hammer falls 5/8/90 To be determined Will be restricted in the Third Benzyl chloride Third rule P029 6/8/89 Treatment Standards - concentration levels ALL Final, unless standards revised Copper cyanides P030 Alt 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Soluble cyanide salts (NOS) *8/8/88 -Soft hammer provisions⁵ 6/8/89 To be determined Will be restricted in the Third P031 5/8/90 Cyanogen Third rule 5/8/90 To be determined Will be restricted in the Third Cyanogen chloride P034 5/8/90 To be determined Will be restricted in the Third 4.6-Dinitro-o-Third rule cyclohexylphenol P036 ALL 8/8/88 Soft hammer provisions Effective until EPA sets Dichlorophenyltreatment standards or May 8. arsine 1990, when the hard hammer falls P037 Soft hammer provisions ALL 8/8/88 Effective until EPA sets Dieldrin treatment standards or May 8, 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

Type^{3,4,6} Waste Code 1,2 **Dates Restricted** Type of Restriction Comments P038 5/8/90 To be determined Will be restricted in the Third Diethylarsine Third rule P039 Treatment Standards - concentration levels Final, unless standards revised All, except as noted below 6/8/89 Disulfaton *8/8/88 -Soft harmer provisions⁵ 6/8/89 Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements P040 All, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised 0,0-Diethyl o-Soil and debris pyrazinyl 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 phosphorothioate Technology Requirements P041 Treatment Standards - specified technology All, except as noted below 6/8/89 Final, unless standards revised Diethyl-p-nitrophenyl phosphate Soft harmer provisions⁵ *8/8/88 -6/8/89 Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements P042 5/8/90 To be determined Will be restricted in the Third Epinephrine Third rule P043 All, except as noted below Treatment Standards - specified technology 6/8/89 Final, unless standards revised Diisopropyl fluorophosphate 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Soil and debris Technology Requirements P044 Treatment Standards - specified technology All, except as noted below 6/8/89 Final, unless standards revised Dimethoate Sail and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Will be restricted in the Third P045 5/8/90 To be determined Thiofanox Third rule

^{*} Restriction in effect only for period noted.

A-1(a).25

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

Type^{3,4,6} Waste Code 1,2 Type of Restriction **Dates Restricted** Comments P046 5/8/90 To be determined Will be restricted in the Third Third rule Alpha, alpha-Dimethylphenethyl -amine P047 5/8/90 To be determined Will be restricted in the Third 4.6-Dinitro-o-Third rule cresol and salts Soft harmer provisions 8/8/88 Effective until EPA sets P048 ALL treatment standards or May 8. 2,4 Dinitrophenol 1990, when the hard hammer falls Soft harmer provisions⁵ 6/8/89 Effective until EPA sets P049 ALL treatment standards or May 8. 2.4-Dithiobiuret 1990, when the hard harmer falls P050 8/8/88 Soft hammer provisions Effective until EPA sets All treatment standards or May 8, Endosul fan 1990, when the hard hammer falls Will be restricted in the Third P051 5/8/90 Third rule Endrin Soft hammer provisions Effective until EPA sets P054 ALL 6/8/89 treatment standards or May 8. Aziridine 1990, when the hard hammer falls Will be restricted in the Third 5/8/90 To be determined P056 Third rule Fluorine Soft hammer provisions⁵ Effective until EPA sets ALL 6/8/89 treatment standards or May 8, Fluoracetamide 1990, when the hard hammer falls Soft hammer provisions P058 8/8/88 Effective until EPA sets ALL treatment standards or May 8. Fluoracetic acid 1990, when the hard harmer falls sodium salt Soft hammer provisions⁵ P059 8/8/88 Effective until EPA sets ALL treatment standards or May 8. Heptachlor 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

A-1(a).26 Type^{3,4,6} Waste Code 1,2 **Dates Restricted** Type of Restriction Coments Soft harmer provisions⁵ P060 ALL 6/8/89 Effective until EPA sets treatment standards or May 8. 1sodrin 1990, when the hard harmer falls P062 Ail, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised Hexaethyltetraphosphate Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Treatment Standards - concentration levels Final, unless standards revised Alt 6/8/89 Hydrogen cyanide Soft hammer provisions⁵ *8/8/88 -6/8/89 P064 5/8/90 To be determined Will be restricted in the Third Methyl isocyanate Third rule Will be restricted in the Third PO65 5/8/90 To be determined Third rule Mercury fulminate P066 ALL 6/8/89 Soft harmer provisions³ Effective until EPA sets Methonyl treatment standards or May 8. 1990, when the hard hammer falls 6/8/89 Soft harmer provisions Effective until EPA sets 2-Methylaziridine treatment standards or May 8. 1990, when the hard hammer falls 8/8/88 Soft harmer provisions P068 ALL Effective until EPA sets Methyl Hydrazine treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ P069 8/8/88 Effective until EPA sets ALL Methyl Lactoni treatment standards or May 8. 1990, when the hard harmer falls trile P070 Effective until EPA sets All 8/8/88 Soft hammer provisions treatment standards or May 8. Aldicarb 1990, when the hard harmer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

A-1(a).27 Type^{3,4,6} Waste Code 1.2 Dates Restricted Type of Restriction Comments P071 Treatment Standards - concentration levels All, except as noted below 6/8/89 Final, unless standards revised Methyl parathion Soft hammer provisions⁵ *8/8/88 -6/8/89 Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Soft hammer provisions⁵ P072 ALL 6/8/89 Effective until EPA sets ANTU treatment standards or May 6, 1990, when the hard hammer fails P073 5/8/90 To be determined Will be restricted in the Third Nickel Carbonyl Third rule P074 Treatment Standards - concentration levels 6/8/89 Final, unless standards revised Nickel Cyanide P075 5/8/90 To be determined Will be restricted in the Third Nicotine and Third rule salts P076 5/8/90 To be determined Will be restricted in the Third Nitric oxide Third rule 5/8/90 To be determined Will be restricted in the Third p-Nitroaniline Third rule 5/8/90 To be determined Will be restricted in the Third Nitrogen dioxide Third rule P081 8/8/88 Soft hammer provisions³ Effective until EPA sets ALL Nitroglycerine treatment standards or May 8. 1990, when the hard hammer falls P082 ALL 8/8/88 Soft hammer provisions³ Effective until EPA sets N-Nitrosoditreatment standards or May 8, methylamine 1990, when the hard harmer falls P084 8/8/88 Soft hammer provisions Effective until EPA sets ALL N-Nitrosomethyltreatment standards or May 8, vinylamine 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Comments	
P085 Octamethylpyro-	All, except as noted below	6/8/89	Treatment Standards - specified technology	Final, unless standards revised	
phosphoramide	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991	
PO87 Osmium Tetraoxide			Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls	
P088 Endothal l		5/8/90	To be determined	Will be restricted in the Third Third rule	
P089	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised	
Parathion		*8/8/88 - 6/8/89	Soft hammer provisions ⁵		
	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991	
P092 Phenylmercuric acetate	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls	
P093 N-Phenylthiourea		5/8/90	To be determined	Will be restricted in the Third Third rule	
P094	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised	
Phorate		*8/8/88 - 6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls	
	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991	
P095 Phosgene		5/8/90	To be determined	Will be restricted in the Third Third rule	
P096 Phosphine		5/8/90	To be determined	Will be restricted in the Third Third rule	

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Comments
P097	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
amphur		*8/8/88 - 6/8/89	Soft hammer provisions ⁵	
	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
098 Potassium cyanide	All	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
P099 Potassium silver cyanide	All	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
P101 Propanenitrile		5/8/90	To be determined	Will be restricted in the Third Third rule
P102 Propargyl alcohol	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P103 Selenourea		5/8/90	To be determined	Will be restricted in the Third Third rule
P104 Silver cyanide	ALL	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
P105 Sodium azide	ALL	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P106 Sodium cyanide	ALL	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
P107 Strontium sulfide	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
P108 Strychnine and salts	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOLIS WASTE CODE

Waste Code 1,2 Type^{3,4,6} Type of Restriction **Dates Restricted** Comments P109 All, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised Tetraethyldithiopyrophosphate Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Soft harmer provisions⁵ 8/8/88 Effective until EPA sets P110 Tetraethyl lead treatment standards or May 8, 1990, when the hard hammer falls 6/8/89 Treatment Standards - specified technology Final, unless standards revised P111 All, except as noted below Tetraethylpyrophosphoramide Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Soft hammer provisions⁵ 6/8/89 Effective until EPA sets P112 treatment standards or May 8, Tetranitromethane 1990, when the hard hammer falls Soft harmer provisions³ 6/8/89 Effective until EPA sets P113 ALL treatment standards or May 8, Thallic oxide 1990, when the hard hammer falls _______ Soft harmer provisions⁵ P114 6/8/89 Effective until EPA sets treatment standards or May 8, Thallium (1) 1990, when the hard hammer falls selenite ______ Soft harmer provisions³ 8/8/88 Effective until EPA sets P115 ALL Thallium (1) treatment standards or May 8, 1990, when the hard hammer falls sul fate 5/8/90 To be determined Will be restricted in the Third P116 Third rule Thiosemicarbazide Will be restricted in the Third 5/8/90 To be determined Third rule Trichloromethanethiol Will be restricted in the Third 5/8/90 To be determined P119 Third rule Ammonium vanadate Soft hammer provisions Effective until EPA sets ALL 8/8/88 treatment standards or May 8. Vanadium 1990, when the hard harmer falls pentoxide

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

A-1(a).31 <u>Type</u>3,4,6 Waste Code^{1,2} Type of Restriction Dates Restricted Comments P121 ALL 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Zinc cyanide Soft hammer provisions P122 ALL 8/8/88 Effective until EPA sets Zinc phosphide. treatment standards or May 8. >10 percent 1990, when the hard hammer falls Soft harmer provisions⁵ P123 ALL 8/8/88 Effective until EPA sets Toxaphene treatment standards or May 8, 1990, when the hard hammer falls 5/8/90 To be determined Will be restricted in the Third Acetaldehyde Third rule Soft hammer provisions⁵ U002 ALL 6/8/89 Effective until EPA sets treatment standards or May 8. Acetone 1990, when the hard hammer falls Soft hammer provisions⁵ 6/8/89 Effective until EPA sets ALL Acetonitrile treatment standards or May 8, 1990, when the hard hammer falls Will be restricted in the Third U004 5/8/90 To be determined Third rule Acetophenone Soft hammer provisions⁵ U005 6/8/89 Effective until EPA sets ALL o-Acetylaminotreatment standards or May 8, 1990, when the hard hammer falls fluorene 5/8/90 U006 To be determined Will be restricted in the Third Acetyl chloride Third rule Soft harmer provisions⁵ 8/8/88 Effective until EPA sets **U007** ALL treatment standards or May 8. Acrylamide 1990, when the hard hammer falls Soft harmer provisions³ U008 ALL 6/8/89 Effective until EPA sets treatment standards or May 8. Acrylic acid 1990, when the hard harmer falls Effective until EPA sets U009 8/8/88 Soft hammer provisions ALL treatment standards or May 8. Acrylonitrile 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

<u>Type</u>3,4,6 Waste Code 1,2 Dates Restricted Type of Restriction Comments Soft harmer provisions⁵ U010 ALL 8/8/88 Effective until EPA sets Mitomycin C treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ U011 6/8/89 ALL Effective until EPA sets Amitrole treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ ALL 8/8/88 U012 Effective until EPA sets **Aniline** treatment standards or May 8, 1990, when the hard harmer falls 6/8/89 Soft harmer provisions U014 ALL Effective until EPA sets Auramine treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ U015 6/8/89 ALL Effective until EPA sets Azaserine treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions⁵ ALL 8/8/88 Effective until EPA sets Benz(c)acridine treatment standards or May 8. 1990, when the hard harmer falls U017 5/8/90 To be determined Will be restricted in the Third Renzal chloride Third rule Soft hammer provisions⁵ U018 ALL 8/8/88 Effective until EPA sets Benz(a)anthracene treatment standards or May 8, 1990, when the hard harmer falls 8/8/88 Soft hammer provisions⁵ U019 ALL Effective until EPA sets Benzene treatment standards or May 8, 1990, when the hard hammer falls U020 6/8/89 Soft hammer provisions⁵ ALL Effective until EPA sets Benzenesulfonyl treatment standards or May 8. chloride 1990, when the hard harmer falls U021 6/8/89 Soft harmer provisions Effective until EPA sets ALL treatment standards or May 8, Benzidine 1990, when the hard harmer falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

A-1(a).33_ Waste Code 1,2 Type^{3,4,6} **Dates Restricted** Type of Restriction Comments 8/8/88 Soft hammer provisions⁵ Effective until EPA sets U022 ALL Benzo(a)pyrene treatment standards or May 8. 1990, when the hard hammer falls 1023 6/8/89 Soft harmer provisions Effective until EPA sets Benzotrichloride treatment standards or May 8. 1990, when the hard hammer falls 5/8/90 Will be restricted in the Third To be determined 11024 Bis(2-chloro-Third rule ethoxy)methane 6/8/89 Soft hammer provisions U025 ALL Effective until EPA sets Dichloroethyl treatment standards or May 8. 1990, when the hard harmer falls ether 6/8/89 Soft harmer provisions Effective until EPA sets U026 ALL treatment standards or May 8. Chlornaphazine 1990, when the hard hammer falls Will be restricted in the Third 5/8/90 1027 To be determined Bis(2-chloroiso-Third rule propyl)ether All, except as noted below 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Bis(2-ethylhexyl) Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 phthalate Technology Requirements Soft hammer provisions⁵ 8/8/88 Effective until EPA sets U029 treatment standards or May 8, Methyl bromide 1990, when the hard hammer falls 5/8/90 Will be restricted in the Third U030 To be determined Third rule Benzene, 1-bromo-4-phenoxy 8/8/88 Soft hammer provisions Effective until EPA sets 11031 ALL treatment standards or May 8, n-Butanol 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA NAZARDOUS WASTE CODE

Waste Code 1,2 Type 3,4,6 **Dates Restricted** Type of Restriction Comments Soft harmer provisions⁵ **U032** ALL 6/8/89 Effective until EPA sets Calcium chromate treatment standards or May 8. 1990, when the hand harmer falls 5/8/90 To be determined Will be restricted in the Third Carbonyl fluoride Third rule 5/8/90 To be determined U034 Will be restricted in the Third Chloral Third rule Soft hammer provisions⁵ 6/8/89 11035 ALL Effective until EPA sets Chiorambucil treatment standards or May 8, 1990, when the hard harmer falls ALL . Soft harmer provisions 8/8/88 Effective until EPA sets 11036 treatment standards or May 8. Chiordane. technical 1990, when the hard hammer falls Soft harmer provisions All 8/8/88 Effective until EPA sets U037 treatment standards or May 8. Chil or obenzene 1990, when the hard harmer falls 5/8/90 Will be restricted in the Third U038 To be determined Ethyl-4-4-di-Third rule chlorobenzilate **U039** 5/8/90 To be determined Will be restricted in the Third Third rule 4-Chloro-m-cresol U041 8/8/88 Soft hammer provisions³ ALL Effective until EPA sets n-Chloro-2,3treatment standards or May 8. 1990, when the hard hammer falls epoxypropene U042 5/8/90 Will be restricted in the Third To be determined Vinyl ether 2-Third rule chloroethyl ALL 8/8/88 Soft harmer provisions Effective until EPA sets treatment standards or May 8, Vinyl chloride 1990, when the hard hanner falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA MAZARDOUS WASTE CODE

A-1(a).35 Type^{3,4,6} Waste Code 1,2 Dates Restricted Type of Restriction Comments **U044** All 8/8/88 Soft hammer provisions⁵ Effective until EPA sets Chloroform treatment standards or May 8. 1990, when the hard hammer falls U045 Will be restricted in the Third 5/8/90 To be determined Methyl chloride Third rule Soft hammer provisions Effective until EPA sets U046 ALL 8/8/88 Chloromethyl treatment standards or May 8. methyl ether 1990, when the hard harmer falls U047 Soft hammer provisions Effective until EPA sets ALL 6/8/89 treatment standards or May 8. Beta-chloronaphthal ene 1990, when the hard hammer falls U048 5/8/90 Will be restricted in the Third o-Chlorophenol Third rule U049 Soft hammer provisions Effective until EPA sets ALL 6/8/89 4-Chloro-otreatment standards or May 8. toluidine, 1990, when the hard hammer falls hydrochloride U050 Soft harmer provisions Effective until EPA sets ALL 8/8/88 treatment standards or May 8. Chrysene 1990, when the hard harmer falls Soft harmer provisions U051 ALL 8/8/88 Effective until EPA sets treatment standards or May 8. Creosote 1990, when the hard harmer falls U052 5/8/90 Will be restricted in the Third To be determined Third rule Cresols Effective until EPA sets ALL 8/8/88 Soft hammer provisions treatment standards or May 8, Crotonaldehyde 1990, when the hard harmer falls Will be restricted in the Third U055 5/8/90 Third rule Cumene U056 Will be restricted in the Third 5/8/90 To be determined Third rule Cyclohexane

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR FACH RCRA HAZAROCUS WASTE CODE

A-1(a).36 Type^{3,4,6} Waste Code 1,2 **Dates Restricted** Type of Restriction Comments Soft harmer provisions⁵ **U057** ALL 6/8/89 Effective until EPA sets Cycl ohexanone treatment standards or May 8, 1990, when the hard hammer falls Treatment Standards - specified technology All, except as noted below 6/8/89 final, unless standards revised Cyclophosphamide Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Soft harmler provisions⁵ 6/8/89 Effective until EPA sets Daunomycin treatment standards or May 8, 1990, when the hard hammer falls Soft harmer provisions⁵ U060 ALL 6/8/89 Effective until EPA sets DDD treatment standards or May 8. 1990, when the hard hammer falls 8/8/88 Soft harmer provisions⁵ U061 ALL Effective until EPA sets DOT treatment standards or May 8. 1990, when the hard hammer falls Soft harmer provisions 10062 ALL 6/8/89 Effective until EPA sets Diallate treatment standards or May 8, 1990, when the hard harmer falls U063 ALL 8/8/88 Soft harmer provisions⁵ Effective until EPA sets treatment standards or May 8, Dibenzo(a,h) anthracene 1990, when the hard harmer falls U064 8/8/88 Soft harmer provisions³ ALL Effective until EPA sets 1,2,7,8 Dibenzotreatment standards or May 8, 1990, when the hard hammer falls pyrene 8/8/88 Soft hammer provisions⁵ U066 ALL Effective until EPA sets treatment standards or May 8, Dibromo-3-chloro-1990, when the hard harmer falls propene 1,2 Soft harmer provisions⁵ Effective until EPA sets U067 ALL 8/8/88 Ethylene treatment standards or May 8, 1990, when the hard hammer falls dibromide U068 5/8/90 To be determined Will be restricted in the Third Third rule Methane, dibromo

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued) TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Waste Code ^{1,2}	Туре ^{3,4,6}	Dates Restricted	Type of Restriction	Connents
1069	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
Dibutyl phthalate	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
0070 o-Dichlorobenzene	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u071 m-Dichlorobenzene		5/8/90	To be determined	Will be restricted in the Third Third rule
U072 p-Dichlorobenzene		5/8/90	To be determined	Will be restricted in the Third Third rule
U073 Dichtorobenzidene 3,3-	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u074 1,4-Dichloro-2- butene	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U075 Dichlorodifluoro- methane		5/8/90	To be determined	Will be restricted in the Third Third rule
U076 Ethane, 1,1- dichloro-		5/8/90	To be determined	Will be restricted in the Third Third rule
U077 Ethane, 1,2- dichloro	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U078 Dichloroethylene, 1,1-	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U079 1,2-Dichloro- ethylene		5/8/90	To be determined	Will be restricted in the Third Third rule

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA MAZARDOUS WASTE CODE

Type^{3,4,6} Waste Code^{1,2} **Dates Restricted** Type of Restriction Comments Soft harmer provisions U080 ALL 6/8/89 Effective until EPA sets treatment standards or May 8, **Methylene** 1990, when the hard hammer falls chloride 5/8/90 To be determined Will be restricted in the Third U081 Third rule 2.4-Dichlorophenol Will be restricted in the Third 5/8/90 To be determined U082 2,6-Dichloro-Third rule phenol 6/8/89 Soft harmer provisions Effective until EPA sets U083 treatment standards or May 8, Dichloropropane, 1990, when the hard hammer falls 1,2-5/8/90 Will be restricted in the Third U084 To be determined Third rule 1.3-Dichloropropene 5/8/90 To be determined Will be restricted in the Third U085 Third rule 2,2-Bioxirane 8/8/88 Soft harmer provisions³ ALL Effective until EPA sets U086 N.N Diethylhydratreatment standards or May 8, 1990, when the hard hammer falls zine U087 All, except as noted below 6/8/89 Treatment Standards - specified technology Final, unless standards revised 0.0-Diethyl-S-6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 methyl-dithio-Soil and debris phosphate Technology Requirements **U088** All, except as noted below 6/8/89 Treatment Standards - concentration levels Final, unless standards revised Diethyl phthalate Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements Soft hammer provisions⁵ 8/8/88 Effective until EPA sets U089 ALL treatment standards or May 8. Diethylstil-1990, when the hard harmer falls bestrol Will be restricted in the Third 5/8/90 To be determined Third rule Dihydrosafrole

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).39 Type^{3,4,6} Waste Code^{1,2} **Dates Restricted** Type of Restriction Comments 5/8/90 To be determined Will be restricted in the Third U091 3.3 Dimethoxyben-Third rule zidine ALL 6/8/89 Soft harmer provisions Effective until EPA sets 13092 treatment standards or May 8. Dimethylamine 1990, when the hard hammer falls 6/8/89 Soft harmer provisions Effective until EPA sets ALL treatment standards or May 8. Dimethylaminoazo-1990, when the hard harmer falls benzene 6/8/89 Soft hammer provisions Effective until EPA sets 11004 ALL treatment standards or May 8. Dimethylbenz(a) anthracene, 7, 12-1990, when the hard hammer falls 11095 ALL 6/8/89 Soft hammer provisions Effective until EPA sets treatment standards or May 8. Dimethylbenzi-1990, when the hard hammer falls dine.3.3-5/8/90 To be determined Will be restricted in the Third U096 Third rule alpha, alpha-Dimethylbenzylhydroxyperoxide U097 ALL 6/8/89 Soft hammer provisions Effective until EPA sets treatment standards or May 8. Dimethylcarbamoyl 1990, when the hard hammer falls chloride Soft hammer provisions 6/8/89 Effective until EPA sets U098 ALL treatment standards or May 8. Dimethylhydrazine 1990, when the hard hammer falls 1.1-Soft hammer provisions U099 ALL 6/8/89 Effective until EPA sets treatment standards or May 8. Dimethylhydrazine 1990, when the hard hammer falls 1.2-6/8/89 Soft hammer provisions Effective until EPA sets **U101** ALL treatment standards or May 8. Dimethylphenol, 1990, when the hard hammer falls 2,4-

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LOR RESTRICTION IN EFFECT FOR EACH RORA HAZAROOUS WASTE CODE

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Connents
U102 Dimethyl	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
chthalate	Soil and debris	6/8/89	National Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
U103 Dimethyl sulfates	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
J105 2,4-Dinitro- toluene	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
0106 Dinitrotoluene, 2,6-	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
1107 11-n-octyl	All, except as noted below	6/8/89	Treatment Standards - concentration levels	Final, unless standards revised
phthalate	Soil and debris	6/8/89	Mational Capacity Extension/Minimum Technology Requirements	Extension expires June 8, 1991
u108 Dioxane, 1,4-	ALL	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U109 1,2-Diphenyl- hydrazine	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U110 Dipropylamine	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U111 Di-N- Propylnitrosamine	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U112 Ethyl acetate		5/8/90	To be determined	Will be restricted in the Third Third rule
U113 Ethyl acrylate		5/8/90	To be determined	Will be restricted in the Third Third rule

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).41 Waste Code 1,2 Type^{3,4,6} Type of Restriction Dates Restricted Comments Soft hammer provisions⁵ U114 ALL 6/8/89 Effective until EPA sets Ethylenebistreatment standards or May 8. (dithiocarbamic 1990, when the hard hammer falls acid) 8/8/88 Soft harmer provisions³ u115 Effective until EPA sets treatment standards or May 8. Ethylene oxide 1990, when the hard hammer falls 6/8/89 Soft harmer provisions⁵ 11116 Effective until EPA sets Ethylene thiourea treatment standards or May 8, 1990, when the hard harmer falls Will be restricted in the Third U117 Third rule Ethyl ether 5/8/90 To be determined Will be restricted in the Third Third rule Ethylmethacrylate 6/8/89 Soft harmer provisions⁵ U119 ALL Effective until EPA sets Ethyl Methanesultreatment standards or May 8. 1990, when the hard harmer falls 5/8/90 Will be restricted in the Third 11120 Fluoranthene Third rule 5/8/90 To be determined Will be restricted in the Third U121 Third rule Trichloromonofluoromethane U122 ALL 8/8/88 Soft harmer provisions Effective until EPA sets treatment standards or May 8, Formal dehyde 1990, when the hard harmer falls 5/8/90 Will be restricted in the Third U123 To be determined Formic acid Third rule Soft harmer provisions⁵ 8/8/88 Effective until EPA sets U124 ALL treatment standards or May 8. Furan 1990, when the hard hammer falls Will be restricted in the Third 5/8/90 To be determined ALL u125 Third rule Furfurat

^{*} Restriction in effect only for period noted.

A-1(a).42

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA NAZARDOUS WASTE CODE

Weste Code 1,2 Type^{3,4,6} Type of Restriction **Dates Restricted** Comments 5/8/90 To be determined U126 Will be restricted in the Third Glycidylaldehyde Third rule Soft harmer provisions 6/8/89 U127 ALL Effective until EPA sets treatment standards or May 8, Hexachloro-1990, when the hard hammer falls benzene 6/8/89 Soft hammer provisions⁵ ALL Effective until EPA sets U128 treatment standards or May 8, Hexachlorobuta-1990, when the hard hammer falls diene Soft harmer provisions⁵ 8/8/88 ALL Effective until EPA sets U129 treatment standards or May 8, Lindane 1990, when the hard hammer falls 8/8/88 Soft hammer provisions Effective until EPA sets U130 ALL treatment standards or May 5. Hexachlorocyclopentadiene 1990, when the hard harmer falls Soft harmer provisions⁵ 6/8/89 Effective until EPA sets treatment standards or May 8. **Hexachloroethane** 1990, when the hard hammer falls u132 5/8/90 To be determined Will be restricted in the Third Third rule Hexach Lorophene Soft hammer provisions⁵ u133 ALL 8/8/88 Effective until EPA sets treatment standards or May 8, Hydrazine 1990, when the hard harmer falls Soft hammer provisions 11134 ALL 8/8/88 Effective until EPA sets treatment standards or May 8, Hydrofluoric acid 1990, when the hard harmer falls 6/8/89 Soft harmer provisions ALL Effective until EPA sets บ135 treatment standards or May 8. Hydrogen sulfide 1990, when the hard hammer falls Will be restricted in the Third 5/8/90 To be determined U136 Third rule Cacodylic acid

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).43 Type^{3,4,6} Waste Code 1,2 **Dates Restricted** Type of Restriction Comments U137 ALL 8/8/88 Soft hammer provisions⁵ Effective until EPA sets Indeno (1.2.3-cd) treatment standards or May 8. pyrene 1990, when the hard hammer falls **U138** Soft hammer provisions ALL 6/8/89 Effective until EPA sets Methyl iodide treatment standards or May 8. 1990, when the hard hammer falls Will be restricted in the Third Iron dextran Third rule U140 ALL 6/8/89 Soft hammer provisions⁵ Effective until EPA sets Isobutyl alcohol treatment standards or May 8, 1990, when the hard hammer falls U141 5/8/90 To be determined Will be restricted in the Third Isosafrole Third rule 11142 Soft hammer provisions⁵ 6/8/89 Effective until EPA sets Kepone treatment standards or May 8, 1990, when the hard hammer falls U143 Soft hammer provisions ALL 6/8/89 Effective until EPA sets Lasiocarpine treatment standards or May 8, 1990, when the hard hammer falls U144 Soft harmer provisions⁵ ALL 6/8/89 Effective until EPA sets Lead acetate treatment standards or May 8, 1990, when the hard hammer falls U145 5/8/90 To be determined Will be restricted in the Third Lead phosphate Third rule U146 6/8/89 Soft hammer provisions⁵ ALL Effective until EPA sets Lead subacetate treatment standards or May 8, 1990, when the hard harmer falls U147 ALL 6/8/89 Soft harmer provisions Effective until EPA sets Maleic anhydride treatment standards or May 8, 1990, when the hard harmer falls 11148 5/8/90 To be determined Will be restricted in the Third Maleic hydrazide Third rule

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA NAZARDOUS WASTE CODE

Waste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Connects
u149 Malononitrile	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u150 Melphalan	ALL	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u151 Mercury	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u152 Methacrylonitrile		5/8/90	To be determined	Will be restricted in the 4hird Third rule
y153 Methanethiol		5/8/90	To be determined	Will be restricted in the Third Third rule
y154 Methanol	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or Hay 8, 1990, when the hard hammer falls
U155 Methapyrilene	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U156 Methyl chlorocarbonate		5/8/90	To be determined	Will be restricted in the Third Third rule
u157 3-Methylchol- anthrene	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
u158 4,4-Methylene- bis-(2-chloro- aniline)	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U159 Methyl ethyl ketone	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE A-1(a)_45 <u>Type</u>3,4,6 Waste Code^{1,2} **Dates Restricted** Type of Restriction Connents U160 5/8/90 To be determined Will be restricted in the Third Methyl ethyl Third rule ketone peroxide U161 6/8/89 Soft hammer provisions Effective until EPA sets Methyl isobutyl treatment standards or May 8, 1990, when the hard hammer falls ketone Soft harmer provisions⁵ U162 ALL 6/8/89 Effective until EPA sets Methyl treatment standards or May 8, methacrylate 1990, when the hard hammer falls U163 ALL 6/8/89 Soft harmer provisions⁵ Effective until EPA sets N-Methyl-N-nitrotreatment standards or May 8, 1990, when the hard hammer falls N-nitrosoguanidine U164 ALL 6/8/89 Soft harmer provisions⁵ Effective until EPA sets Methylthiouracil treatment standards or May 8, 1990, when the hard harmer falls U165 Soft harmer provisions⁵ 6/8/89 Effective until EPA sets Naphthalene treatment standards or May 8, 1990, when the hard hammer falls. U166 5/8/90 To be determined Will be restricted in the Third 1.4-Third rule **Naphthaquinone** U167 Will be restricted in the Third 5/8/90 To be determined 1-Naphthyliamine Soft harmer provisions⁵ U168 ALL 6/8/89 Effective until EPA sets treatment standards or May 8, Napthylamine, 2-1990, when the hard hammer falls U169 All 6/8/89 Soft harmer provisions Effective until EPA sets treatment standards or May 8, Nitrobenzene 1990, when the hard hammer falls U170 Soft harmer provisions Effective until EPA sets 6/8/89 treatment standards or May 8, p-Nitrophenol 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

Type^{3,4,6} Waste Code^{1,2} Type of Restriction **Dates Restricted** Comments **U171** Soft harmer provisions⁵ ALL 8/8/88 Effective until EPA sets Nitropropane, 2treatment standards or May 8. 1990, when the hard hammer falls Soft hammer provisions⁵ 6/8/89 U172 ALL Effective until EPA sets N-nitroso-di-ntreatment standards or May 8. butylamine 1990, when the hard hammer falls **U173** 6/8/89 Soft hammer provisions⁵ Effective until EPA sets ALL treatment standards or May 8. N-nitrosodiethanolamine 1990, when the hard hammer falls ************ Soft hammer provisions⁵ U174 6/8/89 Effective until EPA sets N-nitrosotreatment standards or May 8. diethylamine 1990, when the hard hammer falls U176 6/8/89 Soft hammer provisions Effective until EPA sets All N-Nitroso-Ntreatment standards or May 8, 1990, when the hard harmer falls ethylurea Soft harmer provisions⁵ U177 ALL 8/8/88 Effective until EPA sets N-Nitroso-Ntreatment standards or May 8. methylurea 1990, when the hard harmer falls **U178** Soft harmer provisions⁵ ALL 6/8/89 Effective until EPA sets treatment standards or May 8. N-Nitroso-Nmethylurethane 1990, when the hard harmer falls U179 Soft harmer provisions⁵ 6/8/89 Effective until EPA sets N-Witrosopiperitreatment standards or May 8, dine 1990, when the hard harmer falls U180 Soft hammer provisions⁵ Effective until EPA sets 8/8/88 ALL N-Nitrosopyrroltreatment standards or May 8. idine 1990, when the hard harmer falls To be determined Will be restricted in the Third U181 5/8/90 5-Nitro-o-Third rule toluidine Will be restricted in the Third 5/8/90 To be determined Third rule Paral dehyde

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA NAZARDOUS WASTE CODE

A-1(a).47 Type^{3,4,6} Waste Code 1,2 Dates Restricted Type of Restriction Comments U183 5/8/90 To be determined Will be restricted in the Third Pentachloro-Third rule benzene U184 5/8/90 Will be restricted in the Third Third rule Pentachloroethane U185 8/8/88 Soft hammer provisions Effective until EPA sets Pentachloroni trotreatment standards or May 8. benzene 1990, when the hard hammer falls U186 5/8/90 To be determined Will be restricted in the Third 1,3-Pentadiene Third rule U187 Will be restricted in the Third Phenacetin Third rule ALL 8/8/88 Effective until EPA sets Phenol treatment standards or May 8, 1990, when the hard hammer falls Effective until EPA sets 6/8/89 Soft harmer provisions **Phosphorus** treatment standards or May 8. sulfide 1990, when the hard harmer falls U190 Treatment Standards - concentration levels Final, unless standards revised All, except as noted below 6/8/89 Phthalic anhydride Soil and debris 6/8/89 National Capacity Level/Minimum Technology Extension expires June 8, 1991 Requirements U191 Will be restricted in the Third 2-Picoline Third rule U192 Soft harmer provisions Effective until EPA sets ALL 8/8/88 treatment standards or May 8, Pronamide 1990, when the hard hammer falls U193 Soft harmer provisions Effective until EPA sets All 6/8/89 treatment standards or May 8, 1,3-Propane sul tone 1990, when the hard harmer falls Will be restricted in the Third **U194** 5/8/90 To be determined Third rule 1-Propenamine

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOLIS WASTE CODE

A-1(a).48 Type^{3,4,6} Waste Code 1,2 **Dates Restricted** Type of Restriction: Comments **U196** ALL 6/8/89 Soft hammer provisions⁵ Effective until EPA sets Pyridine treatment standards or May 8. 1990, when the hard harmer falls Will be restricted in the Third 11107 5/8/90 to be determined p-Benzoquinone Third rule Soft harmer provisions Effective until EPA sets U200 ALL 8/8/88 treatment standards or May 8. Reservine 1990, when the hard harmer falls To be determined Will be restricted in the Third 5/8/90 third rule Resorcinol 11202 Will be restricted in the Third 5/8/90 To be determined Third rule Saccharin & salts U203 6/8/89 Soft hammer provisions⁵ Effective until EPA sets ALL Safrole treatment standards or May 8. 1990, when the hard harmer falls U204 5/8/90 Will be restricted in the Third To be determined Third rule Selenious acid U205 Soft hammer provisions Effective until EPA sets ALL 6/8/89 Setenium treatment standards or May 8. disulfide 1990, when the hard harmer falls Soft hammer provisions U206 ALL 6/8/89 Effective until EPA sets Streptozotocin treatment standards or May 8. 1990, when the hard hammer falls 1/207 Will be restricted in the Third 5/8/90 To be determined 1,2,4,5-tetra-Third rule ch l orobenzene Effective until EPA sets U208 Soft hammer provisions ALL 6/8/89 Terachloroethane, treatment standards or May 8. 1990, when the hard hammer falls 1,1,1,2-U209 8/8/88 Soft harmer provisions Effective until EPA sets All treatment standards or May 8. Tetrachloro-1990, when the hard harmer falls ethane, 1,1,2,2-

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

laste Code ^{1,2}	Type ^{3,4,6}	Dates Restricted	Type of Restriction	Connects
J210 Tetrachloro- ethylene	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or Hay 8, 1990, when the hard hammer falls
J211 Carbon Letrachloride	ALL	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
1213 Tetrahydrofuran	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
7214 (hallium (1) ocetate chloride nitrate	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
1215 Thallium (I) carbonate	Att	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
J216 Thallium (1) chloride	Att	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
1217 Thailium (1) nitrate	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
1218 Thioacetamide	All	6/8/89	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
J219 Ihiourea	All	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls
U220 Toluene	Att	8/8/88	Soft hammer provisions ⁵	Effective until EPA sets treatment standards or May 8, 1990, when the hard hammer falls

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

A-1(a).50 Waste Code 1,2 Type^{3,4,6} Dates Restricted Type of Restriction Connents U221 All, except as noted below Treatment Standards - specific technology Final, unless standards revised 6/8/89 Toluenediamine *8/8/88 -Soft hammer provisions⁵ 6/8/89 Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8, 1991 Technology Requirements U222 Will be restricted in the Third 5/8/90 To be determined o-Toluidine Third rule hydrochloride **U223** All, except as noted below 6/8/89 Treatment Standards - specific technology Final, unless standards revised Toluene Soft hammer provisions⁵ *8/8/88 diisocyanate 6/8/89 Soil and debris 6/8/89 National Capacity Extension/Minimum Extension expires June 8,1991 Technology Requirements U225 To be determined 5/8/90 Will be restricted in the Third Bromotorm Third rule **U226** Soft harmer provisions⁵ 8/8/88 Effective until EPA sets All Methylchloroform treatment standards or May 8, 1990, when the hard hammer falls U227 8/8/88 Soft harmer provisions⁵ Effective until EPA sets ALL Trichloroethane. treatment standards or May 8, 1,1,2-1990, when the hard harmer failts U228 Soft hammer provisions⁵ 8/8/88 ALL Effective until EPA sets Trichloroethylene treatment standards or May 8. 1990, when the hard hammer falls 11234 5/8/90 Will be restricted in the Third To be determined Sym-Trinitro-Third rule benzene LJ235 Treatment Standards - concentration levels Final, unless standards revised All, except as noted below 6/8/89 Tris (2.3-Extension expires June 8, 1991 Dibromopropyl) Soil and debris 6/8/89 National Capacity Extension/Minimum phosphate Technology Requirements

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (a) (continued)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA HAZARDOUS WASTE CODE

A-1(a).51 Type^{3,4,6} Waste Code 1,2 Dates Restricted Type of Restriction Comments 11234 5/8/90 To be determined Will be restricted in the Third Third rule Trypen blue U237 All 8/8/88 **Effective until EPA sets** treatment standards or May 8. Uracil mustard 1990, when the hard hammer falls Soft harmer provisions Effective until EPA sets 8/8/88 Ethyl carbamate treatment standards or May 8, 1990, when the hard harmer falls Soft harmer provisions⁵ U239 6/8/89 Effective until EPA sets treatment standards or May 8, Xvlene 1990, when the hard harmer falls U240 5/8/90 To be determined Will be restricted in the Third 2,4-D salts & Third rule esters U243 5/8/90 To be determined Will be restricted in the Third Hexach Loropropene Third rule U244 6/8/89 Soft harmer provisions Effective until EPA sets ALL Thiram treatment standards or May 8, 1990, when the hard harmer falls U246 5/8/90 Will be restricted in the Third To be determined Third rule Cyanogen bromide U247 To be determined Will be restricted in the Third Methoxychtor Third rule Effective until EPA sets U248 ALL 8/8/88 Soft harmer provisions treatment standards or May 8. Warfarin, <0.3 1990, when the hard harmer falls percent U249 ALL 8/8/88 Soft harmer provisions Effective until EPA sets Zinc phosphide, treatment standards or May 8, 1990, when the hard hammer falls <10 percent

^{*} Restriction in effect only for period noted.

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA HAZARDOUS WASTE CODE

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ENDNOTES

- Appendices A-2 (F001-F005, F020-F023, and F026-F028) and A-4 (First and Second Third wastes) provide complete waste code descriptions and, where
 appropriate, complete explanation of treatment standards and BDAT.
- 2. If a Superfund site contains a RCRA listed or characteristic hazardous waste, the site manager should also determine whether the wastes is a California list waste. The restrictions on California list wastes are summarized in Appendix A-1(b).
- 3. EPA considers "wastewaters" to be wastes containing less than one percent total organic carbon (TOC) and less than one percent total filterable solids. All other substances are "nonwastewaters."
- 4. Soil and debris wastes are subject to restrictions listed under the category "nonwastewaters", except where noted otherwise.
- 5. Under the soft hammer provisions, wastes may be land disposed in a landfill or surface impoundment only if: (1) the disposal unit meets RCRA minimum technology requirements; and (2) the generator investigates treatment options and, when treatment is practically available, uses the best treatment. Wastes may be disposed in waste piles or land treatment units without restriction (except soft hammer notification requirements).
- 6. This table does not reflect that the following will be restricted in the Third Third rule:
 - -- Wastewater residues (less than 1% total organic carbon and less than 1% total suspended solids) resulting from the following well-designed and well-operated treatment methods for wastes listed in sections 268.10 and 268.11 for which EPA has not promulgated wastewater treatment standards; metals recovery, metals precipitation, cyanide destruction, carbon adsorption, chemical oxidation, steam stripping, biodegradation and incineration or other direct thermal destruction. (268.12 (b))
 - -- Mazardous wastes listed in sections 268.10 and 268.11 that are mixed hazardous/radioactive wastes (268.12(b))
 - -- Multi-source Leachate that is derived from Hazardous Wastes F020, F021, F022, F023, F026, F027, or F028 (268,12(b))
- 7. This waste was newly listed on October 23, 1985. EPA is required to set LDR treatment standards for these wastes within 6 months of the date of listing, but no hammer provisions apply.
- 8. This waste was newly listed on February 13, 1986. EPA is required to set LDR treatment standards for these wastes within 6 months of the date of listing, but no hammer provisions apply.
- 9. This waste was newly listed on October 24,1986. EPA is required to set LDR treatment standards for these wastes within 6 months of the date of listing, but no hammer provisions apply.

^{*} Restriction in effect only for period noted.

APPENDIX A-1 (b)

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RCRA CALIFORNIA LIST MASTES

A-1(b).1

Waste Code ¹	Туре ^{2,3}	Dates Restricted	Type of Restriction	Connents
California List wastes	Liquid RCRA hazardous waste containing <u>free</u> <u>Cyanides</u> in concentrations greater than 1000 mg/l	7/8/87	None - hard hammer restrictions apply	
	Liquid RCRA hazardous waste containing metals in concentrations greater than: 500 mg/l for arsenic, 100 mg/l for lead, 500 mg/l for chromium VI, 500 mg/l for lead, 20 mg/l for mercury, 134 mg/l for nickel, 100 mg/l for selenium, and 130 mg/l for thallium	7/8/87	None - hard hammer restrictions apply	
	Liquid RCRA hazardous waste that is a <u>corrosive</u> waste with a pH less than or equal to 2.0	7/8/87	None - Codified prohibtion levels	
	Liquid RCRA hazardous waste containing <u>PCBs</u> in concentrations greater than or equal to 50 ppm	7/8/87	Treatment standard - specified technology	
	RCRA hazardous waste containing <u>halogenated</u> <u>organic compounds (HOCs)⁴</u> that are:	••••••		·
	Dilute wastewaters greater than or equal to 1000 mg/l but less than 10,000 mg/l	7/8/87	Codified prohibition levels	
	Liquid hazardous wastes and non-tiquids greater than or equal to 1000 mg/kg	8/8/88	Treatment standard - specified technology	

TYPE OF LDR RESTRICTION IN EFFECT FOR EACH RORA NAZARDOUS WASTE CODE

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laste Code ^{1,2}	Type ^{3,4}	Dates Restricted	Type of Restriction	Comments	
	RCRA/CERCLA soil and debris greater than or	11/8/88 - 11/8/90	National capacity extension in effect until November 8, 1990		
	equal to 1000 mg/kg	11/8/90	Final - Codified prohibition levels		
	RCRA hazardous waste containing <u>halogenated</u> organic compounds (HOCs) ⁴ that are:				
	Won-RCRA/CERCLA soit and debris greater than or	7/8/87 - 7/8/89	Minimum Technology Requirements	National capacity extension in effect until July 8, 1989	
	equal to 1000 mg/kg	7/8/89	Treatment standard - specified technology		

- 1. Appendix A-2 provides complete waste code descriptions and, where appropriate, complete explanation of treatment standards and BDAT.
- 2. EPA considers "Wastewaters" to be wastes containing less than one percent total organic carbon (TOC) and less than one percent total filterable solids. All other substances are "nonwastewaters."
- 3. Soil and debris wastes are subject to restrictions listed under the category "nonwastewaters", except where noted otherwise.
- 4. See Appendix !!! to 40 CFR Part 268 for a list of HOCs used to calculate whether a waste contains greater than 1,000 mg/kg of HOCs.

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

AUGUST 1989

riaste				Concentration e Grab Sample	- Best Demonstrated Treatment Technology	1
Code	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date1
F006	Wastewater treatment sludges from	Nonwastewaters			Alkaline chlorination for amenable and total cyanides; stabilization of	August 8, 1988; Standard for
	electroplating operations except from the following processes:	Cyanide (Total)	590	NA ²	metals.	cyanide effec-
	(1) sulfuric acid anodizing of	Cyanide (10car)	370	МА	metals.	tive July 8,
	aluminum; (2) tin plating on	(Amenable)	30	NA		1989
	carbon steel; (3) zinc plating	Cadmium (Total)	NA	0.066		
	(segregated basis) on carbon steel;	Chromium (Total)	NA	5,2		
	(4) aluminum or zinc-aluminum	Lead	NA	0.51		
	plating on carbon steel;	Nickel	NA	0.32		
	(5) cleaning/stripping associated with tin, zinc, and aluminum	Silver	NA	0.072		
	plating on carbon steel; and (6) chemical etching and milling	Wastewaters			~~	August 8, 1988
	of aluminum.	No BDAT treatment	•	ulgated.		
		No BDAT treatment Soft hammer provi	•	ulgated.		• • • • • • • • •
 007			•	ulgated.	Alkaline chlorination for amenable and total cyanides; precipitation,	July 8, 1989 (Restricted as
 007	of aluminum. Spent cyanide plating solutions from	Soft hammer provi	•	ulgated.	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was
 07	of aluminum. Spent cyanide plating solutions from	Soft hammer provided the second secon	590	NA	and total cyanides; precipitation,	(Restricted as soft hammer was as of August 8,
 07	of aluminum. Spent cyanide plating solutions from	Soft hammer provided the second secon	590	na Na	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was
 07	of aluminum. Spent cyanide plating solutions from	Nonwastewaters Cyanides (Total) Cyanides (Amenable) Cadmium	590 30 NA	NA NA 0.066	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was as of August 8,
 107	of aluminum. Spent cyanide plating solutions from	Nonwastewaters Cyanides (Total) Cyanides (Amenable) Cadmium Chromium (Total)	Sions apply. 590 30 NA NA	NA NA 0.066 5.2	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was as of August 8,
 007	of aluminum. Spent cyanide plating solutions from	Nonwastewaters Cyanides (Total) Cyanides (Amenable) Cadmium Chromium (Total) Lead	590 30 NA NA	NA NA 0.066 5.2 0.51	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was as of August 8,
 107	of aluminum. Spent cyanide plating solutions from	Nonwastewaters Cyanides (Total) Cyanides (Amenable) Cadmium Chromium (Total)	Sions apply. 590 30 NA NA	NA NA 0.066 5.2	and total cyanides; precipitation, settling, filtration and stabilization	(Restricted as soft hammer was as of August 8,
 007	of aluminum. Spent cyanide plating solutions from	Soft hammer provided in the second se	Sions apply. 590 30 NA NA NA NA	NA NA 0.066 5.2 0.51 0.32	and total cyanides; precipitation, settling, filtration and stabilization of metals. Alkalina chlorination for amenable and total cyanides; precipitation, settling,	(Restricted as soft hammer was as of August 8, 1988) July 8, 1989
 07	of aluminum. Spent cyanide plating solutions from	Soft hammer provided in the second se	Sions apply. 590 30 NA NA NA NA	NA NA 0.066 5.2 0.51 0.32	and total cyanides; precipitation, settling, filtration and stabilization of metals. Alkalina chlorination for amenable and	(Restricted as soft hammer was as of August 8, 1988) July 8, 1989 (Restricted as soft hammer was
07	of aluminum. Spent cyanide plating solutions from	Soft hammer provided in the second se	Sions apply. 590 30 NA NA NA NA NA	NA NA 0.066 5.2 0.51 0.32 0.072	and total cyanides; precipitation, settling, filtration and stabilization of metals. Alkaline chlorination for amenable and total cyanides; precipitation, settling, filtration and sludge dewatering for	(Restricted as soft hammer was as of August 8, 1988) July 8, 1989 (Restricted as soft hammer was
 07	of aluminum. Spent cyanide plating solutions from	Soft hammer provided the state of the state	590 30 NA NA NA NA NA NA NA NA NA	NA NA 0.066 5.2 0.51 0.32 0.072	and total cyanides; precipitation, settling, filtration and stabilization of metals. Alkaline chlorination for amenable and total cyanides; precipitation, settling, filtration and sludge dewatering for	(Restricted as soft hammer was as of August 8, 1988) July 8, 1989 (Restricted as soft hammer was as of August 8,
 07	of aluminum. Spent cyanide plating solutions from	Nonwastewaters Cyanides (Total) Cyanides (Amenable) Cadmium Chromium (Total) Lead Nickel Silver Wastewaters Cyanides (Total) Cyanides (Amenable)	590 30 NA	NA NA 0.066 5.2 0.51 0.32 0.072 NA	and total cyanides; precipitation, settling, filtration and stabilization of metals. Alkaline chlorination for amenable and total cyanides; precipitation, settling, filtration and sludge dewatering for	(Restricted as soft hammer was as of August 8, 1988) July 8, 1989 (Restricted as soft hammer was as of August 8,

			Freetment Standa: Marimum	Concentration	•	
Waste		for Any Single Grab Sample		Best Demonstrated Treatment Technology	•	
Code	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date1
F008	008 Plating bath sludges from bottom of plating bath from electroplating	Nonwastewaters			Alkaline chlorination for amenable and total cyanides; precipitation, settling	July 8, 1989 (Restricted as a
	operations where cyanides are used in the process.	Cyanides (Total) Cyanides	590	NA	filtration, and stabilization for metals.	soft hammer wast
		(Amenable)	30	NA		1988)
		Cadmium	NA	0.066		
		Chromium (Total)	NA	5.2		
		Lead	NA	0.51		
		Nickel	NA	0.32		
		Silver	NA	0.072		
		Wastewaters			illustra ablaziontion for amenable and	Jule 8 1980
		Cymnides (Total) Cymnides	1.9	МА	Alkaline chlorination for amenable and total cyanides; precipitation, settling, filtration, and sludge dewatering for metals.	July 8, 1989 (Restricted as a soft hammer wast as of August 8, 1988)
		(Amenable)	0.10	NA		
		Chromium (Total)	0.32	NA.	movasa.	
		Load	0.04	NA		
		Nickel	0.44	NA		
F009	Spent stripping and cleaning bath solutions from electroplating	Norwastewaters	• • • • • • •		Alkaline chlorination, for amenable and total cyanides; precipitation, settling,	July 8, 1989 (Restricted as
	operations where cyanides are used.	Cyanides (Total Cyanides	590	NA	filtration, and stabilization for metals.	soft hammer was as of August 8,
		(Amenable)	30	NA AN		1988)
		Cadmium	MA	0.066		
		Chromium (Total)	RA	5.2		
		Lead .	NA	0.51		
		Nickel	NA	0.32		
		Silver	NA	0.072		
		<u> Wastewaters</u>			Alkaline chlorination, for amenable and total cyanides; precipitation, settling,	July 8, 1989 (Restricted as
		Cyanides (Total) Cyanides	1.9	МА	filtration, and sludge dewatering for metals.	soft hammer was as of August 8.
		(Amenable)	0.10	NA	me sare,	1988)
		Chromium (Total)		NA Con		··· = •
		Lead	0.04	NA		
		Nickel	0.44	NA		

		Treatment Standards			-	
J4-		Maximum Concentration for Any Single Grab Sample		Best Demonstrated Treatment Technology		
Vaste Code	Description	Constituent	Total (mg/kg or mg/l)	TCLF (mg/1)	Used As Basis for Standards	Effective Date
010	Quenching bath residues from oil baths from metal heat treating	Nonwastewaters			Incineration.	June 8, 1989
	operations where cyanides are used in the process.	Cyanides (Total)	1.5	NA		
	-	Wastewaters			Alkaline chlorination for amenable and total cyanides; precipitation, settling,	June 8, 1989
		Cyanides (Total) Cyanides	1.9	NA	filtration, and sludge dewatering for metals.	
		(Amenable)	0.10	NA	_	
 011	Spent cyanide solutions from salt	Konwastewaters			Electrolytic oxidation followed by	July 8, 1989
	bath pot cleaning from metal heat treating operations.	Cyanides (Total)	110*	NA	alkaline chlorination for amenable and total cyanides; precipitation, settling,	•
		Cyanides (Amenable)	9.1*		stabilization of metals.	
		Cadmium	na	0.066		
		Chromium (Total)	NA	5.2		
		Lead	NA	0.51		
		Nickel	NA	0.32		
		Silver	NA	0.072		
		Wastewaters			Alkaline chlorination for amenable and total cyanides; precipitation, settling,	July 8, 1989
		Cyanides (Total) Cyanides	1.9	NA	filtration, and sludge dewatering for metals.	••
		(Amenable)	0.10	NA		
		Chromium (Total)	0.32	NA		
		Lead	0.04	NA		
		Nickel	0.44	NA		
12	Quenching wastewater treatment	Nonwastewaters			Electrolytic oxidation followed by alkaline chlorination for amenable and	July 8, 1989
	sludges from metal heat treating operations where cyanides are used in the process.	Cyanides (Total) Cyanides	110*	NA	total cyanides; precipitation, settling, stabilization of metals.	
	uned the che process.	(Amenable)	9.1*	NA	scanilization of madais.	
		Cadmium	NA	0.066		
		Chromium (Total)	NA.	5.2		
		Lead	NA.	0.51		
		Nickel	NA.	0.32		
		Silver	NA.	0.072		

^{*} From July 8, 1989 through December 8, 1989, must meet cyanide standards for F007-F009 (i.e. 590 mg/kg for total cyanides and 30 mg/kg for amenable cyanides)

APPENDIX A-4
TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

Waste Code	Description	Constituent	for Any Singl	ards n Concentration le Grab Sample TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1	
			or mg/l)				
F012	(continued)	Wastewaters			Alkaline chlorination for amenable and total cyanides; precipitation, settling,	July 8, 1989	
		Cyanides (Total) Cyanide	1.9	NA	filtration, and sludge dewatering for metals.		
		(Amenable)	0.10	NA			
		Chromium (Total)	0.32	NA			
		Lead	0.04	NA			
		Nickel	0.44	NA			
F019	Wastewater treatment sludges from	Nonwastewaters				August 8, 1988	
	the chemical conversion coating of aluminum.	No BDAT treatment Soft hammer provide	-	missted.			
		<u>Wastewaters</u>				August 8, 1988	
		No BDAT treatment Soft hammer provide	•	nulgated.			

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

A-4.5

		Tre	eatment Standa			
114 -				Concentration	Don't Donorstant of Tourstant Toutsulous	
Waste Code	Description	Constituent	for Any Singl Total (mg/kg or mg/l)		Best Demonstrated Treatment Technology Used As Basis for Stendards	
F024	Wastes, including, but not limited to, distillation residues,	Nonwastewaters			Incineration.	June 8, 1989
	heavy ends, tars, and reactor	Chromium (Total)	NA	Reserved		
	cleanout wastes from the	Nickel (Total)	MA	Reserved		
	production of chlorinated aliphatic	2-Chlore-1,3				
	hydrocarbons, having carbon content	-butadiene	0.28	NA		
	from one to five, utilizing free	3-Chloropropens	0.28	NA		
	radical catalyzed processes. (This	1,1-Dichloroethane	0.014	NA		
	list does not include light ends,	1,2-Dickloroethane	0.014	NA		
	spent filters and filter mids,	1,2-Dichloropropane	0.014	MA		
	spent desiccants, wastewater,	cis-1,3-		*		
	wastewater treatment sludges, spent catalysts, and wastes listed in	Dichloropropens trans-1.3-	0.014	МА		
	\$261.32].	Dichloropropens Bis(2-ethylhexyl)	0.014	NA		
		phthalate	1.8	NA		
		Hexachlorethane Hexachloredibenzo-	1.8	ЖA		
		furana Hexachlorodibenzo-	0.001	NA '		
-		p-dioxins Pentachlorodibenzo-	0.001	NA		
		furens Pentachlorodibenzo-	0.001	NA		
		p-diorins Tatrachlorodibanzo-	0,001	NA		
		furans	0.001	NA		

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

A	-4	١. (5

aste			for Any Singl	Concentration e Grab Sample	Best Demonstrated Treatment Technology	
ode	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date
024	(continued)	Wastewaters			Incineration.	June 8, 1989
		Chromium (Total)	0.35	NA		
		Nickel (Total)	0.47	NA		
		2-Chloro-1,3				
		-butadiene	0.28	NA		
		3-Chloropropene	0.28	NA		
		1,1-Dichloroethane	0.014	NA		
		1,2-Dichloroethane	0.014	NA		
		1,2-Dichloropropane cis-1,3-	0.014	NA		
		Dichloropropene trans-1,3-	0.014	NA		
		Dichloropropene Bis(2-ethylhexyl)	0.014	NA		
		phthalate	0.036	NA		
		Hexachloroethane Hexachlorodibenzo-	0.036	NA		
		furans Hexachlorodibenzo-	0.001	NA		
		p-dioxins Pentachlorodibenzo-	0.001	NA		
		furans Pentachlorodibenzo-	0.001	NA		
		p-dioxins Tetrachlorodibenzo-	0.001	NA		
		furans	0.001	NA		

	Best Demonstrated Treatment Technology	Concentration • Grab Sample				Waste
Effective Date1	Used As Basis for Standards	TCLP (mg/1)	Total (mg/kg or mg/l)	Constituent	Description	Code
August 8, 1988	Rotary kiln incineration followed by stabilization.			Monwastewaters	Bottom sediment sludge from the treatment of wastewaters from wood	K001
		NA	8.0	Naphthalene	preserving processes that use	
		NA	37	Pentachlorophenol	creosote and/or pentachlorophenol.	
		NA	8.0	Phenanthrene		
		NA	7.3	Pyrene		
		NA	0.14	Toluene		
		NA	0.16	Xylenes		
		0.51	NA	Lead		
August 8, 1988	Chemical precipitation of scrubber water from rotary kilm incineration.			<u> Wastewaters</u>		
		MA	0.15	Naphthalene		
		NA	0.88	Pentachlorophenol		
		MA	0.15	Phenanthrene		
		NA	0.14	Pyrene		
		NA	0.14	Toluene		
		NA	0.16	Kylenes		
		NA	0.037	Lead		
June 8, 1989 (No land				<u> Monwastewaters</u>	Wastewater treatment sludge from the production of zinc yellow	K004
disposal based		ilgated.	standards prom	No BDAT treatment	pigments.	
on no generation from August 8, 1988 through Jun 8, 1989)			-	Soft hammer provis		
August 8, 1988				<u> Wastewaters</u>		
		algated.	•	No BDAT treatment a Soft hammer provisi		
June 8, 1989				Nonwastewaters Dis	Wastewater treatment sludge from	K005
(3rd third waste moved to 2nd third)				Ro land disposal be	the production of chrome green pigments.	
	8, 1989	ed of Before June	kinally Dispos	Ronwastewaters Orig		
	 9 8, 1989	June 8, 1989 on. eration.	lons apply. posed of After ting Descripti ased on no gen kinelly Dispos standards prom	No BDAT treatment a Soft hammer provisi Monwastewaters Disp Generated From List No land disposal be	the production of chrome green	 K005

A-4.8

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

						A-4.d
Waste Code	Description	Constituent	Treatment Standa Maximum for Any Singl Total (mg/kg or mg/l)	Concentration	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1
K005	(Continued)	Wastewaters No BDAT treatment Soft hammer provi				June 8, 1989 (3rd third waste moved to 2nd third)
K007	Wastewater treatment sludge from the production of iron blue pigments.	Nonwastewaters Di Generated From Li	sting Description	o <u>n</u>		June 8, 1989 (3rd third waste moved to 2nd third)
		Nonwastewaters On No BDAT treatment Soft hammer provi	e 8, 1989			
		Wastewaters No BDAT treatment Soft hammer provi	_	-		June 8, 1989 (3rd third moved to 2nd third waste)
K908	Oven residue from the production of chrome oxide green pigments.	Norwastewaters No BDAT treatment Soft hammer provi	•	ilgated.		June 8, 1989 (No land disposal based on no generation from August 8, 1988 through June 8, 1989)
		Wastewaters No BDAT treatment	•	algated.		August 8, 1988
·	Distillation bottoms from the production of acetaldehyde from ethylene.	Nonwastewaters Chloroform	6.0	NA	Incineration.	June 8, 1989
		Wastewaters Chloroform	0.10	NA	Steam stripping followed by biological treatment.	June 8, 1989

			reatment Standa			
Waste			Maximum for Any Singl	Concentration	Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg or mg/l)		Used As Basis for Standards	Effective Date ¹
K010	Distillation side cuts from the production of acetaldehyde from	Nonwastewaters			Incineration.	June 8, 1989
	ethylene,	Chloroform	6.0	NA		
		Wastewaters			Steam stripping followed by biological treatment.	June 8, 1989
		Chloroform	0.10	NA		
K011	Bottom stream from wastewater stripper in the production of	Nonwastewaters			Incineration.	June 8, 1989 (Restricted as a
	acrylonitrile.	Acetonitrile	1.8	NA		soft hammer wast
	,	Acrylonitrile	1.4	NA		as of August 8,
		Acrylamide	23	NA		1988)
		Benzene	0.03	NA		
		Cyanides (Total)	57	NA		
		<u> Wastewaters</u>				August 8, 1988
		No BDAT treatment Soft hammer provis	•	lgated.		
K013	Bottom stream from acetonitrile column in the production of	Nonwastewaters	· ·		Incineration.	June 8, 1989 (Restricted as a
	acrylonitrile.	Acetonitrile	1.8	NA		soft hammer wast
		Acrylonitrile	1.4	NA		as of August 8,
		Acrylamide	23	NA		1988)
		Benzene	0.03	NA		
		Cyanides (Total)	57	NA		
		Wastewaters				August 8, 1988
		No BDAT treatment Soft hammer provis	-	lgated.		
 K014	Bottoms from acetonitrile purification column in the	<u>Nonwastewaters</u>			Incineration.	June 8, 1989 (Restricted as a
	production of acrylonitrile.	Acetonitrile	1.8	NA		soft hammer wast
	-	Acrylonitrile	1.4	na		as of August 8,
		Acrylamide	23	NA		1988)
		Benzene	0.03	NA		
		Cyanides (Total)	57	NA		

				* ************************************		
Waste Code	Description	Constituent	for Any Singl Total (mg/kg	rds Concentration e Grab Sample TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1
			or mg/l)			
K014	(Continued)	<u>Wastewaters</u>				August 8, 1988
		No BDAT treatment s Soft hammer provisi		ulgated.		
K015	Still bottoms from the distillation	Nonwastewaters				June 8, 1989
	of benzyl chloride.	No BDAT treatments Soft hammer provisi	_	mulgated.		(No land disposal based on no ash from August 8, 1988 through June 8 1989)
		<u>Wastewaters</u>			Chemical precipitation of scrubber water from liquid injection	August 8, 1988
		Anthracene	1.0	NA	incineration.	
		Benzal chloride	0.28	NA		
		Benzo(b and/or k)				
		fluoranthene	0.29	NA		
		Phenanthrene	0.27	NA		
		Toluene	0.15	NA		
		Total chromium	0.32	NA		
		Nickel	0.44	NA		
K016	Heavy ends or distillation residues from the production of carbon	Nonwastewaters			Rotary kiln incineration.	August 6, 1988
	tetrachloride.	Hexachlorobenzene	28	NA		
		Hexachlorobutadien	5,6	NA		
		Bexachlorocyclo-			•	
		pentadiene	5.6	na.		
		Hexachloroethane	28	NA		
		Tetrachloroethene	6.0	NA		
		Wastewaters			Concentrations in scrubber water from rotary kiln incineration.	August 8, 1988
		Hexachlorobenzene	0.033	NA		
		Hexachlorobutadien	e 0.007	NA		
		Hexachlorocyclo-				
		pentadiene	0.007	NA		
		Hexachloroethane	0.033	NA		
		Tetrachloroethene	0.007	NA		

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

Waste Code	Description	Constituent	for Any Single	Concentration	- Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1
			or mg/1)		oped in puril for building	DITECTIVE DUCC
K017	Heavy ends (still bottoms) from	Nonwastewaters			~-	August 8, 1988
	the purification column in the production of epichlorohydrin.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				
		Wastewaters			~-	August 8, 1988
		No BDAT treatment s Soft hammer provisi		lgated.		
K018	Heavy ends from the fractionation column in ethyl chloride production.	Nonwastewaters			Rotary kilm incineration.	August 8, 1988
	•	Chloroethane	6.0	NA		
		1,1-Dichlorosthans	6.0	NA		
		1,2-Dichlorosthans	6.0	NA		
		Hexachlorobenzene	28	NA		
		Hexachlorobutadiene	5.6	NA		
		Hexachloroethane	28	NA		
		Pentachloroethane	5.6	NA		
		1,1,1~Trichloro-				
		ethane	6.0	AK		
		<u> Wastewaters</u>			Concentrations in scrubber water from rotary kiln incineration.	August 8, 1988
		Chlorosthane	0.007	NA		
		Chloromethane	0.007	NA		
		1,1-Dichloroethane	0.007	NA		
		1,2-Dichloroethane	0.007	МА		
		Hexachlorobenzene	0.033	НA		
		Hexachlorobutadiene	0.007	NA		
		Pentachloroethane 1,1,1-Trichloro-	0.007	АК		
		athane	0.007	NA		

A-4.11

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

		Tr	eatment Standa:		-	
iaste			Maximum for Any Single	Concentration	Best Demonstrated Treatment Technology	
ode	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date
19	Heavy ends from the distillation of ethylene dichloride in ethylene	Nonwastewaters			Rotary kiln incineration.	August 8, 198
	dichloride production.	Bis(2-chloreethyl)				
		ether	5.6	NA		
		Chlorobenzene	6.0	NA		
		Chloroform	6.0	NA		
		1,2-Dichloroethane	6.0	NA		
		Hexachloroethane	28	NA		
		Napthalene	5.6	NA		
		Phenanthrene	5.6	NA		
		Tetrachloroethene	6.0	NA		
		1,2,4-Trichloro-				
		benzene	19	NA		
		1,1,1-Trichloro-				
		ethane	6.0	NA		
		<u>Wastewaters</u>			Concentrations in scrubber water from rotary kiln incineration.	August 8, 198
		Bis(2-chloroethyl)				
		ether	0.007	NA		
		Chlorobenzene	0.006	NA		
		Chloroform	0.007	NA		
		p-Dichlorobenzene	0.008	NA		
		1.2-Dichloroethane	0.007	NA		
		Fluorene	0.007	NA		
		Hexachloroethane	0.033	NA		
		Naphthalene	0.007	NA		
		Phenanthrene	0.007	NA		
		1,2,4,5-Tetrachlor				
		benzene	0.017	NA		
		Tetrachloroethene	0.007	NA		
		1,2,4-Trichloro-	0.00.	••••		
		benzene	0.023	NA		
		1,1,1-Trichloro-	0.020	MA		
		ethane	0.007	NA		
20	Heavy ends from the distillation of vinyl chloride in vinyl	Nonwastewaters			Rotary kilm incineration.	August 8, 198
	chloride production.	1,2-Dichloroethane 1,1,2,2-Tetra-	6.0	NA		
		chloroethane	5.6	NA		
		Tetrachloroethene	6.0	NA.		

			eatment Standa	rds Concentration	_	
iaste			for Any Single		Best Demonstrated Treatment Technology	
ode	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date
020	(Continued)	<u> Wastewaters</u>			Concentrations in scrubber water from rotary kiln incineration.	August 8, 198
		1,2-Dichloroethane 1,1,2,2-Tetra-	0.007	AA	,	
		chloroethane Tetrachloroethene	0.007 0.007	na Na		
 021	Aqueous spent antimony catalyst	Nonwastewaters Dis	 posed of After			August 8, 198
	waste from fluoromethanes production.	Generated From Lis				
		No land disposal be	ased on no gene	ration.		
		Nonwastewaters Ori	ginally Dispose	d of Before Augu	st 17, 1988	
		No BDAT treatment		lgated.		
		Soft hammer provis	ions apply.			
		<u>Wastewaters</u>				August 8, 198
		No BDAT treatment : Soft hammer provis	•	lgated.		
022	Distillation bottom tars from the production of phenol/acetone	Nonwastewaters			Fuel substitution followed by metals stabilization.	August 8, 198
RUEZ	from cumane.	Acetophenone Sum of Diphenylamin & Diphenylnitros		NA ·		
		amine	13	NA		
		Phenol	12	NA		
		-	_ _			
		Toluene	0.034	NA		
		-	_ _			
		Toluene Chromium (Total)	0.034 NA	NA 5.2		August 8, 198
		Toluene Chromium (Total) Nickel	0,034 NA NA NA	NA 5.2 0.32		August 8, 198
 023	Distillation light ends from the production of phthalic anhydride	Toluene Chromium (Total) Nickel Wastewaters No BDAT treatment	0,034 NA NA NA	NA 5.2 0.32	 Rotary kiln incineration.	August 8, 198 June 8, 1989 (3rd third wa

		Tx	reatment Standar		_			
				Concentration				
Waste Code	Description	Constituent	for Any Single Total (mg/kg or mg/l)	TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1		
K023	(Continued)	Wastewaters			Concentrations in scrubber water from rotary kiln incineration.	June 8, 1989 (3rd third wast		
		Phthalic acid (Phthalic anhydri	0.54 de)	NA		moved to 2nd third)		
K024	Distillation bottoms from the production of phthalic anhydride	Honwastewaters			Rotary kiln incineration.	August 8, 1988		
	from naphthelene.	Phthalic acid (Phthalic anhydri	28 .de)	NA				
		<u> Hastewaters</u>			Concentrations in scrubber water from rotary kilm incineration.	August 8, 1988		
		Phthalic acid (Phthalic anhydri	0.54 .de)	NA				
 K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	Nonwestewaters Disposed of After August 17, 1988 Generated From Listing Description				August 8, 1988		
		No land disposal based on no generation. Nonwastewaters Originally Disposed of Before August 17, 1988						
		<u> </u>			186 17, 1700			
		No BDAT treatment standards promulgated. Soft hammer provisions apply.						
		Wastewaters				June 8, 1989 (promulgated in		
	•	No BDAT treatment Soft hammer provis	•	ilgated.		the 1st third rule)		
K027	Centrifuge and distillation residues from toluene diiscoyanate	Nonwastewaters			Incineration or fuel substitution.	June 8, 1989		
	production.	Treatment technology - incineration or fuel substitution.			·			
		Wastewaters			Carbon adsorption or incineration.	June 8, 1989		
	Treatment technology - carbon adsorpt or incineration; or pretreatment (such biological treatment or chemical oxidifollowed by carbon adsorption and incinerations.							

		Tre	atment Standa		_	
Waste				Concentration	Best Demonstrated Treatment Technology	
Code	Description	Constituent	for Any Single Total (mg/kg or mg/l)	TCLP (mg/l)	Used As Basis for Standards	Effective Date
K028	Spent catalyst from the hydrochlorinator reactor in the	Nonwastewaters			Incineration.	June 8, 1989
	production of 1,1,1-trichloroethane.	1,1-Dichloroethane trans-1,2-	6.0	NA		
		Dichloroethene	6.0	NA		
		Hexachlorobutadiene	5.6	NA		
		Hexachloroethane	28	NA		
		Pentachloroethane 1,1,1,2-	5.6	NA		
		Tetrachloroethane 1,1,2,2-	5.6	NA		
		Tetrachloroethane 1,1,1-	5.6	NA		
		Trichloroethane 1,1,2-	6.0	NA		
		Trichloroethane	6.0	NA		
		Tetrachloroethylene	6.0	NA		
		Chromium (Total)	NA	Reserved		
		Nickel	NA	Reserved		
		Wastewaters			Incineration.	June 8, 1989
		1,1-Dichloroethane trans-1,2-	0.007	NA		
		Dichloroethene	0.033	NA		
		Hexachlorobutadiene	0.007	NA		
		Hexachloroethane	0.033	NA		
		Pentachloroethane 1,1,1,2-	0.033	NA		•
		Tetrachloroethane 1,1,2,2-	0.007	NA		
		Tetrachlorosthane Tetrachlorosthylens	0.007 0.007	NA		
		1,1,1- Trichlorosthans	0.007	NA		
		1,1,2-				
		Trichloroethane	0.007	NA		
		Chromium (Total)	0.35	NA		
		Nickel	0.47	NA		
		Cadmium	6.4	NA		
		Lead	0.037	NA		

		Tre	atment Standar	ds	_	
laste			Maximum	Concentration		
ode	Description	Constituent	for Any Single Total (mg/kg or mg/l)	TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
029	Waste from the product steam stripper in the production of	Nonwastewaters			Incineration.	June 8, 1989
	1,1,1-trichloroethane.	Chloroform	6.0			
		1,2-Dichloroethane	6.0			
		1,1-				
		Dichloroethylene	6.0			
		1,1,1-				
		Trichloroethane	6.0			
		Vinyl Chloride	6.0			
		Wastewaters				June 8, 1989
		No BDAT treatment s Soft hammer provisi	•	lgated.		
030	Column bottoms or heavy ends from the combined production of	Nonwastewaters			Rotary kiln incineration.	August 8, 1988
	trichloroethylene and	Hexachlorobutadiene	5.6	NA		
	perchloroethylene.	Hexachloroethane	28	NA		
	-	Hexachloropropene	19	NA		
		Pentachlorobenzene	28	NA		
		Pentachloroethane	5.6	NA		
		1,2,4,5-Tetrachlord) -			
		benzene	14	NA		
		Tetrachloroethene	6.0	NA		
		1,2,4-Trichloro-				
		benzene	19	NA		
		Wastewaters			Concentrations in scrubber water from rotary kiln incineration.	August 8, 198
		o-Dichlorobenzene	0.008	NA	•	
		p-Dichlorobenzene	0.008	NA		
		Hexachlorobutadi en		NA		
		Hexachloroethane	0.033	NA		
		Pentachloroethane	0.007	NA		
		1,2,4,5-Tetrachlord	-			
		benzene	0.017	NA		
		Tetrachloroethene	0.007	NA		
		1,2,4-Trichloro-				
		benzene	0.023	NA		

Waste Code	Description	Constituent	for Any Single Total (mg/kg	Concentration Grab Sample	- Best Demonstrated Used As Basis	Treatment Technology for Standards	Effective Date ¹	
			or mg/l)					
(031	By-product salts generated in the production of MSMA and cacodylic acid.	Nonwastewaters					August 8, 1988	
		Soft hammer provi	t standards promu isions apply.	lgated.				
		Wastewaters					August 8, 1988	
		No BDAT treatment Soft harmer provi	t standards promu	lgated.				
K035	Wastewater treatment sludges generated	Nonwastewaters					August 8, 1988	
	in the production of creosote.	No BDAT treatment Soft hammer prov	t standards promu isions apply.	lgated.				
		Wastewaters					August 8, 1988	
		No BDAT treatmen Soft hammer provi	t standards promu isions apply.	lgated.				
(036	Still bottoms from toluene reclamation distillation in the production of		isposed of After . isting Description				August 8, 1986	
	disulfoton.	No land disposal	based on no gene	ration.	•			
		Nonwastewaters O	riginally Dispose	d of Before Aug	ust 17, 1988			
		No BDAT treatment standards promulgated. Soft hammer provisions apply.						
		Wastewaters			Biological treatme	ent.	June 8, 1989 (Restricted as	
		Disulfoton	0.025	NA	-		soft hammer was as of August B, 1988)	

			Treatment Standa Maximum	rds Concentration	-	
laste lode	Description	Constituent	for Any Singl Total (mg/kg or mg/l)	e Grab Sample TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
037	Wastewater treatment sludge from the production of disulfoton.	Nonwastewaters			Rotary kiln incineration.	August 8, 1988
		Disulfoton	0.1	NA WA		
		Toluene	28	NA		
		Wastewaters				
		Disulfoton	0.003	NA	Concentrations in scrubber water from rotary kiln incineration.	August 8, 1988
		Toluene	0.028	NA.	Totaly killi Inclist actor.	
 038	Wastewater from the washing and	Nonwastewaters			Incineration.	June 8, 1989
JJ6	stripping of phorate production.	MOLIWASCOWACELS			Incliner actor.	5dile 0, 1707
		Phorate	0.1	NA		
		Wastewaters			Biological treatment.	June 8, 1989
		Phorate	0.025	NA		
039	Filter cake from the filtration	Nonwastewaters			Incineration.	June 8, 1989
	of diethyl phosphorodic acid in the production of phorate.	Treatment technology ~ incineration.				
		Wastewaters			Carbon adsorption or incineration.	June 8, 1989
		or incineration biological trea	ology - carbon ad; or pretreatment tment or chemical bon adsorption an	(such as oxidation)		
040	Wastewater treatment sludge from the production of phorate.	Honwastewaters			Incineration.	June 8, 1989
	one produceton or photage.	Phorate	0.1	NA		
		Wastowaters			Biological treatment.	June 8, 1989
		Phorate	0.025	NA		
041	Wastewater treatment sludge from	Nonwastewaters				June 8, 1989
	the production of toxaphene.	W BRAM A	nt standards prom	16		

No BDAT treatment standards promulgated. Soft hammer provision apply.

		Tr	eatment Standar		_	
				Concentration		
aste ode	Description	Constituent	for Any Single Total (mg/kg or mg/l)	Grab Sample TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
041	(Continued)	<u>Wastewaters</u>				June 8, 1989
		No BDAT treatment a Soft hammer provisi		lgated.		
042	Heavy ends or distillation residues from the distillation of	Norwastewaters				June 8, 1989
	tetrachlorobenzene in the production of 2,4,5-T.	No BDAT treatment a Soft hammer provisi		lgated.		
		Wastewaters				June 8, 1989
		No BDAT treatment a Soft hammer provisi	•	lgated.		
043	2,6-Dichlorophenol waste from the production of 2,4-D.	Nonwastewaters			Incineration.	June 8, 1989
	• • • • • • • • • • • • • • • • • • • •	2,4-Dichlorophenol	0.38	NA		
		2,6-Dichlorophenol	0.34	NA		
		Pentachlorophenol	1.9	NA		
		Tetrachloroethene	1.7	NA		
		Tetrachlorophenols				
		(Total)	0.68	NA		
		2.4.5-				
		Trichlorophenol	8.2	NA		
		2,4,6-				
		Trichlorophenol	7.6	NA		
		Hexachlorodibenzo-	0.001	•••		
		p-dioxins Hexachlorodibenzo-	0.001	NA		
		furans	0.001	NA		
		Pentachlorodibenzo-		M		
		p-dioxins	0.001	NA		
		Pentachlorodibenzo-		••••		
		furans	0.001	NA		
		Tetrachlorodibenzo-				•
		p-dioxins	0.001	NA		
		Tetrachlorodibenzo-				
		furans	0.001	NA		

Continued Constituent Total (mg/kg TCLP (mg/l) Used As Basis for Standards or mg/l) Used As Basis for Standards	ВУ	Best Demonstrated Treatment Technology Used As Basis for Standards	Concentration	eatment Standa Maximum for Any Singl	IF	Description	Waste
2,4-Dichlorophenol 0.049 NA 2,6-Dichlorophenol 0.013 NA Pentachlorophenol 0.22 NA Tetrachlorophenol 0.022 NA Tetrachlorophenol 0.006 NA Tetrachlorophenols (Total) 0.018 NA 2,4,5- Trichlorophenol 0.039 NA Havachlorodibenzo- p-dioxins 0.001 NA Hexachlorodibenzo- furans 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- furans 0.001 NA Wastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity.	Effective Date		TCLP (mg/1)	Total (mg/kg or mg/l)	Constituent		ode
2,6-Dichlorophenol 0.013 NA	June 8, 1989	Incineration.			Wastewaters	(continued)	043
Pentachlorophenol			NA	0.049			
Tetrachloroethene							
Tetrachlorophenols (Total)							
2,4,5- Trichlorophenol 0.016 NA 2,4,6- Trichlorophenol 0.039 NA Hexachlorodibenzo- p-dioxins 0.001 NA Hexachlorodibenzo- furans 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Nonwastewaters The manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.					Tetrachlorophenols		
2,4,6-					2,4,5-		
Hexachlorodibenzo- p-dioxins 0.001 NA Hexachlorodibenzo- furans 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA No land disposal based on reactivity. Wastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity.					2,4,6-		
Hexachlorodibenzo- furans 0.001 NA Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- furans 0.001 NA No mwastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.					Hexachlorodibenzo-		
Pentachlorodibenzo- p-dioxins 0.001 NA Pentachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Wastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.					Hexachlorodibenzo-		
Pentachlorodibenzo- furans 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA Wastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.				•	Pentachlorodibenzo-		
p-dioxins 0.001 NA Tetrachlorodibenzo- furans 0.001 NA 44 Wastewater treatment sludges from the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.			NA	_			
furans 0.001 NA 44 Wastewater treatment sludges from Nonwastewaters the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.			NA	0.001	p-dioxins		
the manufacturing and processing of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.			NA				
of explosives. No land disposal based on reactivity. Wastewaters No land disposal based on reactivity.	August 8, 198				Nonwastewaters		44
No land disposal based on reactivity.			rity.	ased on reactiv	No land disposal be		
	August 8, 198				<u>Wastewaters</u>		
045 Spent carbon from the treatment of <u>Nonwastewaters</u>			rity.	ased on reactiv	No land disposal be		
wastewater containing explosives.	August 8, 198				Nonwastewaters)45
No land disposal based on reactivity.	,		rity.	ased on reactiv	No land disposal be		
<u>Wastewaters</u>	August 8, 19				Wastewaters		

		T	reatment Standar		_	
Waste Code	Description	Constituent	Maximum for Any Single Total (mg/kg or mg/l)		Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date ¹
K046	Wastewater treatment sludges from	Nonwastewaters				
	the manufacturing, formulation, and loading of lead based initiating compounds.	(Nonreactive Subca	tegory) ³ NA	0.18	Stabilization.	August 8, 1988
•		(Reactive Subcates	ory)			
		No BDAT treatment Soft hammer provi	-	ulgated.		
		Wastewaters				August 8, 1988
		No BDAT treatment Soft hammer provis	•	lgated.		
K047	Pink/red water from TNT operations.	Nonwastewaters		·		August 8, 1988
		No land disposal b	ased on reactiv	ity.		
		Wastewaters				August 8, 1988
		No land disposal h	ased on reactiv	ity.		
K048	Dissolved air flotation (DAF) float	Nonwastewaters			Solvent extraction and/or fluidized	August 8, 1990
	from the petroleum refining industry.		0.6	37.A	bed incineration followed by metal	
		Benzene	9.5	NA	stabilization.	
		Benzo(a)pyrene Bis(2-ethyl hexyl)		NA		
		phthalate	37	NA		
		Chrysene	2.2	NA		
		Di-n-butyl phthala		NA		
		Ethylbenzene	67	NA		
			leserved	NA		
		Phenanthrene	7.7	NA		
		Phenol.	2.7	NA.		
		Pyrene	2.0	NA NA		
		Toluene	9.5 Reserved	NA NA		
		Xylenes R Cyanides (Total)	1.8	NA NA		
		Arsenic	NA	0.004		
		Total Chromium	NA NA	1.7		
		Nickel	NA	0.048		

		T:	reatment Standa	rds Concentration	-	
Waste			for Any Single		Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date1
K048	(continued)	Wastewaters			Chromium reduction, chemical	August 8, 199
					precipitation, and filtration of	- ,
		Benzene	0.011	NA	scrubber water from fluidized	
		Benzo(a)pyrene	0.047	NA	bed incineration.	
		Bis(2-ethylhexyl)				
		phthalate	0.043	NA		
		Chrysene	0.043	NA		
		Di-n-butyl phthala		NA		
		Ethylbenzene	0.011	NA		
		Fluorene	0.050	NA		
		Naphthalene	0.033	NA		
		Phenanthrene	0.039	NA		
		Phenol.	0.047	NA		
		Pyrene	0.045	NA		
		Toluene	0.011	NA		
		Xylenes	0.011	NA		
		Total Chromium	0.20	NA		
		Lead	0.037	NA 		
K049	Slop oil emulsion solids from the petroleum refining industry.	Nonwastewaters			Solvent extraction and/or fluidized bed incineration followed by metal	August 8, 199
	the perform religing industry.	Anthracene	6.2	NA	stabilization.	
		Benzene	9.5	NA.	Soudifization.	
		Benzo(a)pyrene	0.84	NA NA		
		Bis(2-ethylhexyl)	••••	••••		
		phthalate	37	NA		
		Chrysene	2.2	NA		
		Ethylbenzene	67	NA		•
			Reserved	NA.		
		Phenanthrene	7.7	NA		
		Phenol	2.7	NA		
		Pyrene	2.0	NA		
		Toluene	9.5	NA		
			Reserved	NA		
		Cyanides (Total)	1.8	NA		
		Arsenic	NA	0.004		
		Total Chromium	NA	1.7		
		Nickel	NA	0.048		
		Selenium	NA	0.025		

		Tr	eatment Standa		_	
Waste Code	Description	Constituent	for Any Single Total (mg/kg or mg/l)	Concentration e Grab Sample TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
K049	(continued)	Wastewaters			Chromium reduction, chemical precipitation, and filtration of	August 8, 199
		Anthracene	0.039	NA	scrubber water from fluidized	
		Benzene	0.011	NA	bed incineration.	
		Benzo(a)pyrene Bis(2-ethylhexyl)	0.047	NA		
		phthalate	0.043	NA		
		Carbon disulfide	0.011	NA		
		Chrysene	0.043	NA		
		2,4-Dimethylphenol	0.033	NA		
		Ethylbenzene	0.011	NA		
		Naphthalene	0.033	NA		
		Phenanthrene	0.039	NA		
		Phenol .	0.047	NA		
		Pyrene	0.045	NA		
		Toluene	0.011	NA		
		Xylenes	0.011	NA		
		Total Chromium	0.20	NA		
		Lead	0.037	МА		
050	Heat exchanger bundle cleaning sludge from the petroleum	Nonwastewaters			Solvent extraction and/or fluidized bed incineration followed by metal	August 8, 199
	refining industry.	Benzo(a)pyrene	0.84	NA	stabilization.	
		Phenol	2.7	NA		
		Cyanides (Total)	1.8	NA		
		Arsenic	NA	0.004		
		Total Chromium	NA	1.7		
		Nickel	NA	0.048		
		Selenium	NA	0.025		
		<u>Wastewaters</u>			Chromium reduction, chemical precipitation, and filtration of	August 8, 199
		Benzo(a)pyrene	0.047	na	scrubber water from fluidized	
		Phenol Phenol	0.047	NA	bed incineration.	
		Total Chromium	0.20	NA		
		Lead	0.037	NA		

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

A-4.24

		Ţ	reatment Standa		_	
Waste				Concentration		
waste Code	Description	Constituent	for Any Singl		Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
COGE	pescription	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	used as babis for Standards	Firective Date
				==		
K051	API separator sludge from the	Nonwastewaters			Solvent extraction and/or fluidized	August 8, 199
	petroleum refining industry.				bed incineration followed by metal	
		Anthracene	6.2	NA	stabilization.	
		Benzene	9.5	NA		
		Benzo(a)anthracen	e 1.4	NA		
		Benzo(a)pyrene	0.84	NA		
		Bis(2-ethylhexyl)				
		phthalate	37	NA		
		Chrysene	2.2	NA		
		Di-n-butyl				
		phthalate	4.2	NA		
		Ethylbenzene	67	NA		
		Naphthalene 1	Reserved	NA		
		Phenanthrene	7.7	NA		
		Phenol.	2.7	NA		
		Pyrene	2.0	NA		
		Toluene	9.5	NA		
		Xylenes	Reserved	NA		
		Cyanides (Total)	1.8	NA		
		Arsenic	NA	0.004		
		Total Chromium	NA	1.7		
		Nickel	NA	0.048		
		Selenium	NA	0.025		

		Tr	eatment Standa	rdsConcentration	_	
laste			for Any Singl	e Grab Sample	Best Demonstrated Treatment Technology	1
ode	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/l)	Used As Basis for Standards	Effective Date
(051	(Continued)	<u>Wastewaters</u>			Chromium reduction, chemical	August 8, 1990
					precipitation, and filtration of	
		Acenephthene	0.050	NA	scrubber water from fluidized	
		Anthracene	0.039	na	bed incineration.	
		Benzene	0.011	NA		
		Benzo(a)anthracene		NA		
		Benzo(a)pyrene	0.047	NA		
		Bis(2-ethylhexyl)				
		phthalate	0.043	NA		
		Chrysene	0.043	NA		
		Di-n-butyl phthala		NA		
		Ethyl benzene	0.011	NA		
		Fluorene	0.050	NA		
		Naphthalene	0.033	NA		
		Phenanthrene	0.039	NA		
		Phenol	0.047	NA		
		Pyrene	0.045	NA NA		
		Toluene	0.011	NA		
		Xylenes	0.011	NA		
		Total Chromium Lead	0.20 0.037	NA NA		
	Such habbars (loaded) from the				Solvent automatic and/or fluidical	
052	Tank bottoms (leaded) from the petroleum refining industry.	<u> Monwastewaters</u>			Solvent extraction and/or fluidized bed incineration followed by metal	August 8, 1990
		Benzene	9.5	NA	stabilization.	
		Benzo(a)pyrene	0.84	NA		
		o-Cresol	2.2	NA		
		p-Cresol	0.90	NA		
		Ethylbenzene	67	NA		
		-	eserved	NA		
		Phenanthrens	7.7	NA		
		Phenol .	2.7	na		
		Toluene	9.5	na		
			eserved	NA		
		Cyanides (Total)	1.8	NA		
		Arsenic	NA	0.004		
		Total Chromium	NA	1.7		
		Nickel	NA	0.048		
		Selenium	NA	0.025		

		Tr	eatment Standa	Concentration	-	Effective Date	
laste			for Any Single		Best Demonstrated Treatment Technology		
ode	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards		
05 2	(Continued)	Wastewaters			Chromium reduction, chemical precipitation, and filtration of	August 8, 1990	
		Benzene	0.011	NA	scrubber water from fluidized		
		Benzo(a)pyrene	0.047	NA	bed incineration.		
		o-Cresol	0.011	NA			
		p-Cresol	0.011	NA			
		2,4-Dimethylphenol	0.033	NA			
		Ethylbenzene	0.011	NA			
		Naphthalene	0.033	NA			
		Phenanthrene	0.039	NA			
		Phenol	0.047	NA			
		Toluene	0.011	NA			
		Xylenes	0.011	NA			
		Total Chromium	0.20	NA			
		Lead	0.037	NA			
060	Ammonia still lime sludge from	Nonwastewaters Disp				August 8, 19	
160	Ammonia still lime sludge from coking operations.	Nonwastewaters Disp Generated From List No land disposal be Nonwastewaters Orig No BDAT treatment : Soft hammer provis	nsed on no generally Disposes	eration. ed of Before Augu	ist 17, 1988	August 8, 19	
060		Generated From List No land disposal be Nonwastewaters Orig No BDAT treatment:	nsed on no generally Disposes	eration. ed of Before Augu	ist 17, 1988		
060		No land disposal be Nonwastewaters Original Romanian Soft hammer provision	ased on no generatinally Disposes standards promulens apply.	eration. ed of Before Augustales			
	Emission control dust/sludge from the primary production of steel in	No land disposal be Nonwastewaters Origino BDAT treatment: Soft hammer provis: Wastewaters	ased on no generating Disposes standards promutens apply. standards promutens apply.	eration. ed of Before Augusted.		August 8, 198	
	coking operations. Emission control dust/sludge from	No land disposal be Nonwastewaters Orig No BDAT treatment a Soft hammer provisa Wastewaters No BDAT treatment a Soft hammer provisa	ased on no generating Disposes standards promute the standards pro	eration. ed of Before Augustians elgated. elgated.		August 8, 198	
	Emission control dust/sludge from the primary production of steel in	No land disposal be Nonwastewaters Original No BDAT treatment of Soft hammer provision Wastewaters No BDAT treatment of Soft hammer provision No BDAT treatment of Soft hammer provision Nonwastewaters	ased on no generating Disposes standards promotions apply. Standards promotions apply. Interim Treatment of the control of t	eration. ed of Before Augustated. elgated.		August 8, 19	
	Emission control dust/sludge from the primary production of steel in	No land disposal be Nonwastewaters Original No BDAT treatment of Soft hammer provision Wastewaters No BDAT treatment of Soft hammer provision Nonwastewaters No BDAT treatment of Soft hammer provision Nonwastewaters	ased on no generating Disposes standards promute the samply. Standards promute the samply. Standards promute the samply. Interim Treatment of the samply to samply.	eration. ed of Before Augusted. elgated. ent. Or		August 8, 19	
.060	Emission control dust/sludge from the primary production of steel in	No land disposal be Nonwastewaters Original No BDAT treatment of Soft hammer provision Wastewaters No BDAT treatment of Soft hammer provision No BDAT treatment of Soft hammer provision Nonwastewaters	ased on no generating Disposes standards promotions apply. Standards promotions apply. Interim Treatment of the control of t	eration. ed of Before Augustated. elgated.		August 8, 19	

Waste Code	Description	Constituent		m Concentration le Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
K061 (Continued)	Nonwastewaters	Final Treatmen	nt Standards		
		High Zinc Subcate	gory		High temperature metals recovery.	August 8, 1990
		No land disposal	based on recycl	ing.		
		Low Zinc Subcates	ory (less than	15% total zinc)	Stabilization.	August 8, 1988
		Cadmium	NA	0.14		
		Total Chromium	NA	5.2		
		Lead	NA	0.24		
		Nickel	NA	0.32		
		Wastewaters				August 8, 1988
		No BDAT treatment Soft hammer provi	-	oulgated.		
K062	Spent pickle liquor generated by steel finishing operations of	Nonwastewaters ⁵			Chromium reduction followed by chemical precipitation with sulfide,	August 8, 1988
	facilities within the iron and	Total Chromium	NA	0.094	followed by precipitation, settling,	
	steel industry (SIC Codes 331 and 332).	Lead	NA.	0.37	filtering, and dewatering of solid residues.	
		Wastewaters ⁵			Chromium reduction followed by chemical precipitation with sulfide,	August 8, 1988
		Total Chromium	0.32	NA	followed by precipitation, settling,	
		Lead	0.04	NA	filtering, and dewatering of solid	
		Nickel	0.44	NA	residues.	

aste ode	Description	Constituent		m Concentration	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date			
069	Emission control dust/sludge from	<u>Nonwastewaters</u>				August 8, 1988			
	secondary lead smelting.	Calcium Sulfate Subcategory ⁶							
		No BDAT treatmen Soft hammer prov	•	mulgated.					
		Non-Calcium Sulf After August 17		Disposed of d From Listing De	escription ⁷				
		Non-Calcium Sulf of Before Augus	osed						
		No BDAT treatmen Soft hammer prov	_	mulgated.					
		Wastewaters				August 8, 198			
		No BDAT treatment standards promulgated. Soft hammer provisions apply.							
071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	Nonwastewaters Mercury	NA NA	0.025	Acid leaching and chemical oxidation followed by washing/dewatering of solid residues.	August 8, 199			
	prepartition brine is not used.	<u>Wastewaters</u> Mercury	0.030	NA	Sulfide precipitation followed by filtration.	August 8, 199			
073	Chlorinated hydrocarbon waste from	Nonwastewaters				August 8, 198			
	the purification step of the diaphragm cell process using No BDAT treatment standards promulgated. graphite anodes in chlorine Soft hammer provisions apply.								
	production.	Wastewaters				August 8, 198			
		No BDAT treatmer Soft hammer prov	_	mulgated.					

		Tr	eatment Standards Maximum Concentration			
laste lode	Description	Constituent	for Any Single Grab Sample Total (mg/kg TCLP (mg/1) or mg/1)		Treatment Technology for Standards	Effective Date
083	Distillation bottoms from aniline production.	Nonwastewaters				
		No Ash Subcategory ash by weight)	(Less than 0.01% total			June 8, 1989 (No land disposal based
		No BDAT treatment : Soft hammer provis:	standards promulgated. ions apply.			on no ash from August 8, 1988 through June 8 1989)
		Detectable Ash Sub	category			August 8, 1988
		No BDAT treatment : Soft hammer provis	standards promulgated. ions apply.			
		Wastewaters				August 8, 1988
		No BDAT treatment : Soft hammer provis:	atandards promulgated.			
084	Wastewater treatment sludges generated during the production of veterinary	Nonwastewaters				August 8, 1988
	pharmaceuticals from arsenic or organoarsenic compounds.	No BDAT treatment : Soft hammer provis:	standards promulgated, ions apply.			
		<u>Wastewaters</u>				August 8, 1988
		No BOAT treatment : Soft hammer provis	standards promulgated.			
085	Distillation or fractionation column bottoms from the production of	Nonwastewaters				August 8, 1988
	chlorobenzenes.	No BDAT treatment soft hammer provis	standards promulgated. ions apply.			
		<u>Wastewaters</u>				August B, 198
		No BDAT treatment Soft hammer provis	standards promulgated.			

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

A-	4	30	

		Tre	eatment Stand				
daste Code	Description			um Concentration tle Grab Sample TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date	
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and	Nonwastewaters (Sol	vent Washes	Subcategory) ⁸	Stabilization of ash from liquid injection incineration.	August 8, 1988	
	sludges from the cleaning of tubs and	Acetone	0.37	NA			
	equipment used in the formulation of	bis(2-ethylhexyl)					
	ink from pigments, driers, soaps,	phthalate	0.49	NA			
	and stabilizers containing chromium	n-Butyl alcohol	0.37	NA			
	and lead.	Cyclohexanone	0.49	NA			
		1,2-Dichlorobenzene		NA			
		Ethyl acetate	0.37	NA			
		Ethyl benzene	0.031	NA			
		Methanol	0.37	ӥ́У			
		Methylene chloride Methyl ethyl	0.037	NA			
		ketone	0.37	NA			
		Methyl isobutyl					
		ketone	0.37	NA			
		Naphthalene	0.49	NA			
		Nitrobenzene	0.49	NA			
		Toluene 1,1,1-Trichloro-	0.031	NA		•	
		ethane	0.044	NA			
		Trichloroethylene	0.031	NA			
		Xylenes	0.015	NA			
		Chromium (Total)	NA	0.094			
		Lead	NA	0.37			

APPENDIX A-4

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THERD WASTES

A-4.31

		Tre	eatment Standa		_	
		Maximum Concentration for Any Single Grab Sample				
waste Code	Description	Constituent	Total (mg/kg or mg/l)	e Grab Sample TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
(086 (continued)	ied)			Liquid injection incineration followed by chromium reduction,	August 8, 1986	
	•	Acetone	0.015	NA	chemical precipitation and	
		bis(2-ethylhexyl)			filtration of scrubber water.	
		phthalate	0.044	NA		
		n-Butyl alcohol	0.031	NA		
		Cyclohexanone	0.022	NA		
		1,2-Dichlorobenzene	0.044	NA		
		Ethyl acetate	0.031	NA		
		Ethyl benzene	0.015	NA		
		Methanol	0.031	NA		
		Methylene chloride	0.031	NA		
		Methyl ethyl ketone	0.031	NA		
		Methyl isobutyl				
		ketone	0.031	NA		
		Naphthalene	0.044	NA		
		Nitrobenzene	0.044	NA		
		Toluene	0.029	NA		
		1,1,1-Trichloro-				
		ethane	0.031	NA		
		Trichloroethylene	0.029	NA		
		Xylenes	0.015	NA		
		Chromium (Total)	0.32	NA		
		Leed	0.037	МА		
		(Solvent Sludges an Subcategories)	d Caustic Wate	er		August 8, 1988

No BDAT treatment standards promulgated.

Soft hammer provisions apply.

		Tr	eatment Standa		_		
daste	Description		Maximum for Any Single	Concentration	Best Demonstrated Treatment Technology		
Code		Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date1	
(087	Decanter tank tar sludge from coking operations.	<u>Nonwastewaters</u>			Rotary kiln incineration.	August 8, 1988	
	-	Acenaphthalene	3.4	NA			
		Benzene	0.071	NA			
		Chrysene	3.4	NA			
		Fluoranthene Indeno(1,2,3-cd)-	3.4	NA			
		pyrene	3.4	NA			
		Naphthalene	3.4	NA			
		Phenanthrene	3.4	NA			
		Toluene	0.65	NA			
		Xylenes	0.070	NA			
		Lead	NA	0.51			
		<u> Hastewaters</u>			Chromium reduction, chemical precipitation and filtration of	August 8, 1988	
		Acenaphthalene	0.028	NA	scrubber water from rotary kiln		
		Benzene	0.014	NA.	incineration.		
		Chrysene	0.028	NA NA	Included Con.		
		Fluoranthene	0.028	NA NA			
		Indeno(1,2,3-cd)-	0.025	*12*			
		pyrene	0.028	NA			
		Naphthalene	0.028	NA			
		Phenanthrene	0.028	NA			
		Toluene	0.008	NA			
		Xylenes	0.014	NA			
		Lead	0.037	NA			
(093	Distillation light ends from the production of phthalic anhydride	Nonwastewaters			Incineration.	June B, 1989 (3rd third was	
	from ortho-xylene.	Phthalic acid (Phthalic anhydri	28 de)	NA		moved to 2nd third)	
		<u>Wastewaters</u>			Incineration.	June 8, 1989 (3rd third was	
		Phthalic acid (Phthalic anhydri	0.54 de)	NA	,	moved to 2nd third)	
(094	Distillation bottoms from the production of phthalic anhydride	Nonwastewaters			Incineration.	June 8, 1989 (3rd third was	
	from ortho-xylene.	Phthalic acid (Phthalic anhydri	28 de)	NA		(3rd third waste moved to 2nd third)	

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST AND SECOND THIRD WASTES

aste ode	Description	Constituent	eatment Standards Maximum Concentration for Any Single Grab Sample Total (mg/kg TCLP (mg/l) or mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Dat
.094 (Co	ntinued)	Wastewaters		Incineration.	June 8, 1989
		Phthalic acid (Phthalic anhydric	0.54 NA de)		
	Distillation bottoms from the production of 1,1,1-	Nonwastewaters		Incineration.	June 8, 1989
	trichloroethane.	1,1,1,2- Tetrachloroethane 1,1,2,2-	5.6		
		Tetrachloroethane Tetrachloroethene	5.6 6.0		
		1,1,2- Trichloroethane Trichloroethylene	6.0 5.6		
		Hexachloroethane Pentachloroethane	28 5.6		
		Wastewaters			June 8, 1989
		No BDAT treatment a Soft hammer provis	standards promulgated. ions apply.		
96	Heavy ends from the heavy end column from the production of 1,1,1	Nonwastewaters		Incineration.	June 8, 1989
	trichloroethane.	1,3-Dichlorobenzene Pentachloroethane 1,1,1,2-	s 5.6 5.6		
		Tetrachloroethane 1,1,2,2-	5.6		
		Tetrachloroethane Tetrachloroethylen 1,2,4-	5.6 e 6.0		
		Trichlorobezene Trichlorosthylene	19 5.6		
		1,1,2- Trichloroethane	6.0		•

laste lode	Description	Constituent	eatment Standa Maximum for Any Singl Total (mg/kg or mg/l)	Concentration e Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
096 (C	ontinued)	Wastewaters				June 8, 1989
		No BDAT treatment a Soft hammer provisi	-	algated.		
 (097	Vacuum stripper discharge from the	<u> Monwastewaters</u>				June 8, 1989
	chlordane chlorinator in the production of chlordane.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				
		Wastewaters				June 8, 1989
		No BDAT treatment standards promulgated. Soft hammer provisions apply.				
 K098	Untreated process wastewater from	<u>Nonwastewaters</u>				June 8, 1989
	the production of toxaphene.	No BDAT treatment s Soft hammer provisi	-	ilgated.		
		Wastewaters				June 8, 1989
		No BDAT treatment a Soft hammer provise	-	algated.		
K099	Untreated wastewater from the production of 2,4-dichlorophenoxy-	Nonwastewaters			Chemical oxidation using chlorine.	August 8, 1988
	acetic acid (2,4-D).	2,4-D	1.0	NA		
		Hexachlorodibenzo- p-dioxins	0.001	NA		
		Hexachlorodibenzo- furans	0.001	NA		
		Pentachlorodibenzo	-			
		p-dioxins Pentachlorodibenzo		NA		
		furans Tetrachlorodibenzo	0.001	NA		
		p-dioxins	0.001	NA		
		Tetrachlorodibenzo	0.001	NA		

		Tr	eatment Standa		_	
_	Description	Maximum Concentration				
iaste Code		Constituent	Total (mg/kg or mg/l)	e Grab Sample TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
099	(Continued)	Wastewaters			Chemical oxidation using chlorine.	August 8, 1988
		2,4-D Hexachlorodibenzo-	1.0	NA		
		p-dioxins Hexachlorodibenzo-	0.001	NA		
		furans Pentachlorodibenzo		NA		
		p-dioxins Pentachlorodibenzo		NA		
		furans Tetrachlorodibenzo		NA		
		p-dioxins Tetrachlorodibenzo		NA		
		furans	0.001	NA		
100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Nonwastewaters Disp Generated From List No land disposal be	ting Description	o <u>n</u>	·	August 8, 1986
		Nonwastewaters Orig	ginally Dispose	ed of Before Augu	<u>18t 17, 1988</u>	
		No BDAT treatment standard promulgated. Soft hammer provisions apply.				
		<u> Wastewaters</u>				May 8, 1990
		Treatment standard:	s to be propose	ed and	,	

	Description	Tr	eatment Stand		Best Demonstrated Treatment Technology Used As Basis for Standards	Effactive Date
				um Concentration		
Waste Code		Constituent	for Any Sing Total (mg/kg or mg/l)	gle Grab Sample g TCLP (mg/1)		
			01 105/1/			
K101	Distillation tar residues from the distillation of aniline-based compounds	Nonwastewaters				
	in the production of veterinary pharmaceuticals from arsenic or	High Arsenic Subcatequal to 1% total		ter than or		August 8, 1988
	organo-arsenic compounds.	No BDAT treatment : Soft hammer provis		omulgated.		
		Low Arsenic Subcatarsenic)	egory (less t	han 1% total	Rotary kiln incineration followed by stabilization, if necessary.	August 8, 1988
		Ortho-Nitrosniline	14	NA		
		Cadmium	NA	0.066		
		Chromium (Total)	NA	5,2		
		Lead	NA	0.51		
		Rickel	NA	0.32		
		Wastewaters			Chemical precipitation and filtration of scrubber water	August 8, 1988
		Ortho-Nitroaniline	0.27	NA	from rotary kiln incineration.	
		Arsenic	2.0	NA	·	
		Cadmium	0.24	NA		
		Lead	0.11	NA	•	
		Mercury	0.027	NA		
K102	Residue from the use of activated carbon for decolorization in the	Nonwastewaters				
	production of vaterinary pharmaceuticals from arsenic or organo-arsenic compounds.	High Arsenic Subca equal to 1% total		ter than or		August 8, 1988
	or organic arrown to composition.	No BDAT treatment Soft hammer provis		omulgated.		
		Low Arsenic Subcatarsenic)	Low Araenic Subcategory (Less than 1% total arsenic)		Rotary kiln incineration followed by stabilization.	August 8, 1988
		Ortho-Nitrophenol	13	NA		
		Cadmium	NA	0.066		
		Chromium (Total)	NA	5.2		•
		Lead	NA	0.51		
		Nickel	NA	0.32		

•			reatment Standar	Concentration	-	
daste			for Any Single		Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg or mg/l)	TCLP (mg/1)	Used As Basis for Standards	Effective Date
102	(Continued)	Wastewaters			Chemical precipitation and filtration of scrubber water	August 8, 198
		Ortho-Nitrophenol	0.02B	NA	from rotary kiln incineration.	
		Arsenic	2.0	NA		
		Cadmium	0.24	NA		
		Lead	0.11	NA		
		Mercury	0.027	NA .		
103	Process residues from amiline extraction from the production	Monwastewaters			Solvent extraction followed by steam stripping of wastewater and	August 8, 198
	of amiline.	Aniline	5.6	NA	incineration of spent solvent.	
		Benzene	6.0	NA	Activated carbon adsorption of	
		2,4-Dimitrophenol	5.6	AK	steam stripping effluent (water).	
		Mitrobenzene	5.6	NA		
		Pheno1	5.6	NA		
		Wastewaters			Solvent extraction followed by steam stripping of wastewater and	August 8, 198
		Aniline	4.5	RA	incineration of spent solvent.	
		Benzene	0.15	AR	Activated carbon adsorption of	
		2,4-Dinitrophenol	0.61	RA	steam stripping effluent (water).	
		Nitrobenzene	0.073	HA		
		Phenol	1.4	NA .		
104	Combined wastewater streams generated from nitrobenzene/aniline production.	<u>Nonwastewaters</u>			Solvent extraction followed by steam stripping of wastewater and	August 8, 198
		Aniline	5.6	NA .	incineration of spent solvent.	
		Benzene	6.0	NA	Activated carbon adsorption of	
		2,4-Dinitrophenol	5.6	NA	steam stripping effluent (water).	
		Nitrobenzene	5.6	NA		
		Phenol.	5.6	NA		
		Total cyanides	1.8	NA		
		Wastewaters			Solvent extraction followed by stream stripping of wastewater and	August 8, 198
		Aniline	4.5	NA	incineration of spent solvent.	
		Benzene	0.15	NA	Activated carbon adsorption of	
		2,4-Dinitrophenol	0.61	NA	steam stripping effluent (water).	
		Nitrobenzene	0.073	KA		
		Phenol.	1.4	NA		
		Total cyanides	2.7	NA		

Waste Code	Description	Constituent	Freatment Standards Maximum Concentration for Any Single Grab Sample Total (mg/kg TCLP (mg/l) or mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Nonwastewaters No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
		Wastewaters No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
K106	Wastewater treatment sludges from the mercury cell process in chlorine production.	Nonwastewaters No BDAT treatment standards promulgated. Soft hammer provisions apply.			August 8, 1988
		Wastewaters No BDAT treatment Soft hammer provi	standards promulgated.		August 8, 1988
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	Land disposal not provisions because	standards promulgated. subject to soft hammer se waste was listed as a after November 8, 1984.		None
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	Land disposal not provisions because	standards promulgated. subject to soft hammer se waste was listed as a after November 8, 1984.		None
K113	Condensed liquid light ends from the production of toluenediamine via hydrogenation of dinitroluene.	Nonwastewaters Treatment technology - incineration or fuel substitution.		Incineration or fuel substitution.	June 8, 1989
		or incineration; biological treatm	logy - carbon adsorption, or pretreatment (such as ment or chemical oxidation) on adsorption and incineration.	Carbon adsorption or incineration.	June 8, 1989

Waste Code	Description	Constituent		num Concentration ngle Grab Sample kg TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nonwastewaters Treatment technologies substitution		eation or	Incineration or fuel substitution.	June 8, 1989
		Wastewaters Treatment technological treatfollowed by carbo	or pretreatme ment or chemic	nt (such as	Carbon adsorption or incineration.	June 8, 1989
115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nonwastewaters Treatment technofuel substitution		eation or	Incineration or fuel substitution; and	June 8, 1989
		Nickel	NA	0.32	Stabilization (of metals).	
		Wastewaters Treatment techno or incineration; biological treatfollowed by carband	or pretreatme ment or chemic	ent (such as	Carbon adsorption or incineration <u>and</u>	June 8, 1989
		Nickel	0.47	NA.	Stabilization (of metals).	
3116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	Nonwastewaters Treatment technofuel substitution		ration or	Incineration or fuel substitution.	June 8, 1989
		Wastewaters Treatment techno or incineration; biological treatfollowed by carb	or pretreatme	ent (such as	Carbon adsorption or incineration.	June 8, 1989

			Treatment Standards Maximum Conc	entration		
Waste Code	Description	Constituent	for Any Single (Total (mg/kg)	Grab Sample TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
P001	Warfarin, when present at concentration > 0.3%.	No EDAT treatment standards promulgated. Soft hammer provisions apply.			÷-	August 8, 1988
P002	1-Acetyl-2-thiourea.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				June 8, 1989
P003	Acrolein.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				June 8, 1989
P004	Aldrin.	No BDAT treatment Soft hammer prov	t standards promulga	ated.		August 8, 1988
P005	Allyl alcohol.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				August 8, 1988
P007	5-(Aminoethyl)-3-isoxazolol.	No EDAT treatment standards promulgated. Soft hammer provisions apply.				June 8, 1989
P008	4-Aminopyridine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.				June 8, 1989
P010	Arsenic acid.	No BDAT treatment Soft hammer prov	t standards promulgations apply.	ated.		August 8, 1988
P011	Arsenic (V) oxide.	No BDAT treatmen Soft hammer prov	t standards promulg	ated.		August 8, 1988
P012	Arsenic (III) oxide.	No BDAT treatmen Soft hammer prov	at standards promulgations apply.			August 8, 1988
P013	Barium cyanide.	Nonwastewaters Cyanide (Total) Cyanide (Amenabl	110 .e) 9.1	NA NA	Electrolytic oxidation followed by alkaline chlorination.	June 8, 1989 (3rd third waste moved to 2nd third)
		Wastewaters Cyanide (Total) Cyanide (Amenabl	1.9	NA NA	Alkaline chlorination.	June 8, 1989 (3rd third waste moved to 2nd third)
P014	Thiophenol.	No BDAT treatmen Soft hammer prov	nt standards promulg	ated.		June 8, 1989

Waste Code	Description	Constituent	maximum Con Maximum Con for Any Single Total (mg/kg)	centration Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
P015	Beryllium dust.	No BDAT treatment Soft hammer provis	•	gated.		August 8, 1988
P016	Bis-(chloromethyl) ether.	Mo BDAT treatment Soft hammer provis	-	-		August 6, 1988
P018	Brucine.	No BDAT treatment Soft hammer provis	ions apply.	sated.		August 8, 1988
P020	Dinoseb.	No BDAT treatment Soft hammer provis	standards promule			August 6, 1986
P021	Calcium cyanide.	Nonwastewaters Cyanide (Total) Cyanide (Amenable)	110 9.1	NA NA	Electrolytic oxidation followed by alkaline chlorination.	Jume 8, 1989 (3rd third waste moved to 2nd third)
		Wastewaters Cyanide (Total) Cyanide (Amenable)	1.9 0.10	NA NA	Alkaline chlorination.	June 8, 1989 (3rd third waste moved to 2nd third)
P026	1-(o-Chlorophenyl)thiourea.	No BDAT treatment Soft hammer provis		,	**	June 8, 1989
P027	Propenenitrile, 3-chloro.	No BDAT treatment Soft hammer provis		gated.		June 8, 1989
P029	Copper cyanides.	Nonwastewaters Cyanide (Total) Cyanide (Amenable)	110 9.1	NA NA	Electrolytic exidation followed by alkaline chlorination.	June 8, 1989
		Wastewaters Cyanide (Total) Cyanide (Amenable)	1.9 0.10	NA NA	Alkaline chlorination.	June 8, 1989
P030	Soluble cyanide salts not elsewhere specified.	Monwastewaters Cyanide (Total) Cyanide (Amenable)	110 9.1	NA NA	Electrolytic oxidation followed by alkaline chlorination.	June 8, 1989 (Restricted as a soft harmer wast as of August 8, 1988)

TREATMENT STANDARDS AND EFFECTIVE DATES FOR PIRST AND SECOND THIRD WASTES

		Tre	eatment Standard Maximum Cor		-	
Waste			for Any Single		Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg)		Used As Basis for Standards	Effective Date1
P030	(Continued)	<u> Hastewaters</u>			Alkaline chlorination.	June 8, 1989 (Restricted as a
		Cyanide (Total) Cyanide (Amenable)	1.9 0.10	na Na		soft hammer waste as of August 8, 1988)
P036	Dichlorophenylarsine.	No BDAT treatment a Soft hammer provisi		gated.		August 8, 1988
P037	Dieldrin.	No EDAT treatment s Soft hemmer provisi	-			August 8, 1988
P039	Disulfoton.	Honwastewater			Incineration.	June 8, 1989 (Restricted as a
		Disulfoton	0.1	NA		soft hammer waste
		<u>Hastewater</u> Disulfoton	0.025	NA	Biological treatment.	1988)
 P040	Diethyl 2-pyrazinyl	Nonwastewaters			Incineration.	June 8, 1989
	phosphorothicate.	Treatment technolog	y - incineratio	. ar		
		<u>Wastewaters</u>			Carbon adsorption or incineration.	June 8, 1989
		Treatment technolog or incineration; or biological treatmen followed by carbon	r pretreatment (nt or chemical o	such as exidation)		
P041	Diethyl-p-nitrophenyl phosphate.	Nonwastewaters			Incineration.	Jume 8, 1989 (Restricted as a
	pacapatas.	Treatment technolog	gy - incineratio	on		soft hammer waste as of August 8, 1988)
		<u> Hastewaters</u>			Carbon adsorption or incineration.	June 8, 1989 (Restricted as a
		Treatment technolog or incineration; or biological treatmen followed by carbon	r pretreatment (at or chemical o	(such as exidation)		soft hammer waste as of August 8, 1988)

Waste Code	Description	£	ment Standards Maximum Concentration or Any Single Grab Sample otal (mg/kg) TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basia for Standards	Effective Date
P043	Diisopropyl fluorophosphate.	Norwastewaters		Incineration.	June 8, 1989
		Treatment technology - incineration.			
		<u> Westewaters</u>		Carbon adsorption or incineration.	June 8, 1989
		Treatment technology or incineration; or probiological treatment of followed by carbon additional control of the carbon and th	retreatment (such as		
P044	Dimethoate.	Honwastewaters		Incineration.	June 8, 1989
		Treatment technology - incineration.			
		<u>Hastewaters</u>		Carbon adsorption or incineration.	June 8, 1989
		Treatment technology or incineration; or probiological treatment of followed by carbon add	retreatment (such as or chemical oxidation) sorption and incineration,		
P046	2,4-Dinitrophenol.	No BDAT treatment star Soft hammer provisions	odards promulgated.		August 8, 1988
P049	2,4-Dithiobiuret.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		**	June 8, 1989
P0 50	Endosulfan.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			August 8, 1988
2054	Aziridine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
2057	Fluoracetamide.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
P058	Fluoracetic acid sodium salt.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			August 8, 1988
2059	Heptachlor.	No BDAT treatment star Soft hammer provisions	ndards promulgated.	**	August 8, 1988

		Treatment Standards	_	
Waste Code	Description	Maximum Concentration for Any Single Grab Sample Constituent Total (mg/kg) TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
P060	Isodrin.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
P062	Hexaethyltetraphosphate.	<u>Monwastewaters</u>	Incineration.	Juna 8, 1989
		Treatment technology - incineration.		
		Wastewaters	Carbon adsorption or incineration.	June 8, 1989
		Treatment technology - carbon adsorption or incineration; or pretreatment (such as biological treatment or chemical oxidation) followed by carbon adsorption and incineration.		· • • • • • • • • • • • • • • • • • • •
P063	Hydrogen cyanide.	Nonwestewaters Cyanide (Total) 110 NA Cyanide (Amenable) 9.1 NA	Electrolytic oxidation followed by alkaline chlorination.	June 8, 1989 (Restricted as a soft hammer weate as of August 8, 1988)
		<u>Wastewaters</u>	Alkaline chlorination.	
		Cyanide (Total) 1.9 NA Cyanide (Amenable) 0.10 NA		
P066	Methomyl,	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
P067	2-Methylaziridine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
P068	Methyl Hydrazine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
P069	Methyllactonitrile.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1968
P070	Aldicarb.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	**	August 8, 1988

Waste Code	Description	Constituent	Maximum Con for Any Single Total (mg/kg)	centration Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date ¹
P071	Methyl parathion.	Nonwestewater Methyl parathion	0.1	NA	Incineration.	June 8, 1989 (Restricted as a soft harmer weste as of August 8, 1988)
		Wastewater Methyl parathion	0.025	NA	Biological treatment.	June 8, 1989 (Restricted as a soft hammer waste as of August 8, 1988)
P072	Alpha-naphthylthiourea (ANTU).	No BDAT treatment a Soft hammer provisi	ons apply.			June 8, 1989
 P074	Nickel cyanide.	Nonwastewaters Cyanide (Total) Cyanide (Amenable) Nickel	110 9.1 NA	NA NA 0.32	Electrolytic oxidation followed by alkaline chlorination for cyanide constituents; precipitation, settling, filtration, and stabilization for metals.	June 8, 1989
		Wastewaters Cyanide (Total) Cyanide (Amenable) Hickel	1.9 0.10 0.44	na na na	Alkaline chlorination for cyanide constituents; precipitation, settling for metals.	June 8, 1989
P081	Nitroglycerine,	No BDAT treatment a Soft hammer provisi		_		August 8, 1988
P082	N-Nitrosodimethylamine.	No BDAT treatment s Soft hammer provisi		gated.	**	August 8, 1988
P084	N-Nitrosomethylvinylamine.	No BDAT treatment a Soft hammer provisi		gated.		August 8, 1988
P085	Octamethylpyrophosphoramide.	Nonwastewaters			Incineration.	June 8, 1989

Treatment technology - incineration.

		Treatment Standards				
Waste Code	Description	Constituent	for Any Sing	Concentration gle Grab Sample 5) TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
P085	(Continued)	<u> Wastewaters</u>			Carbon adsorption or incineration.	June 8, 1989
		or incineration; biological treat followed by carb	plogy - carbon ad ; or pretreatment ment or chemical onn adsorption an	c (such as condition) and incineration.		
P087	Osmium tetraoxide.		nt standards prom			August 8, 1988
P089	Parathion.	Nonwastewater Parathion	0.1	na na	Incineration.	June 8, 1989 (Restricted as a soft hammer wast
						es of August 8, 1988)
		Wastewater			Biological treatment.	June 8, 1989 (Restricted as a
		Parathion	0.025	NA		soft hammer wast as of August 8, 1988)
P092	Phenylmercuric acetate.	No BDAT treatmen Soft hammer prov	nt standards prom	sulgated.		August 8, 1988
P094	Phorate.	Nonwastewater			Incineration.	June 8, 1989 (Restricted as a
		Phorate	0.1	NA		soft hammer wast as of August 8, 1988)
		<u> Wastewater</u>			Biological treatment.	June 8, 1989 (Restricted as a
		Phorate	0.025	NA		soft hammer wast as of August 8, 1988)
P097	Famphur.	Nonwastewater			Incineration.	June 8, 1989 (Restricted as a
		Famphur	0.1	NA		acft hammer west as of August 8, 1988)

laste lode	Description	Constituent	Maximum Con for Any Single Total (mg/kg)	centration Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date 1
097	(Continued)	Wastewater			Biological treatment.	June 8, 1989
		Famphur	0.025	NA .		(Restricted as a soft hammer wast as of August 8, 1988)
2098	Potassium cyanide.	Nonwastewaters			Electrolytic oxidation followed by alkaline chlorination.	June 8, 1989
		Cyanide (Total)	110	NA	•	
		Cyanide (Amenable)	9.1	NA		
		Hastewaters			Alkaline chlorination.	June 8, 1989
		Cyanide (Total)	1.9	NA		
		Cyanide (Amenable)		NA.		
 099	99 Potassium silver cyanide.	Nonwastewaters			Electrolytic oxidation followed by alkaline chlorination for cyanide	June 8, 1989 (3rd third waste
		Cyanide (Total) 1	10	NA	constituents; precipitation, settling,	moved to 2nd
		Cyanide (Amenable)	9.1	NA	filtration, and stabilization for	third)
		Silver	na	0.072	metals.	
	•	<u> Hastematers</u>			Alkaline chlorination.	Jume 8, 1989 (3rd third waste
		Cyanide (Total)	1.9	NA		moved 2nd
		Cyanide (Amenable)	0.10	MA		third)
102	Propargyl alcohol.	No BDAT treatment s Soft hammer provisi			· · · · · · · · · · · · · · · · · · ·	August 8, 1988
P104	Silver cyanide.	Nonwastewaters			Electrolytic exidation followed by alkaline chlorination for cyanide	June 8, 1989
		Cyanide (Total)	110	NA.	constituents; precipitation, settling,	
		Cyanide (Amenable)	9.1	MA	filtration, and stabilization for	
		Silver	NA	0.072	metals.	
		<u>Wastewaters</u>			Alkaline chlorination.	June 8, 1989
		Cyanide (Total)	1.9	NA		
		Cyanide (Amenable)		NA		
· P105	Sodium azide.	No BDAT treatment a Soft hammer provisi		sated.		August 8, 1988

	Description	Treatment Standards Maximum Concentration			-		
Waste		for Any Single Grab Sample			Best Demonstrated Treatment Technology		
Code		Constituent To	otal (mg/kg)	TCLP (mg/1)	Used As Basis for Standards	Effective Date1	
P106	Sodium cyanide.	Nonwastewaters			Electrolytic exidation followed by alkaline chlorination.	June 8, 1989	
		Cyanide (Total) 11		NA			
		Cyanide (Amenable)	9.1	NA			
		Wastewaters			Alkaline chlorination.	June 8, 1989	
		Cymnide (Total) 1.	. 9	NA			
		Cyanide (Amenable) 0.	. 10	NA			
P107	Strontium sulfide.	No BDAT treatment stan- Soft hammer provisions	apply.			June 8, 1989	
P108	Strychnine and salts.	No BDAT treatment stan Soft hammer provisions	dards promul			August 8, 1988	
 P109	Tetraethyl dithiopyrophosphate.	Nonwestewaters			Incineration.	June 8, 1989	
		Treatment technology - incineration.			(3rd third west moved to 2nd third)		
		Wastewaters			Carbon adsorption or incineration.	June 8, 1989 (3rd third wast	
		Treatment technology - or incineration; or pr biological treatment o followed by carbon ads	retreatment (or chemical o	such as xidation)		moved to 2nd third)	
 P110	Tetraethyl lead.	No BDAT treatment stan Soft hammer provisions	ndards promul			August 8, 1988	
 P111	Tetraethyl pyrophosphate.	Norwastewaters			Incineration.	June 8, 1989	
		Treatment technology -	- incineratio	n.			
		<u>Wastewaters</u>			Carbon adsorption or incineration.	June 8, 1989	
		Treatment technology - or incineration; or pr biological treatment o followed by carbon ads	retreatment (or chemical o	such as midation)			
P112	Tetranitromethane.	No BDAT treatment stand Soft hammer provisions	-	ated.		June 8, 1989	

Waste			Treatment Standards Maximum Concentration for Any Single Grab Sample	Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg) TCLP (mg/l		Effective Date1
P113	Thallic oxide.	No BDAT treatment Soft hammer provi			June 8, 1989
P114	Thallium (I) selemite.		t standards promulgeted. Usions apply.		June 8, 1989
P115	Thallium (I) sulfate.	No BDAT treatment Soft hammer provi	t standards promulgated. Isions apply.		August 8, 1986
P120	Vanadium pentoxide.	No BDAT treatment Soft hammer provi	t standards promulgated.		August 8, 1986
P121	Zinc cyanide.	Nonwastewaters Cyanide (Total) Cyanide (Amenable	110 NA D) 9.1 NA	Electrolytic oxidation followed by alkaline chlorination.	June 8, 1989 (3rd third waste moved to 2nd third)
		Wastewaters Cymnide (Total) Cymnide (Amenable	1.9 NA •) 0.10 NA	Alkaline chlorination.	June 8, 1989 (3rd third waste moved to 2nd third)
 P1 22	Zinc phosphide, when present at concentrations greater than 10%.	No BDAT treatment Soft hammer provi	•••		August 8, 1988
P123	Toxaphene.	No BDAT treatment Soft hemmer provi	standards promulgated.		August 8, 1986
U002	Acetone.		standards promulgated.		June 8, 1989
u003	Acetonitrile.	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
U005	o-Acetylaminofluorene.		t standards promulgated. Lsions apply.		June 8, 1989
U007	Acrylamide.		t standards promulgated.		August 8, 1988
U008	Acrylic acid.		t standards promulgated.		June 8, 1989

		T	reatment Standards Maximum Concentration		
aste			for Any Single Grab Sample	Best Demonstrated Treatment Technology	
code	Description	Constituent	Total (mg/kg) TCLP (mg/l)	Used As Basis for Standards	Effective Date1
1009	Acrylonitrile.	No BDAT treatment Soft hammer provis	standards promulgated.		August 8, 1988
101 0	Mitomycin C.	No BDAT treatment Soft hammer provis	standards promulgated. sions apply.		August 8, 1988
011	Amitrole.		standards promulgated.		June 8, 1989
1012	Aniline.	No BDAT treatment Soft hammer provide	standards promulgated.		August 8, 1988
J014	Auramine.		standards promulgated. sions apply.		June 8, 1989
J015	Azaserine.		standards promulgated.		June 8, 1989
U016	Benz(c)acridine.	No BDAT treatment Soft hammer provis	standards promulgated.		August 8, 1988
U018	Benz(a)anthracene.		standards promulgated. sions apply.		August 8, 1988
U019	Benzene.		standards promulgated. sions apply.		August 8, 1988
U020	Benzenesulfonyl chloride.	No BDAT treatment Soft hammer provi	standards promulgated, sions apply.		June 8, 1989
J021	Benzidine.		standards promulgated.		June 8, 1989
J022	Benzo(a)pyrene.	No BDAT treatment Soft hammer provi	standards promulgated, sions apply.		August 8, 1988
J023	Benzotrichloride.		standards promulgated.		June 8, 1989
 U025	Dichloroethyl ether.	No BDAT treatment Soft hammer provi	standards promulgated. sions apply.		June 8, 1989
บ026	Chlornaphazine.	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989

Waste Code	Description	Treatment Standards Maximum Concentration for Any Single Grab Sample Constituent Total (mg/kg) TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1
U028	Bis-(2-ethylhexyl)phthalate.	Nonwastewater Bis-(2-ethylhexyl)- phthalate 28 NA	Rotary kiln incineration.	June 8, 1989
		phthelate 28 NA <u>Wastewater</u> Bis-(2-ethylhexyl)- phthelate 0.54 NA	Concentrations in scrubber water from rotary kiln incineration.	June 8, 1989
- - J029	Methyl bromide.	No BDAT treetment standards promulgated. Soft hammer provisions apply.	·	August 8, 1988
 J031	n-Butanol.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	· · · · · · · · · · · · · · · · · · ·	August 8, 1988
1032	Calcium chromate.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	<u></u>	June 8, 1989
1035	Chlorambucil.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
1036	Chlordane, technical.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
1037	Chlorobenzene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	~-	August 8, 1988
1041	n-Chloro-2,3-epoxypropane.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
J043	Vinyl chloride.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	·-	August 8, 1988
1044	Chloroform.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
1046	Chloromethyl methyl ether.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
1047	Beta-chloronaphthalene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989

Waste Code	Description	Treatment Standards Maximum Concentratio for Any Single Grab Sam Constituent Total (mg/kg) TCLP (m	pple Best Demonstrated Treatment Technology	Effective Date ¹
U049	4-Chloro-o-toluidine, hydrochloride.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
U050	Chrysene.	No BDAT treatment standards promulgated. Soft harmer provisions apply.		August 8, 1988
U051	Creosote.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
U053	Crotonaldehyde.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
U057	Cyclohexanone.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
U058	Cyclophosphamide.	Honwastewaters Treatment technology - incineration.	Incineration.	June 8, 1989
		Wastewaters Treatment technology - carbon adsorption or incineration; or pretreatment (such as biological treatment or chemical oxidation) followed by carbon adsorption and incinerat		Jum• 8, 1989
U059	Daunomycin.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
U060	DDD.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
U061	DDT.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
U062	Diallate.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
U063	Dibenz o (a. h) anthracene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1968
U064	2,2,7,8-Dibenzopyrene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988

Waste Code	Description	Constituent	Treatment Standard Maximum Con for Any Single Total (mg/kg)	centration Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date ¹
U066	Dibromo-3-chloropropane.	No BDAT treatment Soft hammer provi		gated.		August 8, 1988
U067	Ethylene, 1,2-dichloro-		t standards promula	sated.		August 8, 1988
U069	Di-n-butyl phthalate.	Nonwastewaters Di-n-butyl phthelate	28	NA	Incineration.	June 8, 1989 (3rd third waste moved to 2nd third)
		Wastewaters Di-n-butyl phthalate	0.54	NA	Incineration.	June 8, 1989 (3rd third west moved to 2nd third)
J070	o-Dichlorobenzene.	No BDAT treatment Soft hammer provi	standards promula	ated.		June 8, 1989
 U073	Dichlorobenzidene, 3,3~	No BDAT treatment standards promulgated. Soft hammer provisions apply.			Juna 8, 1989	
U074	1,4-Dichloro-2-butene.		standards promulg	ated.		August 8, 1988
u077	Ethane, 1,2-dichloro-	No BDAT treatment Soft hammer provi	standards promula	ated.		August 8, 1988
U078	Dichloroethylene, 1,1-	No BDAT treatment Soft hammer provi	standards promula	ated.		August 8, 1986
UOBO	Methylene chloride.		standards promulg	ated.		Juna 8, 1989
U083	Dichloropropane, 1,2-		standards promula	ated.		June 8, 1989
U086	N,N Diethylhydrazine.	No BDAT treatment Soft hammer provi	standards promula	ated.		August 8, 1988
 U087	0,0-Diethyl-S-methyl dithiophosphate.	Nonwastewaters Treatment technol	Logy - incineration		Incineration.	June 8, 1989 (3rd third waste moved to 2nd third)

Waste		T	reatment Standards Maximum Concentration for Any Single Grab Sample	Best Demonstrated Treatment Technology	
Code	Description	Constituent	Total (mg/kg) TCLP (mg/l)	Used As Basis for Standards	Effective Date1
UO87			ogy - carbon adsorption or pretreatment (such as	Carbon adsorption or incinertion.	Jume 8, 1989 (3rd third waste moved to 2nd third)
		followed by carbon	ent or chemical oxidation) n adsorption and incineration.		
 UO88	Diethyl phthalate.	Norwastewaters Diethyl phthalate	28 NA	Incineration.	Jume 8, 1989 (3rd third weste moved to 2nd third)
		<u>Wastewaters</u> Diethyl phthalate	0.54 NA	Incineration.	Jume 5, 1989 (3rd third weste moved to 2nd third)
 U089	Diethylstilbestrol.	No BDAT treatment Soft hammer provide			August 8, 1988
บ092	Dimethylamine,	Soft hammer provis	standards promulgated. sions apply.		June 8, 1989
U093	Dimethylaminoazobenzene.	Soft hammer provi	standards promulgated.		June 8, 1989
U094	Dimethylbenz(a)anthracene,7,12-	No BDAT treatment Soft hammer provi	standards promulgated. sions apply.		June 8, 1989
บ095	Dimethylbenzidine,3,3-	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
u097	Dimethylcarbancyl chloride.		standards promulgated. sions apply.		June 8, 1989
UO98	Dimethylhydrazine, 1,1-		standards promulgated. sions apply.		June 8, 1989
U099	Dimethylhydrazine, 1,2-	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
U101	Dimethylphenol, 2,4-		standards promulgated.		June 8, 1989

		Treatment Standards			_		
Waste Code	Description	Constituent	Maximum Con- for Any Single Total (mg/kg)	Grab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date1	
U102	Dimethyl phthalate.	Nonwastewaters Dimethyl phthelate 28 NA		Incineration.	June 8, 1989 (3rd third waste moved to 2nd third)		
		Wastewaters Dimethyl phthalate		NA.	Incineration.	June 8, 1989 (3rd third waste moved to 2nd third)	
U103	Dimethyl sulfate.	No BDAT treatment at Soft hammer provision	andards promulg	ated.		August 8, 1988	
J105	2,4-Dinitrotoluene.	No BDAT treatment st Soft hammer provision	andards promulg	ated.		August 8, 1988	
J106	Dinitrotoluene, 2,6-	No BDAT treatment st Soft hammer provision	andards promulg	ated.		June 8, 1989	
 J107	Di-n-octyl phthalate.	Nonwastewaters			Incineration.	June 8, 1989	
		Dirn-octyl phthalate 2	18	NA			
		Wastewaters			Incineration.	June 8, 1989	
		Di-n-octyl phthalate	0.54	NA			
J108	Dioxane, 1,4-	No BDAT treatment st Soft hammer provision	ns apply.	ated.		August 8, 1988	
J109	1,2,-Diphenylhydrazine.	No BDAT treatment st Soft hammer provision	anderds promulg	ated.		June 8, 1989	
1110	Dipropylamine.	No BDAT treatment st Soft hammer provision	andards promula	ated.		June 8, 1989	
J111	Di-N-Propyinitrosamine,	No BDAT treatment st Soft hammer provision	andards promule	ated.		June 8, 1989	
 U114	Ethylenebis-(dithiocarbamic acid).	No BDAT treatment at Soft hammer provision	andards promula			June 8, 1989	

		· · · · · · · · · · · · · · · · · · ·	Ireatment Standards Maximum Concentration		
aste			for Any Single Grab Sample	Best Demonstrated Treatment Technology	
ode	Description	Constituent	Total (mg/kg) TCLP (mg/l)	Used As Basis for Standards	Effective Date
115	Ethylene oxide.	No BDAT treatment Soft hammer provi			August 8, 1988
116	Ethylene thiourea.	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
119	Ethyl methanesulfonate.		t standards promulgated.		June 8, 1989
122	Formaldehyde.	No BDAT treatment Soft hammer provi	t standards promulgated.		August 8, 1988
1124	Furan.	No BDAT treatment Soft hammer provi	t standards promulgated.		August 8, 1988
1127	Hexachlorobenzene.	No BDAT treatment Soft hammer provi	t standards promulgated.		June 8, 1989
1128	Hexachlorobutadiene.	Soft hammer prov:	t standards promulgated.	••	June 8, 1989
1129	Lindane.		t standards promulgated.		August 8, 1988
130	Hexachlorocyclopentadiene.		t standards promulgated. isions apply.		August 8, 1988
131	Hexachloroethane.	No BDAT treatmen Soft hammer prov	t standards promulgated. isions apply.		June 8, 1989
1133	Hydrazine.	No BDAT treatmen Soft hammer prov	t standards promulgated. isions apply.		August 8, 1988
134	Hydrofluoric acid.	No BDAT treatmen Soft hammer prov	t standards promulgated.		August 8, 1988
135	Hydrogen sulfide.		t standards promulgated. isions apply.		June 8, 1989
1137	Indeno (1,2,3-cd)pyrene.		t standards promulgated. isions apply.		August 8, 1988
138	Methyl iodide.	No BDAT treatmen Soft hammer prov	t standards promulgated.		June 8, 1989

			Treatment Standards	•	
Waste Code	Description	Constituent	Maximum Concentration for Any Single Grab Sample Total (mg/kg) TCLP (mg/1)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
1140	Isobutyl alcohol.	Soft hammer prov	t standards promulgated.		June 8, 1989
142	Kepone.		t standards promulgated. isions apply.		June 8, 1989
143	Lasiocarpine.		t standards promulgated. isions apply.		June 8, 1989
144	Lead acetate.		t standards promulgated. isions apply.		June 8, 1989
146	Lead subacetate.		t standards promulgated. isions apply.		June 8, 1989
147	Maleic anhydride.		t standards promulgated.		June 8, 1989
 149	Malononitrile.	No BDAT treatment Soft hammer provi	t standards promulgated.		June 8, 1989
150	Melphalan.		t standards promulgated.		June 8, 1989
151	Mercury.		t standards promulgated.		August 8, 1988
154	Methanol,	No BDAT treatment Soft hammer provi	t standards promulgated. isions apply.		August 8, 1988
155	Methapyrilene.	No BDAT treatment Soft hammer prove	t standards promulgated.		August 8, 1988
157	3-Methylcholanthrene.		t standards promulgated.		August 8, 1988
158	4,4-Methylene-bis-(2-chloroaniline).	No BDAT treatment Soft hammer prov	t standards promulgated.		August 8, 1988
159	Methyl ethyl ketone.		t standards promulgated. isions apply.		August 8, 1988
161	Methyl isobutyl ketone.	No BDAT treatment Soft hammer provi	t standards promulgated.		June 8, 1989

		<u>T</u>	reatment Standards Maximum Concentration		
Raste Code	Description	Constituent	for Any Single Grab Sample Total (mg/kg) TCLP (mg/l)	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date
J1 62	Methyl methacrylate.	No BDAT treatment Soft hammer provis	standards promulgated. sions apply.		June 8, 1989
J163	N-Methyl-N-nitro-N- nitrosoguanidine.	No BDAT treatment Soft hammer provis			June 8, 1989
U164	Methylthiouracil.		standards promulgated.		June 8, 1989
U165	Naphthalene.	No BDAT treatment Soft hammer provide			June 8, 1989
U168	Napthylamine, 2-		standards promulgated. sions apply.		June 8, 1989
U169	Nitrobenzene.	No BDAT treatment Soft hammer provide	standards promulgated. sions apply.		June 8, 1989
U170	p-Nitrophenol.		standards promulgated.		June 8, 1989
U171	Nitropropane, 2-		standards promulgated. sions apply.		August 8, 1988
U172	N-Nitroso-di-n-butylamine.	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989
u173	N-Nitroso-diethanolamine.		standards promulgated.		June 8, 1989
U174	N-Nitroso-diethylamine.		standards promulgated. sions apply.		June 8, 1989
u176	N-Nitroso-N-ethylurea.	No BDAT treatment Soft hammer provi	standards promulgated. sions apply.		June 8, 1989
U177	N-Nitroso-N-methylurea.		standards promulgated. sions apply.		August 8, 1988
U178	N-Nitroso-N-methylurethane.	No BDAT treatment Soft hammer provi	standards promulgated. sions apply		June 8, 1989
U179	N-Nitrosopiperidine.	No BDAT treatment Soft hammer provi	standards promulgated.		June 8, 1989

		Treatment Standards		
Haste		Maximum Concentration for Any Single Grab Sample	Best Demonstrated Treatment Technology	
Code	Description	Constituent Total (mg/kg) TCLP (mg/l		Effective Date1
J1 8 0	N-Nitrosopyrrolidine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
J185	Pentachloronitrobenzene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
U188	Phenol.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
J189	Phosphorus sulfide.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
 J190	Phthalic anhydride.	Nonwastewaters Phthalic anhydride (measured as Phthalic acid) 28 NA	Incineration.	Jume 8, 1989 (3rd third waste moved to 2nd third)
		Wastewaters Phthalic anhydride (measured as Phthalic acid) 0.54 NA	Incineration.	Jume 8, 1989 (3rd third waste moved to 2nd third)
1192	Pronamide.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
1193	1,3-Propane sultone.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
1196	Pyridine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
1200	Reserpine.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		August 8, 1988
1203	Safrole.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
205	Selenium disulfide.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		June 8, 1989
J 20 6	Streptozotocin.	No BDAT treatment standards promulgated. Soft hammer provisions apply.	**	June 8, 1989

			Treatment Standards		
Waste			Maximum Concentration for Any Single Grab Sample	Best Demonstrated Treatment Technology	
eboC	Description	Constituent	Total (mg/kg) TCLP (mg/l)	Used As Basis for Standards	Effective Date1
J208	Terchloroethane, 1,1,1,2-	Soft hammer prov			June 8, 1989
J209	Tetrachloroethane, 1,1,2,2-	No BDAT treatmen Soft hammer prov	t standards promulgated.		August 8, 1988
U210	Tetrachloroethylene.		t standards promulgated. isions apply.		August 8, 1988
U211	Carbon tetrachloride.	No BDAT treatmen Soft hammer prov	t standards promulgated.	- -	August 8, 1988
U213	Tetrahydrofuran.		t standards promulgated. isions apply.		June 8, 1989
U214	Thallium (I) acetate.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
U215	Thallium (I) carbonate.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		••	June 8, 1989
U216	Thallium (I) chloride.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
U217	Thallium (I) nitrate.		t standards promulgated, isions apply.		Juna 8, 1989
U218	Thioacetamide.	No BDAT treatmen Soft hammer prov	t standards promulgated.		June 8, 1989
U219	Thiourea.	No BDAT treatmen Soft hammer prov	nt standards promulgated.		August 8, 1988
U220	Toluene.		at standards promulgated.		August 8, 1988
U221	Toluenediamine.	Nonwastewaters Treatment technofuel substitution	plogy - incineration or n.	Incineration or fuel substitution.	June 8, 1989 (Restricted as soft hammer was as of August 8, 1988)

Waste Code	Description	Constituent	Freatment Standards Maximum Concer for Any Single Gr Total (mg/kg)	ab Sample	Best Demonstrated Treatment Technology Used As Basis for Standards	Effective Date ¹
U221	(Continued)	or incineration; biological treatm	ogy - carbon adsorpt or pretreatment (suc ent or chemical oxid n adsorption and inc	h as ation)	Carbon adsorption or incineration.	June 8, 1989 (Restricted as a soft hammer waste as of August 8, 1988)
U223	Toluene diisocysnate.	Nonwastewaters Treatment technol fuel substitution	ogy ~ incineration o	r	Incineration or fuel substitution.	Jume 8, 1989 (Restricted as a soft hammer waste as of August 8, 1988)
		or incineration; biological treatm	ogy - carbon adsorpt or pretreatment (suc ent or chemical oxid n adsorption and inc	n as ation)	Carbon adsorption or incineration.	June 8, 1989 (Restricted as a soft hammer waste as of August 8, 1988)
u226	Methylchloroform.	Soft hammer provi				August 8, 1988
U227	Trichloroethane, 1,1,2-	Soft hammer provis	standards promulgat	ed.		August 8, 1988
U228	Trichloroethylene.		standards promulgat sions apply.	ed.		August 8, 1988
U235	Tris (2,3-Dibromopropyl) phosphate.	Nonwastewaters tris-(2,3- Dibromopropyl) phosphate Wastewaters	0.1 N		Rotary kilm incineration. Biological treatment.	June 8, 1989
		tris-(2,3- Dibromopropyl) phosphate	0.025 พ	.		
U237	Uracil mustard.	No BDAT treatment Soft hammer provi	standards promulgat	ed.		August 8, 1988

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		Treatment Standards			
waste Code	Description	Constituent	Maximum Concentration for Any Single Grab Sample Total (mg/kg) TCLP (mg/l)	Best Demonstrated Treatment Techno Used As Basis for Standards	logy Effective Date
J238	Ethyl carbamate.	No BDAT treatment Soft hammer provi	t standards promulgated. isions apply.	~-	August 8, 1988
1239	Xylene.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
J244	Thiram.	No BDAT treatment standards promulgated. Soft hammer provisions apply.			June 8, 1989
U248	Warfarin, when present at concentrations of 0.3% or less.	No BDAT treatment standards promulgated. Soft hammer provisions apply.		**	August 8, 1988
U249	Zinc phosphide, when present at concentrations of 10% or less.	No BDAT treatmen Soft hammer prov	t standards promulgated.		August 8, 1988

EXHIBIT A-3

TREATMENT STANDARDS AND EFFECTIVE DATES FOR FIRST THIRD WASTES

Footnotes

- Effective date is the date the treatment standards or soft hammer provisions take effect for all First or Second Third wastes, with two exceptions. For soil and debris wastes contaminated with First Third wastes for which BDAT is incineration, the effective date is August 8, 1990 based on a capacity extension. Until August 1990, such soil and debris must be disposed of in a unit that meets the RCRA minimum technology requirements. For soil and debris wastes contaminated with Second Third wastes for which BDAT is incineration, the effective date is June 8, 1991 based on a capacity extension. Until June 1991, such soil and debris must be disposed of in a unit that meets the RCRA minimum technology requirements.
- Not applicable.
- This standard does not apply to K046 nonwastewaters that are explosive as originally generated. Residues from the open detonation, open burning, or incineration of K046 nonwastewaters that are explosive as originally generated do not have to meet these standards.
- Effective until August 8, 1990. The effective date of final treatment standards for nonwastewaters is being deferred until after this date because of inadequate high temperature metals recovery capacity.
- 5 Standards do not apply to residues generated as a result of lime (Ca(OH)₂) treatment that are not classified as hazardous wastes according to 40 CFR 261.3(c)(2)(ii), unless they are hazardous due to the characteristic of EP toxicity.
- 6 Emission control sludges generated as calcium sulfate from secondary wat scrubbers using lime neutralization.
- 7 Emission control sludges that are not generated as calcium sulfate from secondary wat scrubbers using lime neutralization.
- Treatment standards for the solvent sludges or caustic/water washes and sludges subcategories to be promulgated prior to May 8, 1990. Soft hammer provisions apply.
- These provisions are not applicable to K100 westewaters until May 8, 1990 because this is a Third Third waste. Soft hammer provisions do not apply at this time.

APPENDIX B

CONSTITUENTS AND THEIR STRUCTURAL/FUNCTIONAL GROUPS

APPENDIX B

Group/	/Gompoun	d (CAS Number
ī.	Halo	ogenated Organics	
	1.	Halogenated Non-Polar Aromatic Compo	ounds .
		Chlorobenzene	108-90-7
		Chlorobenzilate	570-15-6
		2-Chloronapthalene	91-58-7
		1,2-Dichlorobenzene	95-50-1
		1,3-Dichlorobenzene	541-73-1
		1,4-Dichlorobenzene	106-46-7
		Hexachlorobenzene	118-74-1
		Hexachlorophene	70-3-04
		Pentachlorobenzene	608-93-5
		1,2,4,5-Tetrachlorobenzene	95-94-3
		1,2,4-Trichlorobenzene	120-82-1
		Benzal Chloride	98-87-3
		DDD	72-54-8
		DDE	72-55-9
		DDT	50-29-3
		Hexachlorocyclopentadiene	77-47-4
	2a.	Dioxins/Furans and their Precursors	
		Hexachlorodibenzo-p-dioxins	
		Hexachlorodibenzofurans	
		Pentachlorodibenzo-p-dioxins	
		Pentachlorodibenzofurans	
		Tetrachlorodibenzo-p-dioxins	••
		Tetrachlorodibenzofurans	
		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6
		2,4-Dichlorophenoxyacetic acid	94-75-7
		2,4,5-TP (Silvex)	93-72-1
		2,4,5-T	93-76-5

roup/Compour	ad	CAS Number	
2b.	PCBs		
	Aroclor 1016	12674-11-2	
	Aroclor 1221	11104-28-2	
	Aroclor 1232	11141-16-5	
	Aroclor 1242	53469-21-9	
	Aroclor 1248	12672-29-6	
	Aroclor 1254	11097-69-1	
	Aroclor 1260	11096-82-5	
2c.	<u>Herbicides</u>		
	2,4,5-T	93-76-5	
	2,4-D	94-75-7	
3.	Halogenated Phenols, Cresols, Other	Polar Aromatics	
	4-Chloroaniline	106-47-8	
	2-Chlorophenol	95-57-8	
	3,3'-Dichlorobenzidine	91-94-1	
	2,4-Dichlorophenol	120-83 - 2	
	2,6-Dichlorophenol	87-65-0	
	4,4'-Methylenebis(2-chloroaniline)	101-14-4	
	Pentachlorophenol	87-86-5	
	2,3,4,6-Tetrachlorophenol	58-90-2	
	2,4,5-Trichlorophenol	95-95 - 4	
	2,4,6-Trichlorophenol	88-06-2	
	p-Chloro-m-cresol (4-Chloro-3-		
	methylphenol)	59-50-7	
	Methoxychlor	72-43-5	
	4-Bromophenyl phenyl ether	101-55-3	
	Pentachloronitrobenzene	82-68-8	
4.	Halogenated Aliphatic Compounds		
	Bromodichloromethane	75-27-4	
	Bromomethane	74-83-9	
	Carbon tetrachloride	56-23-5	
•	2-Chloro-1,3-butadiene	126-99-8	
	Chlorodibromomethane	124-48-1	
	Chloroethane	75-00-3	
	Chloroform	67-66-3	
	Chloromethane	74-87-3	
	3-Chloropropene	107-05-1	

BDAT LIST COMPOUNDS WITHIN EACH STRUCTURAL FUNCTIONAL GROUP

CAS Number

96-18-4

75-01-4

87-68-3

62-72-1

76-01-7

126-72-7

74-88-4

1888-71-7

4.	Halogenated Aliphatic Compounds (c	continued)
	1,2-Dibromo-3-chloropropane	96-12-8
	1,2-Dibromoethane	106-93-4
	Dibromomethane	74-95-3
	trans-1,4-Dichloro-2-butene	110-57-6
	Dichlorodifluoromethane	75-71-8
	1,1-Dichloroethane	75-34-3
	1,2-Dichloroethane	107-06-2
	1,1-Dichloroethene	75-35-4
	trans-1,2-Dichloroethene	156-60-5
	1,2-Dichloropropane	78-87-5
	trans-1,3-Dichloropropene	10061-02-6
	cis-1,3-Dichloropropene	10061-01-5
	Methylene chloride	75-09-2
	1,1,1,2-Tetrachloroethane	630-20-6
	1,1,2,2-Tetrachloroethane	79-34-5
	Tetrachloroethene	127-18-4
	Tribromomethane	75-25-2
	1,1,1-Trichloroethane	71-55-6
	1,1,2-Trichloroethane	79-00-5
	Trichloroethene	79-01-6

1,2,3-Trichloropropane

Tris(2,3-dibromopropyl)phosphate

Vinyl chloride

Iodomethane

Hexachlorobutadiene

Hexachloroethane

Hexachloropropene

Pentachloroethane

Group/Compound

5. <u>Halogenated Cyclic Aliphatics/Ethers/Esters/Ketones</u>

Aramite	140-57-8
Aldrin	309-00-2
alpha-BHC	319-84-6
beta-BHC	319-85-7

BDAT LIST COMPOUNDS WITHIN EACH STRUCTURAL FUNCTIONAL GROUP

arogh) comboure	Group,	/Compound
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CAS Number

5. <u>Halogenated Cyclic Aliphatics/Ethers/Esters/Ketones</u> (continued)

delta-BHC	319-86-8
gamma-BHC	58-89-9
Chlordane	57-74-9
Dieldrin	60-57-1
Endosulfan I	939-98-8
Endosulfan II	33213-06-5
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Isodrin	465-73-6
Kepone	143-50-0
Toxaphene	8001-35-2
2-Chloroethyl vinyl ether	110-75-8
Bis(2-chloroethoxy)methane	111-91-1
Bis(2-chloroethyl)ether	111-44-4
Bis(2-chloroisopropyl)ether	39638-32-9
3-Chloropropionitrile	542-76-7

II. Non-Halogenated Organics

6. <u>Nitrated Aromatic and Aliphatic Compounds</u>

2-sec-Butyl-4,6-dinitrophenol	88-85-7
1,4-Dinitrobenzene	100-25-4
4,6-Dinitro-o-cresol (2-Methyl-4,6-	
dinitrophenol)	534-52-1
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
5-Nitro-o-toluidine	95-65-8
Methyl parathion	298-00-0
Parathion	56-38-2
4-Nitroaniline	100-06-6
Nitrobenzene	98-95-3
4-Nitrophenol	100-02-7
2-Nitropropane	79-46-9

Group/Compour	nd	CAS Number	
7.	Simple Non-Polar Aromatics and		
	Toluene	108-88-3	
	1,2-Xylene	97-47-6	
	1,3-Xylene	108-38-3	
	1,4-Xylene	106-44-5	
	Isoafrole	120-58-1	
	Safrole	94-59-7	
	Pyridine	110-86-1	
	2-Picoline	109-06-8	
	Benzene	71-43-2	
	Ethylbenzene	100-41-4	
8.	Polynuclear Aromatics		
	Acenaphthylene	208-96-8	
	Acenaphthene	83-32-9	
	Anthracene	120-12-7	
	Benz(a)anthracene	56-55-3	
	Benzo(b)fluoranthene	205-99-2	
	Benzo(k)fluoranthene	207-08-9	
	Benzo(ghi)perylene	191-24-2	
	Benzo(a)pyrene	50-32-8	
	Chrysene	218-01-9	
	Dibenz(a,h)anthracene	53-70-3	
	Dibenzo(a,e)pyrene	192-65-4	
	Dibenzo(a,i)pyrene	106-46-7	
	Fluoranthene	206-44-0	
	Fluorene	86-73-7	
	<pre>Indenol(1,2,3-cd)pyrene</pre>	120-58-1	
	Methapyrilene	91-80-5	
	3-Methylcholanthrene	56-49-5	
	Naphthalene	91-20-13	
	Phenanthrene	85-01-8	
	Pyrene	129-00-0	

9. Other Polar Organic Compounds 2-Acetylaminofluorene 53-96-3 4-Aminobiphenyl 92-67-1 Aniline 62-53-3 3,3'-Dimethoxybenzidine 119-90-4 p-Dimethylaminoazobenzene 60-11-7 3,3'-Dimethylbenzidine 119-93-7 Di-n-propylnitrosamine 621-64-7 Diphenylamine 112-39-4 Diphenylnitrosamine 86-30-6 1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodien-butylamine 924-116-3 N-Nitrosodien-butylamine 924-116-3 N-Nitrosodimethylamine 62-75-9 N-Nitrosodimethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosomorpholine 58-89-2 N-Nitrosopiperidine 100-75-4 N-Nitrosopiperidine 930-55-2 Fhenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-64-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methacrylate 66-27-3 Accetophenone 96-86-2	Group/Compour	ad	CAS Number	
4-Aminobiphenyl 92-67-1 Aniline 62-53-3 3,3'-Dimethoxybenzidine 119-90-4 p-Dimethylaminoazobenzene 60-11-7 3,3'-Dimethylbenzidine 119-93-7 Di-n-propylnitrosamine 621-64-7 Diphenylamine 112-39-4 Diphenylnitrosamine 86-30-6 1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodithylamine 55-18-5 N-Nitrosomethylethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosopiperidine 100-75-4 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-95- 2-Butanone (methyl ethyl isobutyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3	9.	Other Polar Organic Compounds		
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3,3'-Dimethylbenzidine 119-93-7 Di-n-propylnitrosamine 621-64-7 Diphenylamine 112-39-4 Diphenylnitrosamine 86-30-6 1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodiethylamine 55-18-5 N-Nitrosodiethylamine 62-75-9 N-Nitrosomethylamine 10595-95-6 N-Nitrosomethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopyrrolidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Gresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-96-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methanesulfonate 66-27-3			60-11-7	
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Diphenylamine 112-39-4 Diphenylnitrosamine 86-30-6 1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodiethylamine 55-18-5 N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomethylethylamine 105-95-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopyrrolidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			621-64-7	
Diphenylnitrosamine 86-30-6 1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodiethylamine 55-18-5 N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosomorpholine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		·	112-39-4	
1,2-Diphenylhydrazine 122-66-7 1-Naphthylamine 134-32-7 2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodiethylamine 55-18-5 N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomethylethylamine 100-75-4 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			86-30-6	
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2-Naphthylamine 91-59-8 N-Nitrosodi-n-butylamine 924-116-3 N-Nitrosodiethylamine 55-18-5 N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			134-32-7	
N-Nitrosodi-n-butylamine 55-18-5 N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-95-2 Resorcinol 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			91-59-8	
N-Nitrosodimethylamine 62-75-9 N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			924-116-3	
N-Nitrosomethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopyrrolidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6		-	55-18-5	
N-Nitrosomethylethylamine 10595-95-6 N-Nitrosomorpholine 58-89-2 N-Nitrosopyredidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		-	62-75-9	
N-Nitrosomorpholine 58-89-2 N-Nitrosopiperidine 100-75-4 N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		_	10595-95-6	
N-Nitrosopyrrolidine 930-55-2 Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			58-89-2	
Phenacetin 62-44-2 o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		N-Nitrosopiperidine	100-75-4	
o-Cresol (2-Methylphenol) 95-48-7 p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		N-Nitrosopyrrolidine	930-55-2	
p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		* •	62-44-2	
p-Cresol (4-Methylphenol) 106-44-5 2,4-Dimethylphenol 105-67-9 Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		o-Cresol (2-Methylphenol)	95-48-7	
Phenol 108-95-2 Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			106-44-5	
Resorcinol 108-46-3 Acrolein 107-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		2,4-Dimethylphenol	105-67-9	
Acrolein 10.7-02-8 Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Pheno1	108-95-2	
Carbon disulfide 75-15-0 Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Resorcinol	108-46-3	
Ethyl methacrylate 97-63-2 Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Acrolein	107-02-8	
Isobutyl alcohol 78-83-1 Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Carbon disulfide	75-15-0	
Ethylene oxide 75-21-8 Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Ethyl methacrylate	97-63-2	
Benzenethiol 108-98-5 2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Isobutyl alcohol	78-83-1	
2-Butanone (methyl ethyl ketone) 78-93-3 4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Ethylene oxide	75-21-8	
4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		Benzenethiol	108-98-5	
4-Methyl-2-pentanone (methyl isobutyl ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3		2-Butanone (methyl ethyl ketone)	78-93-3	
ketone) 108-10-1 Methyl methacrylate 80-62-6 Methyl methanesulfonate 66-27-3			outyl	
Methyl methanesulfonate 66-27-3			_	
Methyl methanesulfonate 66-27-3		Methyl methacrylate	80-62-6	
			66-27-3	
		Acetophenone	96-86-2	

BDAT LIST COMPOUNDS WITHIN EACH STRUCTURAL FUNCTIONAL GROUP

er
-4
- 7
-7
- 2
- 3
- 2
-0
-4
- 8
-0
-7
-4
- 7
- 2
-9
-1
-1
- 3
-1
- 5
- 6
- 7
-1
- 5
- 3
- 7
- 3
- 8
-1
-0

7440-22-4

7440-62-2

Silver

Vanadium

roup/Compour	nd ·	CAS Number	
11.	Volatile Metals		
	Antimony	7440-36-0	
	Arsenic	7440-38-2	
	Cadmium	7440-43-9	
	Mercury	7439-97-6	
	Selenium	7782-49-2	
	Thallium	7440-28-0	
12.	Other Inorganics		
	Cyanide	57-12-5	
	Fluoride	16964-48-8	
	Sulfide	8496-25-8	

APPENDIX B

Group/Compound CA		nd C	AS Number	
Ι.	Hal	ogenated Organics		
	1.	Halogenated Non-Polar Aromatic Compo	ounds	
		Chlorobenzene Chlorobenzilate	108-90-7 570-15-6	
		2-Chloronapthalene 1,2-Dichlorobenzene	91-58-7 95-50-1	
		1,3-Dichlorobenzene 1,4-Dichlorobenzene	541-73-1 106-46-7	
		Hexachlorophene Hexachlorophene	118 - 74 - 1 70 - 3 - 04	
		Pentachlorobenzene 1,2,4,5-Tetrachlorobenzene	608-93-5 95-94-3	
		1,2,4-Trichlorobenzene Benzal Chloride	120-82-1 98-87-3	
		DDD DDE	72 - 54 - 8 72 - 55 - 9	
		DDT	50-29-3	
	2 -	Hexachlorocyclopentadiene	77-47-4	
	2a.	Dioxins/Furans and their Precursors		
		Hexachlorodibenzo-p-dioxins Hexachlorodibenzofurans	••	
		Pentachlorodibenzo-p-dioxins Pentachlorodibenzofurans	••	
		Tetrachlorodibenzo-p-dioxins Tetrachlorodibenzofurans	••	
		2,3,7,8-Tetrachlorodibenzo-p-dioxin 2,4-Dichlorophenoxyacetic acid	1746-01-6 94-75-7	
		2,4,5-TP (Silvex) 2,4,5-T	93-72-1 93-76-5	

BDAT LIST COMPOUNDS WITHIN EACH STRUCTURAL FUNCTIONAL GROUP

Compound		CAS Number
4.	Halogenated Aliphatic Compounds	(continued)
	1,2-Dibromo-3-chloropropane	96-12-8
	1,2-Dibromoethane	106-93-4
	Dibromomethane	74-95-3
	trans-1,4-Dichloro-2-butene	110-57-6
	Dichlorodifluoromethane	75-71-8
	1,1-Dichloroethane	75-34-3
	1,2-Dichloroethane	107-06-2
	l,1-Dichloroethene	75-35-4
	trans-1,2-Dichloroethene	156-60-5
	l,2-Dichloropropane	7 8-87 -5
	trans-1,3-Dichloropropene	10061-02-6
	cis-1,3-Dichloropropene	10061-01-5
	Methylene chloride	75-09-2
	1,1,1,2-Tetrachloroethane	630-20-6
	1,1,2,2-Tetrachloroethane	79-34-5
	Tetrachloroethene	127-18-4
	Tribromomethane	75-25-2
	1,1,1-Trichloroethane	71-55-6
	1,1,2-Trichloroethane	79-00-5
	Trichloroethene	79-01-6
	1,1,2-Trichloro-1,2,2-trifluoro	ethane 76-13-1
	Trichloromonofluoromethane	75-69-4
	1,2,3-Trichloropropane	96-18-4
	Vinyl chloride	75-01-4
	Hexachlorobutadiene	87-68-3
	Hexachloroethane	62-72-1
	Hexachloropropene	1888-71-7
	Pentachloroethane	76-01-7
	Tris(2,3-dibromopropyl)phosphat	e 126-72-7
	Iodomethane	74-88-4
5.	Halogenated Cyclic Aliphatics/E	thers/Esters/Ke
	Aramite	140-57-8
	Aldrin	309-00-2
	alpha-BHC	319-84-6
	beta-BHC	319-85-7

Group/Compound		CAS Number
7.	Simple Non-Polar Aromatics and	d Heterocyclics
	Toluene	108-88-3
	1,2-Xylene	97-47-6
	1,3-Xylene	108-38-3
	1,4-Xylene	106-44-5
	Isoafrole	120-58-1
	Safrole	94-59-7
	Pyridine	110-86-1
	2-Picoline	109-06-8
	Benzene	71-43-2
	Ethylbenzene	100-41-4
8.	Polynuclear Aromatics	
	Acenaphthylene	208-96-8
	Acenaphthene	83-32-9
	Anthracene	120-12-7
	Benz(a)anthracene	56-55-3
	Benzo(b)fluoranthene	205-99-2
	Benzo(k)fluoranthene	207-08-9
	Benzo(ghi)perylene	191-24-2
	Benzo(a)pyrene	50-32-8
	Chrysene	218-01-9
	Dibenz(a,h)anthracene	53-70-3
	Dibenzo(a,e)pyrene	192-65-4
	Dibenzo(a,i)pyrene	106-46-7
	Fluoranthene	206-44-0
	Fluorene	86-73-7
	Indenol(1,2,3-cd)pyrene	120-58-1
	Methapyrilene	91-80-5
	3-Methylcholanthrene	56-49-5
	Naphthalene	91-20-13
	Phenanthrene	85-01-8
	Pyrene	129-00-0

BDAT LIST COMPOUNDS WITHIN EACH STRUCTURAL FUNCTIONAL GROUP

Group/Co	ompoun	d	CAS Number		
	9.	Other Polar Organic Compounds	(continued)		
		p-Benzoquinone	106-51-4		
		Bis(2-ethylhexyl) phthalate	117-81-7		
		Butylbenzyl phthalate	85-68-7		
		Diethyl phthalate	84-66-2		
		Dimethyl phthalate	131-11-3		
		Di-n-butyl phthalate	84-74-2		
		Di-n-octyl phthalate	117-84-0		
		1,4-Naphthoquinone	130-15-4		
		Acetonitrile	75-05-8		
		Ethyl cyanide	107-12-0		
		Methacrylonitrile	126-98-7		
		Disulfoton	298-04-4		
		Famphur	52-85-7		
		Phorate	298-02-2		
		Phthalic anhydride	85-44-9		
		l,4-Dioxane	123-91-1		
		Acetone	67-64-1		
		n-Butanol	71-36-3		
		Cyclohexanone	108-94-1		
		2-Ethoxyethanol	110-80-5		
		Ethyl acetate	141-78-6		
		Ethyl ether	60-29-7		
		Methanol	67-56-1		
		Pronamide	23950-58-5		
III.	Inor	ganics			
	10.	Non-Volatile Metals			
		Barium	7440-39-3		
•		Beryllium	7440-41-7		
		Chromium (total and hexavalent) 7440-47-3		
		Copper	7440-50-8		
		Lead	7439-92-1		
		Nickel	7440-22-0		
		Silver	7440-22-4		

Vanadium

7440-62-2