# APPENDIX 2 CONTAINED-OUT DETERMINATION PROCEDURE FOR ENVIRONMENTAL MEDIA CONTAMINATED WITH RCRA HAZARDOUS WASTE

### 1.0 Purpose

This Contained-out Determination Procedure is intended to clarify the application of RCRA hazardous waste regulations to environmental media. Cleanup at RCRA facilities may involve the management of significant amounts of contaminated media, particularly soil and ground water. Under the EPA "contained-out" policy, media that contain listed hazardous wastes or exhibit a hazardous waste characteristic generally are subject to the same management standards as newly generated hazardous waste, including treatment, storage, and disposal facility (TSDF) standards and Land Disposal Restriction (LDR) requirements. These strict management standards sometimes do not correspond to the level of risk posed by environmental media, which is often contaminated with relatively small amounts of hazardous wastes. The purpose of this Contained-out Determination Procedure is to facilitate the management of such media and to encourage remediation of contaminated sites in Colorado.

This procedure does not establish cleanup criteria. The "Proposed Soil Remediation Objectives Policy Document" December 1997 (SRO Policy) identifies several options for establishing cleanup levels for media remaining in the ground. The Contained-out Determination Procedure defines the concentration below which environmental media contaminated with listed hazardous waste may be managed as something other than a hazardous waste. Note that this procedure applies to contaminated environmental media managed only in Colorado because other state waste management regulations may not recognize Colorado's contained-out determinations.

#### 2.0 Background

Environmental media includes soil, ground water, surface water, and sediments. Environmental media are subject to RCRA Subtitle C only if they contain listed hazardous waste and/or exhibit a characteristic of hazardous waste. Contaminated environmental media containing hazardous waste are subject to all applicable hazardous waste requirements until it can be demonstrated that they no longer contain hazardous waste when they no longer exhibit a characteristic of hazardous waste, when concentrations of hazardous constituents from listed hazardous wastes are below health-based and ground water protective levels, and all Land Disposal Restriction requirements are satisfied (if applicable). The determination that any given volume of contaminated media does not contain hazardous waste is called a "Contained-out" Determination. Contained-out determinations may be made before or after treatment of the contaminated environmental media.

#### 3.0 Contained-Out Determination Criteria

The Department has developed criteria upon which contained-out determinations for environmental media contaminated with hazardous waste can be made. These criteria are presented in Table A2-1. To be deemed nonhazardous, the media must meet the applicable "exit" criteria specified in Table A2-1 for both characteristically hazardous waste and listed hazardous waste. The exit levels for media contaminated with a listed hazardous waste are based on the proposed management of the waste: (1) unrestricted use, and (2) restricted use. Use of Table A2-1 is explained in more detail below.

# 3.1 Contained-Out Determination Criteria for Environmental Media That Exhibit a Characteristic of Hazardous Waste

In the case of media that exhibit only a characteristic of hazardous waste, once the characteristic is eliminated (e.g., through treatment), the media are no longer considered to "contain" hazardous waste. The media is nonhazardous if it does not exhibit a hazardous characteristic (ignitable, corrosive, reactive, or toxic) as defined in the Colorado Hazardous Waste Regulations (6 Code of Colorado Regulations 1007-3) Part 261, Subpart C. This determination can be made through relatively straightforward analytical testing. For the toxicity characteristic, the media is nonhazardous if the extract from a representative sample of the media does not exceed the levels in the hazardous waste regulations Section 261.24, Table 1 - Maximum Concentration of Contaminant for the Toxicity Characteristic, using the Toxicity Characteristic Leaching Procedure (TCLP). Although the contaminated media may no longer exhibit the characteristic of a hazardous waste, it still must be managed as a solid waste, unless the residual concentrations are at or below a level that pose no risk to human health and the environment based in an unrestricted use exposure scenario (unrestricted use contained-out determination, Option I of Table A2-1).

# 3.2 Contained-Out Determination Procedure for Environmental Media Contaminated With Listed Hazardous Waste

#### 3.2.1 Contained-Out: Unrestricted Use

Table A2-1 (Option I) lists the contained-out criteria that must be met in order for environmental media contaminated with hazardous waste to be rendered nonhazardous and which are then considered suitable for unrestricted use. Environmental media contaminated with a listed waste is no longer considered hazardous waste ("contained-out") if contaminant concentrations are at or below levels that pose no risk to human health (direct exposure health-based concentration calculated using a residential/unrestricted land use scenario) and the environment (generally, protection of ground water). Determinations made under this category are based on cleanup levels established in Table 1 of the Proposed Soil Remediation Objectives (SRO) Policy (for those constituents in SRO Policy Table 1), or EPA's Region IX Preliminary Remediation Goal Table (only for those constituents presently not in Table 1 of the SRO Policy). The Proposed Soil Remediation Objectives Policy lists generic soil cleanup values for Tier 2 sites (Table 1 in the SRO Policy) that are protective of both ground water quality and direct exposure under several land use settings. These values are based on conservative assumptions and are applicable to relatively small and simple sites that do not require site-specific risk assessments. The Region IX Preliminary Remediation Goal Table lists similar protective soil and water concentrations for a much larger number of chemicals. These tables and the State of Colorado Ground water Standards are used as the comparison criteria for soil/sediments and ground water/surface water, respectively, for contained-out determinations where the media will be considered suitable for unrestricted use. This determination can only be used for sites that meet the Tier 2 assumptions as defined in the Proposed Soil Remediation Objectives Policy. Contained-out determinations for more complex sites that do not meet the Tier 2 assumptions (e.g., where there are surface water impacts, adjacent property impacts, sensitive environments, areas of contamination greater than 100 square meters, etc.) may involve additional evaluation or calculation of site-specific objectives, and will require Department approval.

Using Table A2-1, environmental media no longer contain hazardous waste and are not subject to RCRA regulatory management requirements and are suitable for unrestricted use if they have been generated with, or treated to, contaminant levels:

- below those in Table A2-1, Option I; and
- below characteristic levels; and

• meeting all LDR requirements (if applicable, see Section 4).

Media that satisfy these exit criteria may be managed on-site as nonhazardous waste or disposed off-site. Soil may be used as site backfill, or alternatively, it can be sent off-site for use as landfill cover or disposed at landfills that do not have a liner or leachate collection system. Water may be poured on the ground at or near the point of generation. Discharges to surface water or drainages must be avoided because of the potential applicability of more stringent aquatic life water quality standards. In addition, surface water discharge could require a permit from the Water Quality Control Division.

It is important to note that, in order to be adequately protective for unrestricted use, this determination involves an evaluation for *all* site-related hazardous constituents that might be present in the media, not just the underlying constituents for which the contaminating waste was originally listed. The list of analytes to consider should be based on site-specific knowledge and/or previously collected data. If this information is limited or nonexistent, then the analyte suite should be designed conservatively (to be more complete), potentially including the majority or all of the Colorado hazardous waste regulations Part 261 Appendix VIII hazardous constituents. It is recommended that for the initial contained-out determination that will be made for a site, the analytical suite be reviewed and pre-approved by the Department, as well as the contained-out determination results themselves, prior to subsequent management of the media.

#### 3.2.2 Contained-Out: Restricted Use

The criteria underlying contained-out determinations made under this category are based on how the contaminated media will be managed off-site. Media deemed "contained-out" under this category must be managed in accordance with the guidelines and protocols specified in the Solid Waste Act. Media "contained-out" under Table A2-1 (Option II) will require disposal at a Subtitle D solid waste disposal facility that is permitted/licensed, is suitably lined, has a leachate collection system, and will be capped, maintained, and monitored upon closure, thereby minimizing or eliminating future releases to the environment, or in the case of ground water, disposal in a publicly owned treatment works (POTW), subject to pretreatment discharge limits.

The formulas used in Table A2-1 (Option II) include the use of human health-based and ground water protective look-up values from Table 1 of the Proposed Soil Remediation Objectives Policy for soil or EPA's Region IX Preliminary Remediation Goal Table and the use of the State Ground water Standards for water. Using Table A2-1, environmental media do not contain hazardous waste and are not subject to RCRA regulatory management requirements if they will be disposed in a Subtitle D landfill or publicly owned treatment works (POTW), and they have been generated with, or treated to, contaminant levels:

- below those in Table A2-1, Option II; and
- below characteristic levels; and
- meeting all LDR requirements (if applicable, see Section 4).

Note that the Option II evaluation must consider, at a minimum, each constituent in the media for which the contaminating hazardous waste was listed, constituents that are reasonably expected to be present in the contaminated media, and any possible breakdown products or impurities. Historical and process knowledge of how the hazardous waste constituents were originally produced must be applied. When the presence of listed hazardous waste cannot be reasonably established, the Contained-out Determination Procedure, Table A2-1 (Option II), does not apply and the media can only be hazardous if they exhibit a characteristic of hazardous waste. If the media are not characteristically hazardous, then the media may be disposed off-site at a Subtitle D facility or further evaluated under Table A2-1 (Option I) to determine whether they may be disposed on-site.

#### 4.0 Land Disposal Restrictions

Application of the Land Disposal Restrictions (LDRs) to contaminated environmental media must also be considered if the media will ultimately be land disposed. A flowchart that illustrates when LDRs apply to environmental media is presented in Flowchart A2-1. In general:

- if the contained-out determination indicates that the media are a hazardous waste when first generated, then LDRs apply;
- if the contained-out determination indicates that the media are not a hazardous waste when first generated, then LDRs don't apply. An exception to this is the case where media are contaminated with listed hazardous waste when the hazardous waste was land disposed *after* the effective date of the applicable LDR treatment standard (i.e., illegal land disposal). In this case, even though the contained-out determination indicates that the media do not contain hazardous waste, the media are still subject to LDRs because the LDRs had already attached to the contaminating hazardous waste. A list of the effective dates of the applicable LDR treatment standard may be found in Table 1 of Appendix VII in Part 268 of the Colorado Hazardous Waste Regulations, a copy of which is included as Attachment 1 at the end of this appendix.

LDRs attach only to prohibited hazardous waste (including hazardous waste contained in environmental media) when it is (1) generated, and (2) subsequently placed in a land disposal unit. Therefore, if contaminated environmental media are not removed from the land (i.e., "generated") LDRs do not apply. Similarly, if contaminated environmental media are removed from the land (i.e., "generated") yet never placed in a land disposal unit (e.g., they are legitimately recycled), LDRs do not apply.

Once LDRs attach, the LDR treatment standards continue to apply until they are met. That means that if the media are treated so that they no longer contain hazardous waste, the media must still meet LDR treatment standards for all of the regulated hazardous constituents and any other constituents listed in the Section 268.48 Table UTS that are reasonably expected to be present in the contaminated media, prior to land disposal. Additional information regarding LDRs can be found in Part 268 of the Colorado Hazardous Waste Regulations and in Appendix 3 of this guidance document.

Flowchart A2-2 of this Appendix illustrates the process for determining whether the LDRs apply to a contaminated soil, and if so, what the treatment requirements are. In general, the LDR treatment standard for soil requires that there be a 90 percent reduction in total constituent concentration (Section 268.49(c)(1)(i)), except in cases where the treatment would result in a concentration less than 10 times the Universal Treatment Standard (see the Section 268.48 Table UTS, reproduced as Attachment A2-2 in this Appendix). For liquids (e.g., purge water), the Table UTS wastewater standard must be met before it can be land disposed.

Please note that treatment of hazardous waste may require a permit and/or be subject to management standards depending on the type of treatment and the contaminant being treated. Please see the "Treatment of Hazardous Waste by Generators" guidance document, April 2000, for additional information.

### 5.0 Examples

Use of Table A2-1 to obtain contained-out determinations is demonstrated by the following three hypothetical examples.

#### EXAMPLE 1

A Denver manufacturing facility is involved in the cleanup of a site where trichloroethylene (TCE) spent solvent contamination is present in soil and ground water as a result of past operations. The facility is

proposing excavation and direct disposal of the soil at a Subtitle D landfill and disposal of recovered ground water to the local publicly owned treatment works (POTW). The facility is seeking a contained-out determination for the TCE contaminated soil and ground water so that it can be managed as nonhazardous waste. Representative soil samples submitted for volatile organic carbon (VOC) analysis contained 15 mg/kg TCE. Using Table A2-1 (Option II), the following calculations are derived:

#### SOIL CRITERIA

Nonhazardous if below A and either B1 or B2:

A.  $100 \times 2.99 \text{ mg/kg} = 299 \text{ mg/kg}$ 

AND (choose one of the following):

- B1. Limit from 6 CCR 1007-3 Section 261.24 Toxicity Characteristic Leaching Procedure (TCLP) Table = 0.5 mg/L (TCLP) or 10 mg/kg (total constituent analysis)<sup>1</sup>
- B2. NA (not applicable since TCE is on the toxicity characteristic (TC) list)

The TCE concentration in the soil sample, 15 mg/kg, is less than the A value of 299 mg/kg. For the second part of the criteria, the facility will have calculated a value of 10 mg/kg using method B1. Since the TCE concentration in the sample, 15 mg/kg, exceeds 10 mg/kg, the soil is not "contained-out" and must be managed as a listed hazardous waste.

The result, 10 mg/kg, is the minimum total concentration which must be present in the soil if it is to exceed the TC Limit; since the soil sample contained 15 mg/kg TCE, it would theoretically exceed the TC Limit of 0.5 mg/L. Alternatively, the facility could have opted to analyze the sample using the TCLP method (EPA Method 1311) directly and compared the resultant leachate concentration with the TC Limit. This may be advantageous at sites where the soil is high in clay and total organic carbon content and actual leachate concentrations may be less than theoretical values predicted using the mass analysis rule of thumb.

#### GROUND WATER CRITERIA

The TCE concentration in the water sample is 450 ug/L, which exceeds the Colorado Ground water Standards of 5 ug/L, respectively. Therefore, the ground water does not meet the exit levels established in Table A2-1 (Option I) and may not be managed on-site (i.e., disposed on the ground). For the sake of this example, let us assume that the Denver Metro POTW does currently have pretreatment standards established for TCE. If this is the case and this waste stream meets all their acceptance criteria, the ground water is "contained-out" under Option II and may be disposed as a nonhazardous waste in the POTW.

#### TREATMENT OPTIONS

In this example where the soil contains a listed hazardous waste because of the TCE concentration (15 mg/kg versus the 10 mg/kg "contained out" target), the facility has the option of treating the soil on-site in accordance with the generator treatment requirements of the Colorado Hazardous Waste Regulations (6 CCR 1007-3 Section 100.21(d)). Knowledge of when the release occurred shows that the hazardous

<sup>&</sup>lt;sup>1</sup> For option B1, the facility may use the total constituent analysis as a screen for the TCLP analysis. Using the equation in Note 8 of Table A2-1 and assuming 100% solid:

 $TCC = (19 \times 0.5 \text{ mg/L} \times 100/100 + 0.5 \text{mg/L}) \times L/\text{kg} = 10 \text{ mg/kg}$ 

waste constituents were disposed of into the environment <u>after</u> the effective date of the applicable LDR treatment standard. Since the soil is considered to be a hazardous waste, treatment would have to achieve the alternative LDR treatment standards for contaminated soil (Section 268.49 of the regulations). This treatment standard requires that there be a 90 percent reduction in total constituent concentration (Section 268.49(c)(1)(i)), except in cases where the treatment would result in a concentration less than 10 times the Universal Treatment Standard (UTS, 6.0 mg/kg for TCE).

In this example, the measured concentration is below the 10 times UTS limit ( $6.0 \text{ mg/kg} \times 10 = 60.0 \text{ mg/kg}$ , versus 15.0 mg/kg measured), therefore treatment is not required to satisfy LDRs. However, treatment is still necessary to satisfy the requirement under this contained-out determination that the soil should be below characteristic levels (0.5 mg/L, or approximately 10.0 mg/kg total constituent concentration using the equation in Note 8 of Table A2-1). Using readily available treatment options, the facility may reduce the TCE concentration in soil such that it is below 10 mg/kg and may be managed as a solid waste in accordance with Option II of Table A2-1. It may also be possible to reduce TCE concentrations even further, perhaps to the point of satisfying the Option I criteria for unrestricted use, in which case the soil may be redeposited on-site.

The same could have been done for the ground water if under Table A2-1 it was determined to be a hazardous waste (for example, the Denver Metro POTW refused to accept this wastewater). Under this scenario, the water could have been treated (air stripping or filtered through activated carbon) to reduce concentrations that would either meet the POTW acceptance criteria (Option II) or allow it to be discharged onto the ground (Option I).

#### EXAMPLE 2

A wood treatment facility is involved in the assessment of a site where soil contamination is present as a result of contamination with F034 listed waste. Investigation-derived waste consisting of drill cuttings has been generated at the site. A representative soil sample was submitted for volatile organic carbons (VOCs), semi-volatile organic carbons (SVOCs), and total metals analysis. Detected concentrations included 20 mg/kg arsenic, 45 mg/kg naphthalene, and 2.0 mg/kg TCE. The percent solids content is 85. A comparison of all site-related hazardous constituents to the Table A2-1 (Option I) criteria indicate that the arsenic, naphthalene, and TCE concentrations exceed these criteria and the soil is therefore not contained-out under Option I. Using Option II, at a minimum, the concentration of each constituent for which the contaminating hazardous waste was listed must be compared to the soil criteria for this category. The listing constituents for F034 listed waste (see Part 261 Appendix VII of Part 261 in the Colorado Hazardous Waste Regulations) that were present in the soil sample include arsenic and naphthalene. The origin of the TCE is unknown and is not required to be evaluated under Option II (however, the facility may elect to evaluate it under Option II as a more conservative approach). However, it must still be demonstrated that the soil does not exhibit the characteristic of toxicity for TCE. Using Table A2-1 (Option II), the following calculations are derived for the arsenic and naphthalene:

Nonhazardous if below A and either B1 or B2:

#### Arsenic:

A.  $100 \times 0.21 \text{ mg/kg} = 21 \text{ mg/kg}$ 

AND (choose one of the following):

B1. Limit from TC Table = 5 mg/L

B2. NA (not applicable since arsenic is on the TCLP list)

#### Naphthalene:

A.  $100 \times 289.1 \text{ mg/kg} = 28,910 \text{ mg/kg}$ 

AND (choose one of the following):

B1. NA (naphthalene not on TCLP List)

B2.  $100 \times 0.006 \text{ mg/L} = 0.6 \text{ mg/L}$ 

The arsenic concentration in the soil sample, 20 mg/kg, is less than the A value of 21 mg/kg. For the second part of the criteria, the facility must choose option B1 since arsenic is a metal on the TCLP list. The facility submits the sample for TCLP metals analysis and obtains a result of 1.0 mg/L, which is less than the TCLP Limit of 5 mg/L. Because the soil sample concentration is below both the A and selected B values, the soil is "contained-out" for arsenic.

The naphthalene concentration in the soil sample, 45 mg/kg, is less than the A value of 28,910 mg/kg. For the second part of the criteria, the facility chooses B2. To calculate what concentration in soil is necessary to generate a leaching extract of 0.6 mg/L, the facility first uses the total constituent analysis as a screen for the TCLP analysis using the equation in Note 8 of Table A2-1:

$$TCC = (19 \times 0.6 \text{ mg/L} \times 0.85 + 0.6 \text{ mg/L}) \times 1 \text{L/kg}$$
  
 $TCC = 10.3 \text{ mg/kg}$ 

Assuming that all the naphthalene is mobile, more than 10.3 mg/kg of this constituent must be present in the soil before it even has the potential to fail this criteria. This is less than the 45 mg/kg measured in a sample collected from the site, suggesting that the soil has the potential to mobilize and form a leachate. However, a TCLP analysis showed that the leach extract contained naphthalene at a concentration less than 0.6 mg/L. This difference between the theoretical and actual leaching potential is believed to be the result of a) properties of the soil that limit the mobility of naphthalene and b) the chemical characteristics of this constituent that also limits its mobility, neither of which is factored into the relative simple total constituent calculation. Based on the leaching test, the soil is "contained-out" for this constituent as well.

Finally, to evaluate whether the soil exhibits the toxicity characteristic for TCE, the facility uses the total constituent analysis as a screen for the TCLP analysis using the equation in Note 8 of Table A2-1:

$$TCC = (19 \times 0.5 \text{ mg/L} \times 0.85 + 0.5 \text{ mg/L}) \times 1 \text{L/kg}$$
  
 $TCC = 8.575 \text{ mg/kg}$ 

To exceed the TCLP Limit for TCE of 0.5 mg/L, the sample must contain at least 8.575 mg/kg of TCE. Since the sample contained only 2.0 mg/kg, it could not possibly exceed the TCLP Limit. Therefore, the soil does not exhibit the toxicity characteristic for TCE.

Since the soil was "contained-out" for arsenic and naphthalene under Option II, and it does not exhibit a hazardous characteristic, the soil is deemed nonhazardous for purpose of disposal in a Subtitle D landfill facility.

The example above was based on not having to comply with the LDRs because the release occurred before the effective date of the applicable LDR treatment standards. The applicable LDR treatment standard would need to be complied with if the site historical information showed that the release of these hazardous constituents occurred after the effective date of the treatment standards. However, the end result would be the same in this particular example. The TCLP test result for arsenic showed that this constituent did not exceed the 5.0 mg/L Universal Treatment Standard and therefore the LDR

requirements had been met. The measured concentration of naphthalene is greater than the Universal Treatment Standard (5.6 mg/kg), suggesting that the LDRs need to be complied with. However, the measured concentration is less than 10 times the Universal Treatment Standard for that constituent and therefore treatment is not required and the LDRs have been satisfied (see Section 238.49(c)(1)(iii) of the Colorado Hazardous Waste Regulations). The TCE concentration of 2.0 mg/kg is less than the 6.0 mg/kg Universal Treatment Standard, and once again the LDRs have been met.

#### **EXAMPLE 3**

Drummed drill cuttings from a site undergoing investigation are sampled and are found to contain the following constituents at their respective concentrations: PCE at 0.065 mg/kg, 1,1-DCE at 0.008 mg/kg, and TCE at 0.089 mg/kg. Since the soil was gathered from wells around a waste oil tank that was also used to dispose of these listed solvents, this medium is also heavily contaminated with oil and grease. A comparison with Table 1 of the Proposed Soil Remediation Objectives Policy Document shows that the chlorinated constituents were measured at levels that pose minimal risk to human health and the environment because the concentrations are a) below those that are acceptable for direct human exposure and b) below those that are protective of ground water quality. The measured levels are also below the applicable Universal Treatments Standards, and therefore the facility needn't comply with the LDRs prior to disposal.

The hazardous constituents in the soil meet Table A2-1, Option 1 criteria. The soil is therefore determined to be nonhazardous. Based on this determination, the facility decides to dispose of the drill cuttings at a solid waste disposal facility because of the elevated levels of oil and grease present in the soil.

Table A2-1 Contained-Out Determination Procedure for Environmental Media Contaminated With RCRA Hazardous Waste<sup>1</sup>

PROPOSED MANAGEMENT OF MEDIA	CONTAMINANT	SOIL/SEDIMENT CRITERIA	WATER CRITERIA
All Management Scenarios (must be managed in compliance with Subtitle D requirements, unless the levels meet the Option I criteria below)	Characteristically Hazardous Waste "D codes"  See CHWR 261 Subpart C	Nonhazardous if media does not exhibit a hazardous characteristic (ignitable, corrosive, reactive, or toxic [below levels in TC Table <sup>5</sup> using TCLP Test Method 1311])	Nonhazardous if the water does not exhibit a hazardous characteristic (ignitable, corrosive, reactive, or toxic [below levels in TC Table <sup>5</sup> using TCLP Test Method 1311])
Option I: Unrestricted Use	Listed Hazardous Waste "F,K,P,U codes"  See CHWR 261 Subpart D  All Site-Related Hazardous Constituents	Nonhazardous for unrestricted use if media concentrations are less than or equal to:  A. Direct exposure health-based concentration calculated using a Residential/Unrestricted Land use scenario <sup>2,3</sup> AND  B. A soil concentration protective of ground water <sup>2,4</sup>	Nonhazardous for unrestricted use if the concentrations in water are less than or equal to State Ground water Standard <sup>7</sup> or other health-based drinking water standard.
Option II: Restricted Use (limited to disposal in Subtitle D landfill or POTW only)	Listed Hazardous Waste "F,K,P,U codes"  See CHWR 261 Subpart D  Each Constituent for which the Hazardous Waste was Listed and Any Possible Breakdown Products or Impurities (See CHWR 261, Appendix VII to identify constituents for which "F" and "K" wastes are listed)	Nonhazardous for restricted use, if media concentrations are less than or equal to A and either B1 or B2:  A. 100 x direct exposure health-based concentration calculated using a Residential/Unrestricted Land use scenario <sup>2,3</sup> AND Choose one of the following:  B1. Limit from TC Table <sup>4,6</sup> (only for chemicals on the TC List)  B2. 100 x State Drinking/Ground Water Standard <sup>7</sup> or other health-based drinking water standard <sup>6</sup> (only for chemicals not on the TC List)	Nonhazardous for restricted use if the concentrations in water are less than or equal to the POTW pretreatment standard, or if it meets the POTW's acceptance criteria.

#### NOTES FOR TABLE A2-1:

CHWR Colorado Hazardous Waste Regulations TCLP Toxicity Characteristic Leachate Procedure

TC Toxicity Characteristic

POTW Publicly Owned Treatment Works

$$TCC = (19 \text{ x LIM x } \frac{\%\text{WS}}{100} + \text{LIM}) \text{ x C}$$
 where:

TCC = total constituent concentration, mg/kg

LIM = regulatory TCLP Limit for compound of interest, mg/L

%WS = percent wet solids

C = conversion factor to change concentration in mg/L to weight fraction, one L/kg of extract

See examples in Section 5.0 of the text that demonstrate the use of this formula.

<sup>&</sup>lt;sup>1</sup> All contained-out determinations made using this table assume that the Land Disposal Restrictions have been complied with, if applicable, prior to any land disposal. See Section 4.0 of this appendix.

<sup>&</sup>lt;sup>2</sup> From either Table 1 of the Proposed Soil Remediation Objectives (SRO) Policy Document, December 1997, (or any updated version of this document), or EPA's Region IX Preliminary Remediation Goal Table (only for those constituents presently not in Table 1 of the SRO Policy Document). Check EPA Region IX's web site for the current preliminary remediation goal concentrations (http://www.epa.gov.Region9/waste/sfund/prg/index.htm).

<sup>&</sup>lt;sup>3</sup> By total constituent analysis.

<sup>&</sup>lt;sup>4</sup> By total constituent analysis. For those inorganics in Table 1 of the Proposed Soil Remediation Objectives Policy, use TCLP (Test Method 1311) analysis or the TCLP substitution method as described in Note 8 of this table.

<sup>&</sup>lt;sup>5</sup> Per CHWR 261.24, Table 1, Maximum Concentration of Contaminants for the Toxicity Characteristic.

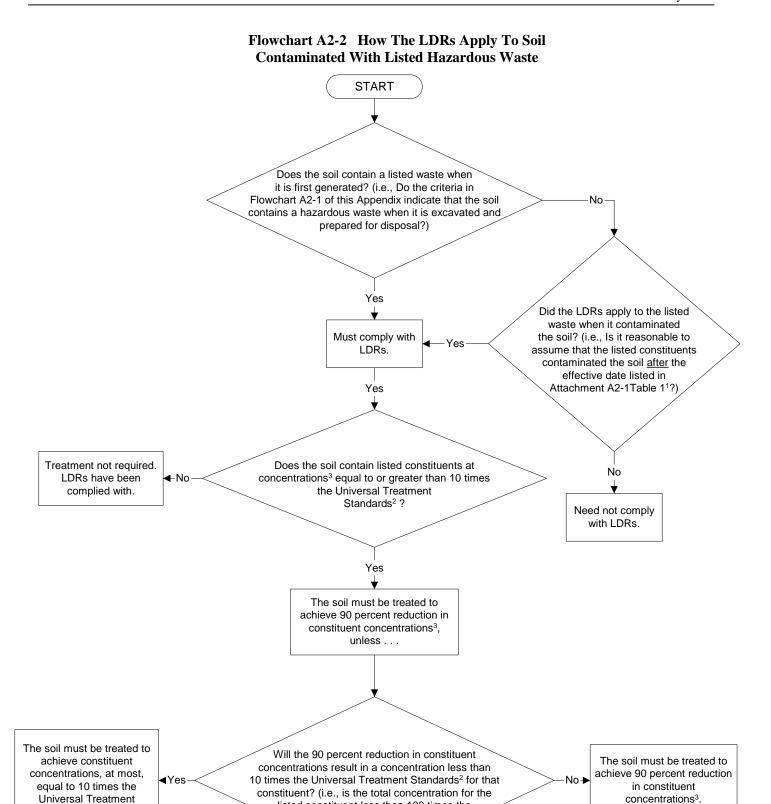
<sup>&</sup>lt;sup>6</sup> By TCLP, Test Method 1311 analysis. Total constituent analysis may substitute for an actual TCLP analysis using the formula described in Note 8 of this table.

<sup>&</sup>lt;sup>7</sup> Per the Colorado Department of Public Health - Water Quality Control Commission – "The Basic Standards for Ground water" 41.0 (5 CCR 1002-41).

<sup>&</sup>lt;sup>8</sup> A total constituent analysis that has been adjusted for percent wet solids may be substituted for an actual TCLP analysis using the following formula (Conrad and Deever, 1992):

ARE CONTAMINATED MEDIA CONSIDERED ARE CONTAMINATED MEDIA SUBJECT TO LDR TREATMENT STANDARDS? TO "CONTAIN" HAZARDOUS WASTE? If media fail one or more YES YES Because media contain HW characteristic test **ALL MEDIA REGARDLESS OF** SOURCE OF CONTAMINATION If media do not exhibit a Because media do not contain NO NO hazardous characteristic Because contaminated media If concentrations of hazardous contain prohibited HW when first YES YES constituents are determined to be removed from the land. LDRs **MEDIA CONTAMINATED** above health based levels attach WITH LISTED HW WHEN THE LISTED HW WAS LAND DISPOSED **BEFORE EFFECTIVE** Because contaminated media do DATE OF APPLICABLE not contain HW when first LDR TREATMENT If concentrations of hazardous NO NO **STANDARD** constituents are determined to be removed from the land, there is not prohibited HW to which LDRs below health based levels could attach If concentrations of hazardous YES constituents are determined to be above health based levels **MEDIA CONTAMINATED** WITH LISTED HW WHEN Because LDRs had already YES THE LISTED HW WAS attached to the contaminating HW LAND DISPOSED AFTER **EFFECTIVE DATE OF** If concentrations of hazardous APPLICABLE LDR NO constituents are determined to be TREATMENT STANDARD below health based levels If media fail one or more YES YES Because media contain HW characteristics tests **MEDIA CONTAMINATED** WITH CHARACTERISTIC **HW ONLY** If media does not exhibit a Because media do not contain NO NO hazardous characteristic

Flowchart A2-1: Contaminated Environmental Media – Do The LDRs Apply?



Standards 2,3.

listed constituent less than 100 times the

Universal Treatment Standard<sup>2</sup>?)

<sup>&</sup>lt;sup>1</sup> Attachment A2-1 Table 1 effective dates of surface disposed wastes (non-soil and debris) regulated in the LDRs, Appendix VII of Part 268 of the Colorado Hazardous Waste Regulations 6 CCR 1007-3.

<sup>&</sup>lt;sup>2</sup> Attachment A2-2 Table UTS of Section 268.48 of the Colorado Hazardous Waste Regulations 6 CCR 1007-3.

<sup>&</sup>lt;sup>3</sup> For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to TCLP) or 90 percent reduction in constituent concentrations (when a metal removal treatment technology is used).

# Attachment A2-1 Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the LDRs - Comprehensive List

### [6 CCR 1007-3 Part 268] Appendix VII

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
D001°	All (except High TOC Ignitable Liquids)	Aug. 9, 1993.
D001	High TOC Ignitable Liquids	Aug. 8, 1990.
D002°	All	Aug. 9, 1993.
D003	Newly identified surface-disposed elemental phosphorus processing wastes.	May 26, 2000.
D004	Newly identified D004 and mineral processing wastes.	August 24, 1998.
D004	Mixed radioactive/newly identified D004 or mineral processing wastes.	May 26, 2000.
D005	Newly identified D005 and mineral processing wastes.	August 24, 1998.
D005	Mixed radioactive/newly identified D005 or mineral processing wastes.	May 26, 2000.
D006	Newly identified D006 and mineral processing wastes.	August 24, 1998.
D006	Mixed radioactive/newly identified D006 or mineral processing wastes.	May 26, 2000.
D007	Newly identified D007 and mineral processing wastes.	August 24, 1998.
D007	Mixed radioactive/newly identified D007 or mineral processing wastes.	May 26, 2000.
D008	Newly identified D008 and mineral processing wastes.	August 24, 1998.
D008	Mixed radioactive/newly identified D008 or mineral processing wastes.	May 26, 2000.
D009	Newly identified D009 and mineral processing wastes.	August 24, 1998.
D009	Mixed radioactive/newly identified D009 or mineral processing wastes.	May 26, 2000.
D010	Newly identified D010 and mineral processing wastes.	August 24, 1998.
D010	Mixed radioactive/newly identified D010 or mineral processing wastes.	May 26, 2000.
D011	Newly identified D011 and mineral processing wastes.	August 24, 1998.
D011	Mixed radioactive/newly identified D011 or mineral processing wastes.	May 26, 2000.
D012 (that exhibit the toxicity characteristi c based on the TCLP) <sup>d</sup> .	All	Dec. 14, 1994.
D013 (that exhibit the toxicity characteristi	All	Dec. 14, 1994.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\tt LDRs}^a$  - Comprehensive List

LDRs <sup>a</sup> - Comprehensive List			
Waste code	Waste category	Effective date	
c based on the TCLP) <sup>d</sup> .			
D014 (that exhibit the toxicity characteristic based on the TCLP) <sup>d</sup> .	All	Dec. 14, 1994.	
D015 (that exhibit the toxicity characteristic based on the TCLP) <sup>d</sup> .	All	Dec. 14, 1994.	
D016 (that exhibit the toxicity characteristic based on the TCLP) <sup>d</sup> .	All	Dec. 14, 1994.	
D017 (that exhibit the toxicity characteristic based on the TCLP) <sup>d</sup> .	All	Dec. 14, 1994.	
D018	Mixed with radioactive wastes	Sep. 19, 1996.	
D018	All others	Dec. 19, 1994.	
D019	Mixed with radioactive wastes	Sep. 19, 1996.	
D019	All others	Dec. 19, 1994.	
D020	Mixed with radioactive wastes	Sep. 19, 1996.	
D020	All others	Dec. 19, 1994.	
D021	Mixed with radioactive wastes	Sep. 19, 1996.	
D021	All others	Dec. 19, 1994.	
D022	Mixed with radioactive wastes	Sep. 19, 1996.	
D022	All others	Dec. 19, 1994.	
D023	Mixed with radioactive wastes	Sep. 19, 1996.	
D023	All others	Dec. 19, 1994.	
D024	Mixed with radioactive wastes	Sep. 19, 1996.	
D024	All others	Dec. 19, 1994.	
D025	Mixed with radioactive wastes	Sep. 19, 1996.	
D025	All others	Dec. 19, 1994.	
D026	Mixed with radioactive wastes	Sep. 19, 1996.	
D026	All others	Dec. 19, 1994.	
D027	Mixed with radioactive wastes	Sep. 19, 1996.	

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
D027	All others	Dec. 19, 1994.
D028	Mixed with radioactive wastes	Sep. 19, 1996.
D028	All others	Dec. 19, 1994.
D029	Mixed with radioactive wastes	Sep. 19, 1996.
D029	All others	Dec. 19, 1994.
D030	Mixed with radioactive wastes	Sep. 19, 1996.
D030	All others	Dec. 19, 1994.
D031	Mixed with radioactive wastes	Sep. 19, 1996.
D031	All others	Dec. 19, 1994.
D032	Mixed with radioactive wastes	Sep. 19, 1996.
D032	All others	Dec. 19, 1994.
D033	Mixed with radioactive wastes	Sep. 19, 1994.
D033	All others	Dec. 19, 1994.
D034	Mixed with radioactive wastes	Sep. 19, 1996.
D034	All others	Dec. 19, 1994.
D035	Mixed with radioactive wastes	Sep. 19, 1996.
D035	All others	Dec. 19, 1994.
D036	Mixed with radioactive wastes	Sep. 19, 1996.
D036	All others	Dec. 19, 1994.
D037	Mixed with radioactive wastes	Sep. 19, 1996.
D037	All others	Dec. 19, 1994.
D038	Mixed with radioactive wastes	Sep. 19, 1996.
D038	All others	Dec. 19, 1994.
D039	Mixed with radioactive wastes	Sep. 19, 1996.
D039	All others	Dec. 19, 1994.
D040	Mixed with radioactive wastes	Sep. 19, 1996.
D040	All others	Dec. 19, 1994.
D041	Mixed with radioactive wastes	Sep. 19, 1996.
D041	All others	Dec. 19, 1994.
D042	Mixed with radioactive wastes	Sep. 19, 1996.
D042	All others	Dec. 19, 1994.
D043	Mixed with radioactive wastes	Sep. 19, 1996.
D043	All others	Dec. 19, 1994.
F001	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

	LDRs <sup>a</sup> - Comprehensive List  Waste category	Effective date
F001	All others	Nov. 8, 1986.
F002 (1,1,2-trichloro-ethane)	Wastewater and Nonwastewater	Aug. 8, 1990.
F002	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988.
F002	All others	Nov. 8, 1986.
F003	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988.
F003	All others	Nov. 8, 1986.
F004	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988.
F004	All others	Nov. 8, 1986.
F005 (benzene, 2- ethoxy ethanol, 2- nitropropane)	Wastewater and Nonwastewater	Aug. 8, 1990.
F005	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids	Nov. 8, 1988.
F005	All others	Nov. 8, 1986.
F006	Wastewater	Aug. 8, 1990.
F006	Nonwastewater	Aug. 8, 1988.
F006 (cyanides)	Nonwastewater	July 8, 1989.
F007	All	July 8, 1989.
F008	All	July 8, 1989.
F009	All	July 8, 1989.
F010	All	June 8, 1989.
F011 (cyanides)	Nonwastewater	Dec. 8, 1989.
F011	All others	July 8, 1989.
F012 (cyanides)	Nonwastewater	Dec. 8, 1989.
F012	All others	July 8, 1989.
F019	All	Aug. 8, 1990.
F020	All	Nov. 8, 1988.
F021	All	Nov. 8, 1988.
F022	All	Nov. 8, 1988.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
F023	All	Nov. 8, 1988.
F024 (metals)	Wastewater	June 8, 1989.
F024 (metals)	Nonwastewater	Aug. 8, 1990.
F024 <sup>b</sup>	All others	June 8, 1989.
F025	All	Aug. 8, 1990.
F026	All	Nov. 8, 1988.
F027	All	Nov. 8, 1988.
F028	All	Nov. 8, 1988.
F032	Mixed with radioactive wastes	May 12, 1999.
F032	All others	August 12, 1997.
F034	Mixed with radioactive wastes	May 12, 1999.
F034	All others	August 12, 1997.
F035	Mixed with radioactive wastes	May 12, 1999.
F035	All others	August 12, 1997.
F037	Not generated from surface impoundment cleanouts or closures	June 30, 1993.
F037	Generated from surface impoundment cleanouts or closures	June 30, 1994.
F037	Mixed with radioactive wastes	June 30, 1994.
F038	Not generated from surface impoundment cleanouts or closures	June 30, 1993.
F038	Generated from surface impoundment cleanouts or closures	June 30, 1994.
F038	Mixed with radioactive wastes	June 30, 1994.
F039	Wastewater	Aug. 8, 1990.
F039	Nonwastewater	May 8, 1992.
K001 (organics) <sup>b</sup>	All	Aug. 8, 1988.
K001	All others	Aug. 8, 1988.
K002	All	Aug. 8, 1990.
K003	All	Aug. 8, 1990.
K004	Wastewater	Aug. 8, 1990.
K004°	Nonwastewater	Aug. 8, 1988.
К005	Wastewater	Aug. 8, 1990.
K005°	Nonwastewater	June 8, 1989.
К006	All	Aug. 8, 1990.
К007	Wastewater	Aug. 8, 1990.
K007°	Nonwastewater	June 8, 1989.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^a$  - Comprehensive List

Waste code	Waste category	Effective date
K008	Wastewater	Aug. 8, 1990.
K008°	Nonwastewater	Aug. 8, 1988.
К009	All	June 8, 1989.
К010	All	June 8, 1989.
K011	Wastewater	Aug. 8, 1990.
K011	Nonwastewater	June 8, 1989.
K013	Wastewater	Aug. 8, 1990.
К013	Nonwastewater	June 8, 1989.
K014	Wastewater	Aug. 8, 1990.
K014	Nonwastewater	June 8, 1989.
K015	Wastewater	Aug. 8, 1988.
K015	Nonwastewater	Aug. 8, 1990.
К016	All	Aug. 8, 1988.
К017	All	Aug. 8, 1990.
К018	All	Aug. 8, 1988.
К019	All	Aug. 8, 1988.
К020	All	Aug. 8, 1988.
K021	Wastewater	Aug. 8, 1990.
K021°	Nonwastewater	Aug. 8, 1988.
К022	Wastewater	Aug. 8, 1990.
К022	Nonwastewater	Aug. 8, 1988.
К023	All	June 8, 1989.
K024	All	Aug. 8, 1988.
к025	Wastewater	Aug. 8, 1990.
К025 <sup>с</sup>	Nonwastewater	Aug. 8, 1988.
K026	All	Aug. 8, 1990.
к027	All	June 8, 1989.
K028 (metals)	Nonwastewater	Aug. 8, 1990.
к028	All others	June 8, 1989.
К029	Wastewater	Aug. 8, 1990.
К029	Nonwastewater	June 8, 1989.
к030	All	Aug. 8, 1988.
к031	Wastewater	Aug. 8, 1990.
к031	Nonwastewater	May 8, 1992.
к032	All	Aug. 8, 1990.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^a$  - Comprehensive List

LDRs° - Comprehensive List		
Waste code	Waste category	Effective date
К033	All	Aug. 8, 1990.
К034	All	Aug. 8, 1990.
К035	All	Aug. 8, 1990.
К036	Wastewater	June 8, 1989.
K036°	Nonwastewater	Aug. 8, 1988.
K037 <sup>b</sup>	Wastewater	Aug. 8, 1988.
K037	Nonwastewater	Aug. 8, 1988.
К038	All	June 8, 1989.
К039	All	June 8, 1989.
K040	All	June 8, 1989.
K041	All	Aug. 8, 1990.
K042	All	Aug. 8, 1990.
K043	All	June 8, 1989.
K044°	All	Aug. 8, 1988.
K045°	All	Aug. 8, 1988.
K046 (Nonreactive)	Nonwastewater	Aug. 8, 1988.
К046	All others	Aug. 8, 1990.
K047°	All	Aug. 8, 1988.
K048	Wastewater	Aug. 8, 1990.
K048	Nonwastewater	Nov. 8, 1990.
K049	Wastewater	Aug. 8, 1990.
K049	Nonwastewater	Nov. 8, 1990.
К050	Wastewater	Aug. 8, 1990.
К050	Nonwastewater	Nov. 8, 1990.
К051	Wastewater	Aug. 8, 1990.
К051	Nonwastewater	Nov. 8, 1990.
К052	Wastewater	Aug. 8, 1990.
К052	Nonwastewater	Nov. 8, 1990.
К060	Wastewater	Aug. 8, 1990.
K060°	Nonwastewater	Aug. 8, 1988.
К061	Wastewater	Aug. 8, 1990.
К061	Nonwastewater	June 30, 1992.
K062	All	Aug. 8, 1988.
K069 (Non- Calcium Sulfate) <sup>c</sup>	Nonwastewater	Aug. 8, 1988.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	LDRs <sup>a</sup> - Comprehensive List  Waste category	Effective date
к069	All others	Aug. 8, 1990.
К071	All	Aug. 8, 1990.
К073	All	Aug. 8, 1990.
K083	All	Aug. 8, 1990.
K084	Wastewater	Aug. 8, 1990.
K084	Nonwastewater	May 8, 1992.
К085	All	Aug. 8, 1990.
K086 (organics) <sup>b</sup>	All	Aug. 8, 1988.
К086	All others	Aug. 8, 1988.
К087	All	Aug. 8, 1988.
K088	Mixed with radioactive wastes	Apr. 8, 1998.
K088	All others	October 8, 1997.
K093	All	June 8, 1989.
K094	All	June 8, 1989.
К095	Wastewater	Aug. 8, 1990.
К095	Nonwastewater	June 8, 1989.
К096	Wastewater	Aug. 8, 1990.
К096	Nonwastewater	June 8, 1989.
К097	All	Aug. 8, 1990.
К098	All	Aug. 8, 1990.
К099	All	Aug. 8, 1988.
K100	Wastewater	Aug. 8, 1990.
K100°	Nonwastewater	Aug. 8, 1988.
K101 (organics)	Wastewater	Aug. 8, 1988.
K101 (metals)	Wastewater	Aug. 8, 1990.
K101 (organics)	Nonwastewater	Aug. 8, 1988.
K101 (metals)	Nonwastewater	May 8, 1992.
K102 (organics)	Wastewater	Aug. 8, 1988.
K102 (metals)	Wastewater	Aug. 8, 1990.
K102 (organics)	Nonwastewater	Aug. 8, 1988.
K102 (metals)	Nonwastewater	May 8, 1992.
K103	All	Aug. 8, 1988.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
K104	All	Aug. 8, 1988.
K105	All	Aug. 8, 1990.
К106	Wastewater	Aug. 8, 1990.
K106	Nonwastewater	May 8, 1992.
K107	Mixed with radioactive wastes	June 30, 1994.
к107	All others	Nov. 9, 1992.
K108	Mixed with radioactive wastes	June 30, 1994.
K108	All others	Nov. 9, 1992.
K109	Mixed with radioactive wastes	June 30, 1994.
K109	All others	Nov. 9, 1992.
K110	Mixed with radioactive wastes	June 30, 1994.
К110	All others	Nov. 9, 1992.
к111	Mixed with radioactive wastes	June 30, 1994.
К111	All others	Nov. 9, 1992.
К112	Mixed with radioactive wastes	June 30, 1994.
К112	All others	Nov. 9, 1992.
К113	All	June 8, 1989.
К114	All	June 8, 1989.
к115	All	June 8, 1989.
К116	All	June 8, 1989.
к117	Mixed with radioactive wastes	June 30, 1994.
К117	All others	Nov. 9, 1992.
К118	Mixed with radioactive wastes	June 30, 1994.
К118	All others	Nov. 9, 1992.
К123	Mixed with radioactive wastes	June 30, 1994.
К123	All others	Nov. 9, 1992.
К124	Mixed with radioactive wastes	June 30, 1994.
K124	All others	Nov. 9, 1992.
к125	Mixed with radioactive wastes	June 30, 1994.
К125	All others	Nov. 9, 1992.
К126	Mixed with radioactive wastes	June 30, 1994.
K126	All others	Nov. 9, 1992.
к131	Mixed with radioactive wastes	June 30, 1994.
к131	All others	Nov. 9, 1992.
K132	Mixed with radioactive wastes	June 30, 1994.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
К132	All others	Nov. 9, 1992.
K136	Mixed with radioactive wastes	June 30, 1994.
K136	All others	Nov. 9, 1992.
K141	Mixed with radioactive wastes	Sep. 19, 1996.
K141	All others	Dec. 19, 1994.
K142	Mixed with radioactive wastes	Sep. 19, 1996.
K142	All others	Dec. 19, 1994.
K143	Mixed with radioactive wastes	Sep. 19, 1996.
K143	All others	Dec. 19, 1994.
K144	Mixed with radioactive wastes	Sep. 19, 1996.
K144	All others	Dec. 19, 1994.
K145	Mixed with radioactive wastes	Sep. 19, 1996.
K145	All others	Dec. 19, 1994.
K147	Mixed with radioactive wastes	Sep. 19, 1996.
K147	All others	Dec. 19, 1994.
K148	Mixed with radioactive wastes	Sep. 19, 1996.
K148	All others	Dec. 19, 1994.
K149	Mixed with radioactive wastes	Sep. 19, 1996.
K149	All others	Dec. 19, 1994.
К150	Mixed with radioactive wastes	Sep. 19, 1996.
К150	All others	Dec. 19, 1994.
К151	Mixed with radioactive wastes	Sep. 19, 1996.
к151	All others	Dec. 19, 1994.
К156	Mixed with radioactive wastes	Apr. 8, 1998.
К156	All others	July 8, 1996.
к157	Mixed with radioactive wastes	Apr. 8, 1998.
к157	All others	July 8, 1996.
К158	Mixed with radioactive wastes	Apr. 8, 1998.
К158	All others	July 8, 1996.
К159	Mixed with radioactive wastes	Apr. 8, 1998.
К159	All others	July 8, 1996.
К160	Mixed with radioactive wastes	Apr. 8, 1998.
К160	All others	July 8, 1996.
K161	Mixed with radioactive wastes	Apr. 8, 1998.
K161	All others	July 8, 1996.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
P001	All	Aug 8, 1990.
P002	All	Aug. 8, 1990.
P003	All	Aug. 8, 1990.
P004	All	Aug. 8, 1990.
P005	All	Aug. 8, 1990.
P006	All	Aug. 8, 1990.
P007	All	Aug. 8, 1990.
P008	All	Aug. 8, 1990.
P009	All	Aug. 8, 1990.
P010	Wastewater	Aug. 8, 1990.
P010	Nonwastewater	May 8, 1992.
P011	Wastewater	Aug. 8, 1990.
P011	Nonwastewater	May 8, 1992.
P012	Wastewater	Aug. 8, 1990.
P012	Nonwastewater	May 8, 1992.
P013 (barium)	Nonwastewater	Aug. 8, 1990.
P013	All others	June 8, 1989.
P014	All	Aug. 8, 1990.
P015	All	Aug. 8, 1990.
P016	All	Aug. 8, 1990.
P017	All	Aug. 8, 1990.
P018	All	Aug. 8, 1990.
P020	All	Aug. 8, 1990.
P021	All	June 8, 1989.
P022	All	Aug. 8, 1990.
P023	All	Aug. 8, 1990.
P024	All	Aug. 8, 1990.
P026	All	Aug. 8, 1990.
P027	All	Aug. 8, 1990.
P028	All	Aug. 8, 1990.
P029	All	June 8, 1989.
P030	All	June 8, 1989.
P031	All	Aug. 8, 1990.
P033	All	Aug. 8, 1990.
P034	All	Aug. 8, 1990.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
P036	Wastewater	Aug. 8, 1990.
P036	Nonwastewater	May 8, 1992.
P037	All	Aug. 8, 1990.
P038	Wastewater	Aug. 8, 1990.
P038	Nonwastewater	May 8, 1992.
P039	All	June 8, 1989.
P040	All	June 8, 1989.
P041	All	June 8, 1989.
P042	All	Aug. 8, 1990.
P043	All	June 8, 1989.
P044	All	June 8, 1989.
P045	All	Aug. 8, 1990.
P046	All	Aug. 8, 1990.
P047	All	Aug. 8, 1990.
P048	All	Aug. 8, 1990.
P049	All	Aug. 8, 1990.
P050	All	Aug. 8, 1990.
P051	All	Aug. 8, 1990.
P054	All	Aug. 8, 1990.
P056	All	Aug. 8, 1990.
P057	All	Aug. 8, 1990.
P058	All	Aug. 8, 1990.
P059	All	Aug. 8, 1990.
P060	All	Aug. 8, 1990.
P062	All	June 8, 1989.
P063	All	June 8, 1989.
P064	All	Aug. 8, 1990.
P065	Wastewater	Aug. 8, 1990.
P065	Nonwastewater	May 8, 1992.
P066	All	Aug. 8, 1990.
P067	All	Aug. 8, 1990.
P068	All	Aug. 8, 1990.
P069	All	Aug. 8, 1990.
P070	All	Aug. 8, 1990.
P071	All	June 8, 1989.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
P072	All	Aug. 8, 1990.
P073	All	Aug. 8, 1990.
P074	All	June 8, 1989.
P075	All	Aug. 8, 1990.
P076	All	Aug. 8, 1990.
P077	All	Aug. 8, 1990.
P078	All	Aug. 8, 1990.
P081	All	Aug. 8, 1990.
P082	All	Aug. 8, 1990.
P084	All	Aug. 8, 1990.
P085	All	June 8, 1989.
P087	All	May 8, 1992.
P088	All	Aug. 8, 1990.
P089	All	June 8, 1989.
P092	Wastewater	Aug. 8, 1990.
P092	Nonwastewater	May 8, 1992.
P093	All	Aug. 8, 1990.
P094	All	June 8, 1989.
P095	All	Aug. 8, 1990.
P096	All	Aug. 8, 1990.
P097	All	June 8, 1989.
P098	All	June 8, 1989.
P099 (silver)	Wastewater	Aug. 8, 1990.
P099	All others	June 8, 1989.
P101	All	Aug. 8, 1990.
P102	All	Aug. 8, 1990.
P103	All	Aug. 8, 1990.
P104 (silver)	Wastewater	Aug. 8, 1990.
P104	All others	June 8, 1989.
P105	All	Aug. 8, 1990.
P106	All	June 8, 1989.
P108	All	Aug. 8, 1990.
P109	All	June 8, 1989.
P110	All	Aug. 8, 1990.
P111	All	June 8, 1989.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
P112	All	Aug. 8, 1990.
P113	All	Aug. 8, 1990.
P114	All	Aug. 8, 1990.
P115	All	Aug. 8, 1990.
P116	All	Aug. 8, 1990.
P118	All	Aug. 8, 1990.
P119	All	Aug. 8, 1990.
P120	All	Aug. 8, 1990.
P121	All	June 8, 1989.
P122	All	Aug. 8, 1990.
P123	All	Aug. 8, 1990.
P127	Mixed with radioactive wastes	Apr. 8, 1998.
P127	All others	July 8, 1996.
P128	Mixed with radioactive wastes	Apr. 8, 1998.
P128	All others	July 8, 1996.
P185	Mixed with radioactive wastes	Apr. 8, 1998.
P185	All others	July 8, 1996.
P188	Mixed with radioactive wastes	Apr. 8, 1998.
P188	All others	July 8, 1996.
P189	Mixed with radioactive wastes	Apr. 8, 1998.
P189	All others	July 8, 1996.
P190	Mixed with radioactive wastes	Apr. 8, 1998.
P190	All others	July 8, 1996.
P191	Mixed with radioactive wastes	Apr. 8, 1998.
P191	All others	July 8, 1996.
P192	Mixed with radioactive wastes	Apr. 8, 1998.
P192	All others	July 8, 1996.
P194	Mixed with radioactive wastes	Apr. 8, 1998.
P194	All others	July 8, 1996.
P196	Mixed with radioactive wastes	Apr. 8, 1998.
P196	All others	July 8, 1996.
P197	Mixed with radioactive wastes	Apr. 8, 1998.
P197	All others	July 8, 1996.
P198	Mixed with radioactive wastes	Apr. 8, 1998.
P198	All others	July 8, 1996.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
P199	Mixed with radioactive wastes	Apr. 8, 1998.
P199	All others	July 8, 1996.
P201	Mixed with radioactive wastes	Apr. 8, 1998.
P201	All others	July 8, 1996.
P202	Mixed with radioactive wastes	Apr. 8, 1998.
P202	All others	July 8, 1996.
P203	Mixed with radioactive wastes	Apr. 8, 1998.
P203	All others	July 8, 1996.
P204	Mixed with radioactive wastes	Apr. 8, 1998.
P204	All others	July 8, 1996.
P205	Mixed with radioactive wastes	Apr. 8, 1998.
P205	All others	July 8, 1996.
U001	All	Aug. 8, 1990.
U002	All	Aug. 8, 1990.
U003	All	Aug. 8, 1990.
U004	All	Aug. 8, 1990.
U005	All	Aug. 8, 1990.
U006	All	Aug. 8, 1990.
U007	All	Aug. 8, 1990.
U008	All	Aug. 8, 1990.
U009	All	Aug. 8, 1990.
U010	All	Aug. 8, 1990.
U011	All	Aug. 8, 1990.
U012	All	Aug. 8, 1990.
U014	All	Aug. 8, 1990.
U015	All	Aug. 8, 1990.
U016	All	Aug. 8, 1990.
U017	All	Aug. 8, 1990.
U018	All	Aug. 8, 1990.
U019	All	Aug. 8, 1990.
U020	All	Aug. 8, 1990.
U021	All	Aug. 8, 1990.
U022	All	Aug. 8, 1990.
U023	All	Aug. 8, 1990.
U024	All	Aug. 8, 1990.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

DO25	Waste code	Waste categ	ory Effective date
U027         Al1         Aug. 8, 1990.           U028         Al1         June 8, 1989.           U029         Al1         Aug. 8, 1990.           U030         Al1         Aug. 8, 1990.           U031         Al1         Aug. 8, 1990.           U032         Al1         Aug. 8, 1990.           U033         Al1         Aug. 8, 1990.           U034         Al1         Aug. 8, 1990.           U035         Al1         Aug. 8, 1990.           U036         Al1         Aug. 8, 1990.           U037         Al1         Aug. 8, 1990.           U038         Al1         Aug. 8, 1990.           U039         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990. <td></td> <td></td> <td></td>			
U028         Al1         June 8, 1989.           U029         Al1         Aug. 8, 1990.           U030         Al1         Aug. 8, 1990.           U031         Al1         Aug. 8, 1990.           U032         Al1         Aug. 8, 1990.           U033         Al1         Aug. 8, 1990.           U034         Al1         Aug. 8, 1990.           U035         Al1         Aug. 8, 1990.           U036         Al1         Aug. 8, 1990.           U037         Al1         Aug. 8, 1990.           U038         Al1         Aug. 8, 1990.           U039         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U048         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990. <td>U026</td> <td>All</td> <td>Aug. 8, 1990.</td>	U026	All	Aug. 8, 1990.
U029         Al1         Aug. 8, 1990.           U030         Al1         Aug. 8, 1990.           U031         Al1         Aug. 8, 1990.           U032         Al1         Aug. 8, 1990.           U033         Al1         Aug. 8, 1990.           U034         Al1         Aug. 8, 1990.           U035         Al1         Aug. 8, 1990.           U036         Al1         Aug. 8, 1990.           U037         Al1         Aug. 8, 1990.           U038         Al1         Aug. 8, 1990.           U039         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U048         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990.           U052         Al1         Aug. 8, 1990. <td>U027</td> <td>All</td> <td>Aug. 8, 1990.</td>	U027	All	Aug. 8, 1990.
U030         A11         Aug. 8, 1990.           U031         A11         Aug. 8, 1990.           U032         A11         Aug. 8, 1990.           U033         A11         Aug. 8, 1990.           U034         A11         Aug. 8, 1990.           U035         A11         Aug. 8, 1990.           U037         A11         Aug. 8, 1990.           U038         A11         Aug. 8, 1990.           U039         A11         Aug. 8, 1990.           U041         A11         Aug. 8, 1990.           U042         A11         Aug. 8, 1990.           U043         A11         Aug. 8, 1990.           U044         A11         Aug. 8, 1990.           U045         A11         Aug. 8, 1990.           U046         A11         Aug. 8, 1990.           U047         A11         Aug. 8, 1990.           U049         A11         Aug. 8, 1990.           U050         A11         Aug. 8, 1990.           U051         A11         Aug. 8, 1990.           U052         A11         Aug. 8, 1990.           U055         A11         Aug. 8, 1990.           U056         A11         Aug. 8, 1990. <td>U028</td> <td>All</td> <td>June 8, 1989.</td>	U028	All	June 8, 1989.
U031         All         Aug. 8, 1990.           U032         All         Aug. 8, 1990.           U033         All         Aug. 8, 1990.           U034         All         Aug. 8, 1990.           U035         All         Aug. 8, 1990.           U036         All         Aug. 8, 1990.           U037         All         Aug. 8, 1990.           U038         All         Aug. 8, 1990.           U041         All         Aug. 8, 1990.           U042         All         Aug. 8, 1990.           U043         All         Aug. 8, 1990.           U044         All         Aug. 8, 1990.           U045         All         Aug. 8, 1990.           U046         All         Aug. 8, 1990.           U047         All         Aug. 8, 1990.           U049         All         Aug. 8, 1990.           U050         All         Aug. 8, 1990.           U051         All         Aug. 8, 1990.           U052         All         Aug. 8, 1990.           U053         All         Aug. 8, 1990.           U055         All         Aug. 8, 1990.           U055         All         Aug. 8, 1990. <td>U029</td> <td>All</td> <td>Aug. 8, 1990.</td>	U029	All	Aug. 8, 1990.
U032         Al1         Aug. 8, 1990.           U033         Al1         Aug. 8, 1990.           U034         Al1         Aug. 8, 1990.           U035         Al1         Aug. 8, 1990.           U036         Al1         Aug. 8, 1990.           U037         Al1         Aug. 8, 1990.           U038         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U048         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990.           U052         Al1         Aug. 8, 1990.           U053         Al1         Aug. 8, 1990.           U055         Al1         Aug. 8, 1990.           U056         Al1         Aug. 8, 1990.           U057         Al1         Aug. 8, 1990. <td>U030</td> <td>All</td> <td>Aug. 8, 1990.</td>	U030	All	Aug. 8, 1990.
U033         All         Aug. 8, 1990.           U034         All         Aug. 8, 1990.           U035         All         Aug. 8, 1990.           U036         All         Aug. 8, 1990.           U037         All         Aug. 8, 1990.           U038         All         Aug. 8, 1990.           U041         All         Aug. 8, 1990.           U042         All         Aug. 8, 1990.           U043         All         Aug. 8, 1990.           U044         All         Aug. 8, 1990.           U045         All         Aug. 8, 1990.           U046         All         Aug. 8, 1990.           U048         All         Aug. 8, 1990.           U050         All         Aug. 8, 1990.           U051         All         Aug. 8, 1990.           U052         All         Aug. 8, 1990.           U053         All         Aug. 8, 1990.           U055         All         Aug. 8, 1990.           U056         All         Aug. 8, 1990.           U057         All         Aug. 8, 1990.           U058         All         Aug. 8, 1990.           U059         All         Aug. 8, 1990. <td>U031</td> <td>All</td> <td>Aug. 8, 1990.</td>	U031	All	Aug. 8, 1990.
U034         Al1         Aug. 8, 1990.           U035         Al1         Aug. 8, 1990.           U036         Al1         Aug. 8, 1990.           U037         Al1         Aug. 8, 1990.           U038         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U049         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990.           U052         Al1         Aug. 8, 1990.           U053         Al1         Aug. 8, 1990.           U055         Al1         Aug. 8, 1990.           U056         Al1         Aug. 8, 1990.           U057         Al1         Aug. 8, 1990.           U058         Al1         Aug. 8, 1990.           U059         Al1         Aug. 8, 1990. <td>U032</td> <td>All</td> <td>Aug. 8, 1990.</td>	U032	All	Aug. 8, 1990.
U035         All         Aug. 8, 1990.           U036         All         Aug. 8, 1990.           U037         All         Aug. 8, 1990.           U038         All         Aug. 8, 1990.           U041         All         Aug. 8, 1990.           U042         All         Aug. 8, 1990.           U043         All         Aug. 8, 1990.           U044         All         Aug. 8, 1990.           U045         All         Aug. 8, 1990.           U047         All         Aug. 8, 1990.           U048         All         Aug. 8, 1990.           U050         All         Aug. 8, 1990.           U051         All         Aug. 8, 1990.           U052         All         Aug. 8, 1990.           U055         All         Aug. 8, 1990.           U056         All         Aug. 8, 1990.           U057         All         Aug. 8, 1990.           U058         All         Aug. 8, 1990.           U059         All         Aug. 8, 1990.           U060         All         Aug. 8, 1990.	U033	All	Aug. 8, 1990.
0036         All         Aug. 8, 1990.           0037         All         Aug. 8, 1990.           0038         All         Aug. 8, 1990.           0039         All         Aug. 8, 1990.           0041         All         Aug. 8, 1990.           0042         All         Aug. 8, 1990.           0043         All         Aug. 8, 1990.           0044         All         Aug. 8, 1990.           0045         All         Aug. 8, 1990.           0046         All         Aug. 8, 1990.           0048         All         Aug. 8, 1990.           0050         All         Aug. 8, 1990.           0051         All         Aug. 8, 1990.           0052         All         Aug. 8, 1990.           0053         All         Aug. 8, 1990.           0055         All         Aug. 8, 1990.           0056         All         Aug. 8, 1990.           0057         All         Aug. 8, 1990.           0058         All         Aug. 8, 1990.           0059         All         Aug. 8, 1990.           0060         All         Aug. 8, 1990.	U034	All	Aug. 8, 1990.
U037       Al1       Aug. 8, 1990.         U038       Al1       Aug. 8, 1990.         U039       Al1       Aug. 8, 1990.         U041       Al1       Aug. 8, 1990.         U042       Al1       Aug. 8, 1990.         U043       Al1       Aug. 8, 1990.         U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       Aug. 8, 1990.         U059       Al1       Aug. 8, 1990.         U060       Al1       Aug. 8, 1990.	U035	All	Aug. 8, 1990.
U038         Al1         Aug. 8, 1990.           U039         Al1         Aug. 8, 1990.           U041         Al1         Aug. 8, 1990.           U042         Al1         Aug. 8, 1990.           U043         Al1         Aug. 8, 1990.           U044         Al1         Aug. 8, 1990.           U045         Al1         Aug. 8, 1990.           U046         Al1         Aug. 8, 1990.           U047         Al1         Aug. 8, 1990.           U049         Al1         Aug. 8, 1990.           U050         Al1         Aug. 8, 1990.           U051         Al1         Aug. 8, 1990.           U052         Al1         Aug. 8, 1990.           U055         Al1         Aug. 8, 1990.           U055         Al1         Aug. 8, 1990.           U056         Al1         Aug. 8, 1990.           U057         Al1         Aug. 8, 1990.           U058         Al1         Aug. 8, 1990.           U059         Al1         Aug. 8, 1990.           U060         Al1         Aug. 8, 1990.	U036	All	Aug. 8, 1990.
U039       Al1       Aug. 8, 1990.         U041       Al1       Aug. 8, 1990.         U042       Al1       Aug. 8, 1990.         U043       Al1       Aug. 8, 1990.         U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U046       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       Aug. 8, 1990.         U059       Al1       Aug. 8, 1990.         U060       Al1       Aug. 8, 1990.	U037	All	Aug. 8, 1990.
U041       Al1       Aug. 8, 1990.         U042       Al1       Aug. 8, 1990.         U043       Al1       Aug. 8, 1990.         U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U046       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       June 8, 1989.         U059       Al1       Aug. 8, 1990.         U060       Al1       Aug. 8, 1990.	U038	All	Aug. 8, 1990.
U042       Al1       Aug. 8, 1990.         U043       Al1       Aug. 8, 1990.         U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U046       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       June 8, 1989.         U059       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.	U039	All	Aug. 8, 1990.
U043       Al1       Aug. 8, 1990.         U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U046       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       June 8, 1989.         U059       Al1       Aug. 8, 1990.	U041	All	Aug. 8, 1990.
U044       Al1       Aug. 8, 1990.         U045       Al1       Aug. 8, 1990.         U046       Al1       Aug. 8, 1990.         U047       Al1       Aug. 8, 1990.         U048       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       June 8, 1989.         U059       Al1       Aug. 8, 1990.         U059       Al1       Aug. 8, 1990.         Aug. 8, 1990.       Aug. 8, 1990.	U042	All	Aug. 8, 1990.
U045       All       Aug. 8, 1990.         U046       All       Aug. 8, 1990.         U047       All       Aug. 8, 1990.         U048       All       Aug. 8, 1990.         U050       All       Aug. 8, 1990.         U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U050       All       Aug. 8, 1990.	U043	All	Aug. 8, 1990.
U046       All       Aug. 8, 1990.         U047       All       Aug. 8, 1990.         U048       All       Aug. 8, 1990.         U049       All       Aug. 8, 1990.         U050       All       Aug. 8, 1990.         U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U044	All	Aug. 8, 1990.
U047       All       Aug. 8, 1990.         U048       All       Aug. 8, 1990.         U049       All       Aug. 8, 1990.         U050       All       Aug. 8, 1990.         U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U045	All	Aug. 8, 1990.
U048       Al1       Aug. 8, 1990.         U049       Al1       Aug. 8, 1990.         U050       Al1       Aug. 8, 1990.         U051       Al1       Aug. 8, 1990.         U052       Al1       Aug. 8, 1990.         U053       Al1       Aug. 8, 1990.         U055       Al1       Aug. 8, 1990.         U056       Al1       Aug. 8, 1990.         U057       Al1       Aug. 8, 1990.         U058       Al1       June 8, 1989.         U059       Al1       Aug. 8, 1990.         U060       Al1       Aug. 8, 1990.	U046	All	Aug. 8, 1990.
U049       All       Aug. 8, 1990.         U050       All       Aug. 8, 1990.         U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U047	All	Aug. 8, 1990.
U050       All       Aug. 8, 1990.         U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U048	All	Aug. 8, 1990.
U051       All       Aug. 8, 1990.         U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U049	All	Aug. 8, 1990.
U052       All       Aug. 8, 1990.         U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U050	All	Aug. 8, 1990.
U053       All       Aug. 8, 1990.         U055       All       Aug. 8, 1990.         U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U051	All	Aug. 8, 1990.
U055       All       Aug. 8, 1990.         U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U052	All	Aug. 8, 1990.
U056       All       Aug. 8, 1990.         U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U053	All	Aug. 8, 1990.
U057       All       Aug. 8, 1990.         U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U055	All	Aug. 8, 1990.
U058       All       June 8, 1989.         U059       All       Aug. 8, 1990.         U060       All       Aug. 8, 1990.	U056	All	Aug. 8, 1990.
U059       All         U060       All         Aug. 8, 1990.         Aug. 8, 1990.	U057	All	Aug. 8, 1990.
U060 All Aug. 8, 1990.	U058	All	June 8, 1989.
	U059	All	Aug. 8, 1990.
U061 All Aug. 8, 1990.	U060	All	Aug. 8, 1990.
	U061	All	Aug. 8, 1990.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
U062	All	Aug. 8, 1990.
U063	All	Aug. 8, 1990.
U064	All	Aug. 8, 1990.
U066	All	Aug. 8, 1990.
U067	All	Aug. 8, 1990.
U068	All	Aug. 8, 1990.
U069	All	June 8, 1989.
U070	All	Aug. 8, 1990.
U071	All	Aug. 8, 1990.
U072	All	Aug. 8, 1990.
U073	All	Aug. 8, 1990.
U074	All	Aug. 8, 1990.
U075	All	Aug. 8, 1990.
U076	All	Aug. 8, 1990.
U077	All	Aug. 8, 1990.
U078	All	Aug. 8, 1990.
U079	All	Aug. 8, 1990.
U080	All	Aug. 8, 1990.
U081	All	Aug. 8, 1990.
U082	All	Aug. 8, 1990.
U083	All	Aug. 8, 1990.
U084	All	Aug. 8, 1990.
U085	All	Aug. 8, 1990.
U086	All	Aug. 8, 1990.
U087	All	June 8, 1989.
U088	All	June 8, 1989.
U089	All	Aug. 8, 1990.
U090	All	Aug. 8, 1990.
U091	All	Aug. 8, 1990.
U092	All	Aug. 8, 1990.
U093	All	Aug. 8, 1990.
U094	All	Aug. 8, 1990.
U095	All	Aug. 8, 1990.
U096	All	Aug. 8, 1990.
U097	All	Aug. 8, 1990.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	LDRs° - Comprehensive List	Effective date
U098	Waste category All	Aug. 8, 1990.
U099	All	Aug. 8, 1990.
U101	All	Aug. 8, 1990.
U102	All	June 8, 1989.
U103	All	Aug. 8, 1990.
U105	All	Aug. 8, 1990.
U106	All	Aug. 8, 1990.
U107	All	June 8, 1989.
U108	All	Aug. 8, 1990.
U109	All	Aug. 8, 1990.
U110	All	Aug. 8, 1990.
U111	All	Aug. 8, 1990.
U112	All	Aug. 8, 1990.
U113	All	Aug. 8, 1990.
U114	All	Aug. 8, 1990.
U115	All	Aug. 8, 1990.
U116	All	Aug. 8, 1990.
U117	All	Aug. 8, 1990.
U118	All	Aug. 8, 1990.
U119	All	Aug. 8, 1990.
U120	All	Aug. 8, 1990.
U121	All	Aug. 8, 1990.
U122	All	Aug. 8, 1990.
U123	All	Aug. 8, 1990.
U124	All	Aug. 8, 1990.
U125	All	Aug. 8, 1990.
U126	All	Aug. 8, 1990.
U127	All	Aug. 8, 1990.
U128	All	Aug. 8, 1990.
U129	All	Aug. 8, 1990.
U130	All	Aug. 8, 1990.
U131	All	Aug. 8, 1990.
U132	All	Aug. 8, 1990.
U133	All	Aug. 8, 1990.
U134	All	Aug. 8, 1990.
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Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
U135	All	Aug. 8, 1990.
U136	Wastewater	Aug. 8, 1990.
U136	Nonwastewater	May 8, 1992.
U137	All	Aug. 8, 1990.
U138	All	Aug. 8, 1990.
U140	All	Aug. 8, 1990.
U141	All	Aug. 8, 1990.
U142	All	Aug. 8, 1990.
U143	All	Aug. 8, 1990.
U144	All	Aug. 8, 1990.
U145	All	Aug. 8, 1990.
U146	All	Aug. 8, 1990.
U147	All	Aug. 8, 1990.
U148	All	Aug. 8, 1990.
U149	All	Aug. 8, 1990.
U150	All	Aug. 8, 1990.
U151	Wastewater	Aug. 8, 1990.
U151	Nonwastewater	May 8, 1992.
U152	All	Aug. 8, 1990.
U153	All	Aug. 8, 1990.
U154	All	Aug. 8, 1990.
U155	All	Aug. 8, 1990.
U156	All	Aug. 8, 1990.
U157	All	Aug. 8, 1990.
U158	All	Aug. 8, 1990.
U159	All	Aug. 8, 1990.
U160	All	Aug. 8, 1990.
U161	All	Aug. 8, 1990.
U162	All	Aug. 8, 1990.
U163	All	Aug. 8, 1990.
U164	All	Aug. 8, 1990.
U165	All	Aug. 8, 1990.
U166	All	Aug. 8, 1990.
U167	All	Aug. 8, 1990.
U168	All	Aug. 8, 1990.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Weater d-	LDRs - Comprehensive List	mee
Waste code U169	Waste category All	Effective date Aug. 8, 1990.
U170	All	Aug. 8, 1990.
U171	All	Aug. 8, 1990.
U172	All	Aug. 8, 1990.
U173	All	Aug. 8, 1990.
U174	All	Aug. 8, 1990.
U176	All	Aug. 8, 1990.
U177	All	Aug. 8, 1990.
U178	All	Aug. 8, 1990.
U179	All	Aug. 8, 1990.
U180	All	Aug. 8, 1990.
U181	All	Aug. 8, 1990.
U182	All	Aug. 8, 1990.
U183	All	Aug. 8, 1990.
U184	All	Aug. 8, 1990.
U185	All	Aug. 8, 1990.
U186	All	Aug. 8, 1990.
U187	All	Aug. 8, 1990.
U188	All	Aug. 8, 1990.
U189	All	Aug. 8, 1990.
U190	All	June 8, 1989.
U191	All	Aug. 8, 1990.
U192	All	Aug. 8, 1990.
U193	All	Aug. 8, 1990.
U194	All	Aug. 8, 1990.
U196	All	Aug. 8, 1990.
U197	All	Aug. 8, 1990.
U200	All	Aug. 8, 1990.
U201	All	Aug. 8, 1990.
U202	All	Aug. 8, 1990.
U203	All	Aug. 8, 1990.
U204	All	Aug. 8, 1990.
U205	All	Aug. 8, 1990.
U206	All	Aug. 8, 1990.
U207	All	Aug. 8, 1990.
	•	

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\tt LDRs}^a$  - Comprehensive List

LDRs <sup>a</sup> - Comprehensive List		
Waste code	Waste category	Effective date
U208	All	Aug. 8, 1990.
U209	All	Aug. 8, 1990.
U210	All	Aug. 8, 1990.
U211	All	Aug. 8, 1990.
U213	All	Aug. 8, 1990.
U214	All	Aug. 8, 1990.
U215	All	Aug. 8, 1990.
U216	All	Aug. 8, 1990.
U217	All	Aug. 8, 1990.
U218	All	Aug. 8, 1990.
U219	All	Aug. 8, 1990.
U220	All	Aug. 8, 1990.
U221	All	June 8, 1989.
U222	All	Aug. 8, 1990.
U223	All	June 8, 1989.
U225	All	Aug. 8, 1990.
U226	All	Aug. 8, 1990.
U227	All	Aug. 8, 1990.
U228	All	Aug. 8, 1990.
U234	All	Aug. 8, 1990.
U235	All	June 8, 1989.
U236	All	Aug. 8, 1990.
U237	All	Aug. 8, 1990.
U238	All	Aug. 8, 1990.
U239	All	Aug. 8, 1990.
U240	All	Aug. 8, 1990.
U243	All	Aug. 8, 1990.
U244	All	Aug. 8, 1990.
U246	All	Aug. 8, 1990.
U247	All	Aug. 8, 1990.
U248	All	Aug. 8, 1990.
U249	All	Aug. 8, 1990.
U271	Mixed with radioactive wastes	Apr. 8, 1998.
U271	All others	July 8, 1996.
U277	Mixed with radioactive wastes	Apr. 8, 1998.
		1

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
U277	All others	July 8, 1996.
U278	Mixed with radioactive wastes	Apr. 8, 1998.
U278	All others	July 8, 1996.
U279	Mixed with radioactive wastes	Apr. 8, 1998.
U279	All others	July 8, 1996.
U280	Mixed with radioactive wastes	Apr. 8, 1998.
U280	All others	July 8, 1996.
U328	Mixed with radioactive wastes	June 30, 1994.
U328	All others	Nov. 9, 1992.
U353	Mixed with radioactive wastes	June 30, 1994.
U353	All others	Nov. 9, 1992.
U359	Mixed with radioactive wastes	June 30, 1994.
U359	All others	Nov. 9, 1992.
U364	Mixed with radioactive wastes	Apr. 8, 1998.
U364	All others	July 8, 1996.
U365	Mixed with radioactive wastes	Apr. 8, 1998.
U365	All others	July 8, 1996.
U366	Mixed with radioactive wastes	Apr. 8, 1998.
U366	All others	July 8, 1996.
U367	Mixed with radioactive wastes	Apr. 8, 1998.
U367	All others	July 8, 1996.
U372	Mixed with radioactive wastes	Apr. 8, 1998.
U372	All others	July 8, 1996.
U373	Mixed with radioactive wastes	Apr. 8, 1998.
U373	All others	July 8, 1996.
U375	Mixed with radioactive wastes	Apr. 8, 1998.
U375	All others	July 8, 1996.
U376	Mixed with radioactive wastes	Apr. 8, 1998.
U376	All others	July 8, 1996.
U377	Mixed with radioactive wastes	Apr. 8, 1998.
U377	All others	July 8, 1996.
U378	Mixed with radioactive wastes	Apr. 8, 1998.
U378	All others	July 8, 1996.
U379	Mixed with radioactive wastes	Apr. 8, 1998.
U379	All others	July 8, 1996.

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\rm LDRs}^{\rm a}$  - Comprehensive List

Waste code	Waste category	Effective date
U381	Mixed with radioactive wastes	Apr. 8, 1998.
U381	All others	July 8, 1996.
U382	Mixed with radioactive wastes	Apr. 8, 1998.
U382	All others	July 8, 1996.
U383	Mixed with radioactive wastes	Apr. 8, 1998.
U383	All others	July 8, 1996.
U384	Mixed with radioactive wastes	Apr. 8, 1998.
U384	All others	July 8, 1996.
U385	Mixed with radioactive wastes	Apr. 8, 1998.
U385	All others	July 8, 1996.
U386	Mixed with radioactive wastes	Apr. 8, 1998.
U386	All others	July 8, 1996.
U387	Mixed with radioactive wastes	Apr. 8, 1998.
U387	All others	July 8, 1996.
U389	Mixed with radioactive wastes	Apr. 8, 1998.
U389	All others	July 8, 1996.
U390	Mixed with radioactive wastes	Apr. 8, 1998.
U390	All others	July 8, 1996.
U391	Mixed with radioactive wastes	Apr. 8, 1998.
U391	All others	July 8, 1996.
U392	Mixed with radioactive wastes	Apr. 8, 1998.
U392	All others	July 8, 1996.
U393	Mixed with radioactive wastes	Apr. 8, 1998.
U393	All others	July 8, 1996.
U394	Mixed with radioactive wastes	Apr. 8, 1998.
U394	All others	July 8, 1996.
U395	Mixed with radioactive wastes	Apr. 8, 1998.
U395	All others	July 8, 1996.
U396	Mixed with radioactive wastes	Apr. 8, 1998.
U396	All others	July 8, 1996.
U400	Mixed with radioactive wastes	Apr. 8, 1998.
U400	All others	July 8, 1996.
U401	Mixed with radioactive wastes	Apr. 8, 1998.
U401	All others	July 8, 1996.
U402	Mixed with radioactive wastes	Apr. 8, 1998.
	I	1

Table 1. -- Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the  ${\tt LDRs}^a$  - Comprehensive List

Waste code	Waste category	Effective date
U402	All others	July 8, 1996.
U403	Mixed with radioactive wastes	Apr. 8, 1998.
U403	All others	July 8, 1996.
U404	Mixed with radioactive wastes	Apr. 8, 1998.
U404	All others	July 8, 1996.
U407	Mixed with radioactive wastes	Apr. 8, 1998.
U407	All others	July 8, 1996.
U409	Mixed with radioactive wastes	Apr. 8, 1998.
U409	All others	July 8, 1996.
U410	Mixed with radioactive wastes	Apr. 8, 1998.
U410	All others	July 8, 1996.
U411	Mixed with radioactive wastes	Apr. 8, 1998.
U411	All others	July 8, 1996.

FOOTNOTE: <sup>a</sup> This table does not include mixed radioactive wastes (from the First, Second, and Third rules) which received a national capacity variance until May 8, 1992. This table also does not include contaminated soil and debris wastes.

FOOTNOTE:  $^{\rm b}$  The standard was revised in the Third Third Final Rule (55 FR 22520, June 1, 1990).

FOOTNOTE:  $^{c}$  The standard was revised in the Third Third Emergency Rule (58 FR 29860, May 24, 1993); the original effective date was August 8, 1990

FOOTNOTE:  $^d$  The standard was revised in the Phase II Final Rule (59 FR 47982, Sept. 19, 1994); the original effective date was August 8, 1990.

## Attachment A2-2 Table UTS - Universal Treatment Standards

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	${ m CAS}^1$ No.	Wastewater standard. Concentrati on in mg/1 <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg³ unless noted as "mg/l TCLP"
I. Organic constituents:			
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	38
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23
Acrylonitrile	107-13-1	0.24	84
Aldicarb sulfone <sup>6</sup>	1646-88-4	0.056	0.28
Aldrin	309-00-2	0.021	0.066
4-Aminobiphenyl	92-67-1	0.13	NA
Aniline	62-53-3	0.81	14
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-84-6	0.00014	0.066
beta-BHC	319-85-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Barban <sup>6</sup>	101-27-9	0.056	1.4
Bendiocarb <sup>6</sup>	22781-23-3	0.056	1.4
${\tt Benomyl^6}$	17804-35-2	0.056	1.4
Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
<pre>Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)</pre>	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
Bromodichloromethane	75-27-4	0.35	15
Bromomethane/Methyl bromide	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butylate <sup>6</sup>	2008-41-5	0.042	1.4
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
Carbaryl <sup>6</sup>	63-25-2	0.006	0.14
${\tt Carbenzadim}^{\tt G}$	10605-21-7	0.056	1.4
Carbofuran <sup>6</sup>	1563-66-2	0.006	0.14
Carbofuran phenol <sup>6</sup>	1563-38-2	0.056	1.4
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Carbosulfan <sup>6</sup>	55285-14-8	0.028	1.4
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
p-Chloro-m-cresol	59-50-7	0.018	14
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloromethane (Methyl chloride)	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chlorophenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish	108-39-4	0.77	5.6

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
from p-cresol)			
<pre>p-Cresol (difficult to distinguish   from m-cresol)</pre>	106-44-5	0.77	5.6
${\it m-Cumenyl}$ ${\it methylcarbamate}^6$	64-00-6	0.056	1.4
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6.0
o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94-75-7	0.72	10
1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.20	28
p-Dimethylaminoazobenzene	60-11-7	0.13	NA
2-4-Dimethyl phenol	105-67-9	0.036	14

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14
1,4-Dioxane	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-3	0.017	6.2
Dithiocarbamates (total) <sup>6</sup>	NA	0.028	28
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
EPTC <sup>6</sup>	759-94-4	0.042	1.4
Ethyl acetate	141-78-6	0.34	33
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Formetanate hydrochloride <sup>6</sup>	23422-53-9	0.056	1.4
Heptachlor	76-44-8	0.0012	0.066

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg³ unless noted as "mg/l TCLP"
Heptachlor epoxide	1024-57-3	0.016	0.066
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorobutadiene	87-68-3	0.055	5.6
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30
Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepone	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	0.75 mg/l TCLP
Methapyrilene	91-80-5	0.081	1.5
Methiocarb <sup>6</sup>	2032-65-7	0.056	1.4
Methomy1 <sup>6</sup>	16752-77-5	0.028	0.14
Methoxychlor	72-43-5	0.25	0.18
3-Methylcholanthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methansulfonate	66-27-3	0.018	NA
Methyl parathion	298-00-0	0.014	4.6
Metolcarb <sup>6</sup>	1129-41-5	0.056	1.4
Mexacarbate <sup>6</sup>	315-18-4	0.056	1.4
Molinate <sup>6</sup>	2212-67-1	0.042	1.4
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/1 <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
o-Nitroaniline	88-74-4	0.27	14
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14
5-Nitro-o-toluidine	99-55-8	0.32	28
o-Nitrophenol	88-75-5	0.028	13
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitrosodimethylamine	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
Oxamyl <sup>6</sup>	23135-22-0	0.056	0.28
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
Pebulate <sup>6</sup>	1114-71-2	0.042	1.4
Pentachlorobenzene	608-93-5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76-01-7	0.055	6.0
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
Phorate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28
Phthalic anhydride	85-44-9	0.055	28
Physostigmine <sup>6</sup>	57-47-6	0.056	1.4
Physostigmine salicylate $^6$	57-64-7	0.056	1.4
Promecarb <sup>6</sup>	2631-37-0	0.056	1.4
Pronamide	23950-58-5	0.093	1.5

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
Propham <sup>6</sup>	122-42-9	0.056	1.4
Propoxur <sup>6</sup>	114-26-1	0.056	1.4
Prosulfocarb <sup>6</sup>	52888-80-9	0.042	1.4
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex (2,4,5-TP)	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Thiodicarb <sup>6</sup>	59669-26-0	0.019	1.4
${\tt Thiophanate-methyl}^6$	23564-05-8	0.056	1.4
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Triallate <sup>6</sup>	2303-17-5	0.042	1.4
Tribromomethane/Bromoform	75-25-2	0.63	15
2,4,6-Tribromophenol	118-79-6	0.035	7.4
1,2,4-Trichlorobenzene	120-82-1	0.055	19
1,1,1-Trichloroethane	71-55-6	0.054	6.0
1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichloromonofluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
Triethylamine <sup>6</sup>	101-44-8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.11	0.10
Vernolate <sup>6</sup>	1929-77-7	0.042	1.4

[6 CCR 1007-3 Section] 268.48 Table UTS - Universal Treatment Standards

Regulated constituent - common name	$\mathtt{CAS}^1$ No.	Wastewater standard. Concentrati on in mg/l <sup>2</sup>	Nonwastewater standard. Concentration in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
Vinyl chloride	75-01-4	0.27	6.0
<pre>Xylenes-mixed isomers (sum of o-,m-,   and p-xylene concentrations)</pre>	1330-20-7	0.32	30
II. Inorganic Constituents:			
Antimony	7440-36-0	1.9	1.15 mg/l TCLP
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
Barium	7440-39-3	1.2	21 mg/l TCLP
Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total) <sup>4</sup>	57-12-5	1.2	590
Cyanides (Amenable) <sup>4</sup>	57-12-5	0.86	30
Fluoride <sup>5</sup>	16984-48-8	35	NA
Lead	7439-92-1	0.69	0.75 mg/l TCLP
Mercury-Nonwastewater from Retort	7439-97-6	NA	0.20 g/l TCLP
Mercury-All Others	7439-97-6	0.15	0.025 mg/l TCLP
Nickel	7440-02-0	3.98	11 mg/l TCLP
Selenium <sup>7</sup>	7782-49-2	0.82	5.7 mg/l TCLP
Silver	7440-22-4	0.43	0.14 mg/l TCLP
Sulfide⁵	18496-25-8	14	NA
Thallium	7440-28-0	1.4	0.20 mg/l TCLP
Vanadium <sup>5</sup>	7440-62-2	4.3	1.6 mg/l TCLP
Zinc <sup>5</sup>	7440-66-6	2.61	4.3 mg/l TCLP

<sup>&</sup>lt;sup>1</sup> CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

 $<sup>^{2}</sup>$  Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of Part 264, Subpart O or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in '268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

<sup>&</sup>lt;sup>4</sup> Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in ' 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

- $^{5}$  These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at ' 268.2(i).
- $^6$  Between August 26, 1998, and March 4, 1999, these constituents are not "underlying hazardous constituents" as defined at ' 268.2(i) of this part.
- <sup>7</sup> This constituent is not an underlying hazardous constituent as defined at ' 268.2(i) of this part because its UTS level is greater than its TC level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

Note: NA means not applicable.

### References

- Colorado Department of Public Health and Environment. October 2001. *Guide to Generator Requirements of the Colorado Hazardous Waste Regulations*.
- Colorado Department of Public Health and Environment. December 1997. *Proposed Soil Remediation Objectives Policy Document.*
- Colorado Department of Public Health and Environment Water Quality Control Division. *The Basic Standards for Ground water*, 41.0 (5 CCR 1002-41).
- Conrad, D.L. and W.R. Deever, Save Test Dollars Using TCLP Alternative, EC&S, 14 May-June 1992.