Memorandum

MIAMI-DADE COUNTY

Date: March 7, 2006

To: Honorable Chairman Joe A. Martinez and Members, Board of County Commissioners

Agenda Item No. 7(D)

From: George M. Burgess, County Manager

Subject: Ordinance Amending Portions of Section 24-44(2) of the Code of Miami-Dade County, Florida, Relating to Clean-up Target Levels and Procedures for Sites or Contaminants, Point of Compliance, Notification, Source Removal, Assessment Procedures, Site Closure, Contaminated Site Monitoring Only Plans, Risk Assessment Reports, and Remedial Action Plans; Repealing and Enacting Portions of Section 24-44(2) of the Code of Miami-Dade County, Florida, Relating to Groundwater, Surface Water, and Soil Clean-up Target Levels

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This is a substitute item correcting the groundwater cleanup target levels (CTLs) in the Ordinance for chlorine (from 700 to 4000 ug/l), chlorite (from 210 to 1000 ug/l), and bromate (from 0.05 to 10 ug/l); correcting the CTLs in the Ordinance for bromate (0.0002 to 0.04 mg/kg) and chromium (210 to 310 mg/kg), and replacing pages due to typographical errors and omissions in some of the evaluation methods described in the technical report attached to the Ordinance.

RECOMMENDATION

It is recommended that the Board approve the attached Ordinance Amending Portions of Section 24-44(2) of the Code of Miami-Dade County, Florida (Code), Relating to Clean-up Target Levels and Procedures for Sites or Contaminants; Point of Compliance, Notification, Source Removal, and Assessment Procedures; Site Closure, Contaminated Site Monitoring Only Plans, Risk Assessment Reports, and Remedial Action Plans; and Repealing and Enacting Portions of Section 24-44(2) of the Code Relating to Groundwater, Surface Water, and Soil Clean-up Target Levels. The attached ordinance updates the existing Risk-Based Corrective Action (RBCA) provisions of the Code based upon the most current scientific information and will provide increased consistency with the standards promulgated by the Florida Department of Environmental Protection (FDEP).

BACKGROUND

On March 8, 2001, the Board adopted via Ordinance Number 01-40 the RBCA provisions set forth in Section 24-44(2) of the Code of Miami-Dade County. These provisions provide procedures for implementing site rehabilitation activities (e.g., assessment and remediation), cost-effective site closure options that are protective of human health and the environment, and groundwater, surface water and soil clean-up target levels for 479 contaminants. At the same time, the Board adopted and incorporated, by reference, as a non-codified portion of the Ordinance, the DERM Technical Report entitled "Development of Cleanup Target Levels (CTLs) for Chapter 24, Miami-Dade County Code" (October 2000). The technical report provides the procedures and equations used in developing the CTLs. The attached Ordinance

and revised DERM Technical Report (dated September 2005 and provided as Attachment 1) updates the existing RBCA provisions and CTLs based upon the most current scientific information and will provide increased consistency with the standards provided by the FDEP.

FISCAL IMPACT

This ordinance will have no fiscal impact.

Assistant County Manager

MEMORANDUM

(Revised)

TO: Honorable Chairman Joe A. Martinez and Members, Board of County Commissioners

DATE: March 7, 2006

FROM: Murray A. Greenberg
County Attorney

SUBJECT: Agenda Item No. 7(D)

Please note any items checked.

_____ **"4-Day Rule" ("3-Day Rule" for committees) applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Bid waiver requiring County Manager's written recommendation**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **Housekeeping item (no policy decision required)**

_____ **No committee review**

Approved _____ Mayor

Veto _____

Override _____

Agenda Item No. 7(D)

03-07-06

ORDINANCE NO. _____

ORDINANCE AMENDING SECTION 24-44(2)(f) OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO CLEAN-UP TARGET LEVELS (CTLs) AND PROCEDURES FOR SITES OR CONTAMINANTS OTHER THAN THOSE IDENTIFIED IN SECTION 24-44 (1); REPEALING SECTION 24-44(2)(f)(v)1. OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO GROUNDWATER AND SURFACE WATER CLEAN-UP TARGET LEVELS; ENACTING SECTION 24-44(2)(f)(v)1. OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO GROUNDWATER AND SURFACE WATER CLEAN-UP TARGET LEVELS; REPEALING SECTION 24-44(2)(f)(v)2. OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO SOIL CLEAN-UP TARGET LEVELS; ENACTING SECTION 24-44(2)(f)(v)2. OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO SOIL CLEAN-UP TARGET LEVELS; AMENDING SECTION 24-44(2)(j)(ii) OF THE CODE RELATING TO POINT OF COMPLIANCE, NOTIFICATION, SOURCE REMOVAL, AND ASSESSMENT PROCEDURES; AMENDING SECTION 24-44(2)(k)(ii) OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO SITE CLOSURE; SECTION 24-44(2)(l)(ii) OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, RELATING TO CONTAMINATED SITE MONITORING ONLY PLANS, RISK ASSESSMENT REPORTS, AND REMEDIAL ACTION PLANS; PROVIDING SEVERABILITY, INCLUSION IN AND EXCLUSION FROM THE CODE, AND AN EFFECTIVE DATE

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA:

Section 1. Section 24-44(2)(f) of the Code of Miami-Dade County, Florida, is hereby amended to read as follows:[1]

Sec. 24-44. Clean-up Target Levels (CTLs) and Procedures for Site Rehabilitation Actions (SRAs).

(1) STATE PROGRAM CONTAMINANT CLEAN-UP TARGET LEVELS (CTLs) AND PROCEDURES.

[1] Words stricken through and/or [[double bracketed]] shall be deleted. Underscored words and/or >>double arrowed<< constitute the amendment proposed. Remaining provisions are now in effect and shall remain unchanged.

(a) For contaminants subject to Chapter 62-770, F.A.C., the CTLs and SRA procedures set forth in Chapter 62-777 and 62-770, Florida Administrative Code (F.A.C.) shall apply.

* * *

(2) CLEAN-UP TARGET LEVELS (CTLs) AND PROCEDURES FOR SITES OR CONTAMINANTS OTHER THAN THOSE IDENTIFIED IN SECTION 24-44 (1)

(a) Intent. To protect human health, public safety and environmental resources using risk-based corrective action strategies and to establish the point at which a site rehabilitation action is determined to be accomplished.

(b) The acceptable level of protection for the establishment of human health based CTLs shall be a lifetime excess cancer risk level of one in one million (1.0E-06) and a hazard quotient of one (1) or less. In addition, the CTLs shall be established to protect aquatic life and to prevent nuisance conditions as applicable.

* * *

(f) The Clean-up Target Levels are as follows:

(i) The groundwater and surface water CTLs are set forth in Section 24-44(2)(f)(v)1. The groundwater CTLs are equivalent to the numerical standards set forth in Section 24-43.3(2)(h) of this chapter. For contaminants not listed in Section 24-43.3(2)(h), the groundwater CTLs are equivalent to the numerical standards set forth in Chapter 62-550, F.A.C., [[~~Table 1, Table 2, Table 3 and Table 4~~]]>>Table 1, Table 2, Table 3, Table 4, Table 5 and Table 6, as same may be amended from time to time<<.

For contaminants not listed in Section 24-43.3(2)(h) or Chapter 62-550, F.A.C., [[~~Table 1, Table 2, Table 3 or Table 4~~]] >>Table 1, Table 2, Table 3, Table 4, Table 5 or Table 6, as same may be amended from time to time<<, groundwater CTLs are based upon the protection of human health and the prevention of nuisance conditions as set forth in Section 24-44(2)(b). The groundwater CTLs have been established using the procedures, equations and input parameters set forth in the DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >>September, 2005<<).

The surface water CTLs are equivalent to the water quality standards set forth in Section 24-42(4) of this chapter. For contaminants not listed in Section 24-42(4), the surface water CTLs are based upon the protection of human health and aquatic life and the prevention of nuisance conditions as set forth in Section 24-44(2)(b). The surface water CTLs have been established using the procedures, equations and input parameters set forth in the DERM Technical Report: "Development of Clean-up Target Levels

(CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >> September, 2005<<) and, as applicable, the numerical standards set forth in Chapter 62-302, F.A.C. >>, as same may be amended from time to time.<<

* * *

(ii) The soil CTLs are set forth in Section [[~~24-44(2)(f)(v)1.~~]]>>24-44(2)(f)(v)2.<<. The soil CTLs are based upon the protection of human health as set forth in Section 24-44(2)(b) and groundwater and surface water CTLs set forth in Section 24-44(2)(f)(v)1.. The soil CTLs have been established using the procedures, equations and input parameters set forth in the DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >>September, 2005<<).

However, the applicable leachability-based soil CTLs may be exceeded if it is demonstrated to the satisfaction of the Director, or the Director's designee, that [[~~leachate concentrations do not exceed the applicable groundwater or surface water CTLs set forth in Section 24-44(2)(f)(v)1., using a laboratory leaching procedure which simulates soil leachability and has been approved by the Director or the Director's designee.~~]] >>:

1. Leachate concentrations do not exceed the applicable groundwater or surface water CTLs set forth in Section 24-44(2)(f)(v)1., using a laboratory leaching procedure which simulates soil leachability and which has been approved by the Directors or the Director's designee; or

2. For soil that is and has been exposed to the elements (i.e., open ground, not covered by impermeable or semi-permeable cover) and subject to infiltration throughout the entire unsaturated zone for a minimum of two years, it has been subsequently demonstrated to the satisfaction of the Director, or the Director's designee, by a minimum of one year of groundwater monitoring data, that contaminants will not leach into the groundwater at concentrations that exceed the applicable groundwater or surface water CTLs set forth in Section 24-44(2)(f)(v)1.. This demonstration shall consider site-specific characteristics such as the thickness of the unsaturated zone, depth and mass of soil contaminants, soil lithology, actual precipitation, concentration gradients, and the chemical and physical characteristics of the contaminants.<<

Notwithstanding the above, no soil CTLs shall be more stringent than the practical quantitation limits or naturally occurring background concentrations established in a natural background concentration study as approved by the Director, Environmental

Resources Management, or the Director's designee.

(iii) The Director, or the Director's designee, may approve alternative CTLs provided that: human health, public safety, and the environment are afforded equivalent protection to that provided in Section 24-44 (2)(f)(i) and Section 24-44(2)(f)(ii); [[~~a copy of the FDEP exemption order pursuant to Section 120.542, Florida Statutes is submitted, if applicable;~~]] and same are based upon one (1) of the following, or a combination of the following:

1. The application of the procedures set forth in Section 24-44 (2)(k)(ii) or Section 24-44(2)(1)(ii).

2. A demonstration, provided in a feasibility study approved by the Director, or the Director's designee, that achieving the CTLs is not feasible utilizing the best available technologies.

3. Calculations of site-specific soil CTLs using appropriate site-specific soil properties and equations provided in the DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >> September, 2005<<), and approved by the Director or the Director's designee.

4. Calculations of site-specific soil CTLs for total recoverable petroleum hydrocarbons (TRPH) based upon the site-specific composition of TRPH, as determined by an analytical method approved by the Director or the Director's designee. Calculations utilized to comply with this provision shall be in accordance with the DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >>September, 2005<<).

(iv) The Director, or the Director's designee, shall maintain the DERM Technical Report: "Development of Clean-up Target Levels for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >> September, 2005<<) which contains the risk equations, leachability equations and default input parameters used to calculate the CTLs set forth in Section 24-44(2)(f)(v) herein. The aforesaid Technical Report dated [[~~October 20, 2000~~]] >> September, 2005<<, a copy of which is attached hereto, is hereby incorporated by reference, as same may be amended from time to time. Any changes, additions or deletions to the aforesaid Technical Report shall be approved by the Board of County Commissioners by ordinance.

* * *

Section 2. Section 24-44(2)(f)(v)1. of the Code of Miami-Dade County, Florida, is hereby repealed in its entirety.

Section 3. Section 24-44(2)(f)(v)1. of the Code of Miami-Dade County, Florida, is hereby enacted as follows:

Table 1 Groundwater and Surface Water Clean-up Target Levels

Contaminants	CAS #	Groundwater Criteria	Freshwater Surface Water Criteria	Marine Surface Water Criteria	Non-Cancer Target Organs/Systems or Effects#
Acenaphthene	83-32-9	20	3	3	-Liver
Acenaphthylene	208-96-8	210	*	*	-Liver
Acephate	30560-19-1	4	190	190	Cancer - Neurological
Acetone	67-64-1	6300	1700	1700	-Kidney -Liver - Neurological
Acetonitrile	75-05-8	42	20000	20000	-Mortality
Acetophenone	98-86-2	700	7800	7800	-None Specified
Acifluorfen, sodium [or Blazer]	62476-59-9	1	190	190	-Kidney
Acrolein	107-02-8	3.5	0.4	0.4	-Nasal
Acrylamide	79-06-1	0.008	0.3	0.3	Cancer - Neurological
Acrylic acid	79-10-7	3500	NA	NA	-Developmental
Acrylonitrile	107-13-1	0.06	0.2	0.2	Cancer -Nasal - Reproductive
Alachlor	15972-60-8	2	0.5	0.5	Cancer -Blood
Aldicarb [or Temik]	116-06-3	7	0.9	0.9	-Neurological
Aldicarb sulfone	1646-88-4	7	46	46	-Neurological
Aldicarb sulfoxide	1646-87-3	7	4.2	4.2	-Neurological
Aldrin	309-00-2	0.002	0.00014	0.00014	Cancer -Liver
Ally [or Metsulfuron, methyl]	74223-64-6	1800	NA	NA	-Body Weight
Allyl alcohol	107-18-6	35	5	5	-Kidney -Liver
Allyl chloride	107-05-1	35**	NA	NA	-Neurological

Aluminum	7429-90-5	200	13	1500	-Body Weight
Aluminum phosphide	20859-73-8	2.8	6.5	6.5	-Body Weight
Ametryn	834-12-8	63	6.2	6.2	-Liver
Ammonia	7664-41-7	NA	20	NA	-Body Weight
Ammonia (as Total)		2800	500	500	-Respiratory
Ammonium sulfamate	7773-06-0	1400	10000	10000	-Body Weight
Anilazine [or Dyrene]	101-05-3	2.8	NA	NA	-None Specified
Aniline	62-53-3	6.1	4	4	Cancer -Blood - Spleen
Anthracene	120-12-7	2100	0.3	0.3	-None Specified
Antimony	7440-36-0	6	4300	4300	-Blood
Aramite	140-57-8	1.4	3	3	-Cancer
Aroclor mixture [see PCBs]					
Arsenic	NOCAS	10	50	50	-Cancer - Cardiovascular - Skin
Atrazine	1912-24-9	3	1.9	1.9	-Cancer - Cardiovascular
Azinphos, methyl [see Guthion]					
Azobenzene	103-33-3	0.3	3.6	3.6	-Cancer
Barium (soluble salts)	7440-39-3	2000	NA	NA	-Cardiovascular
Baygon [or Propoxur]	114-26-1	28	0.4	0.4	-Blood - Neurological
Bayleton	43121-43-3	210	500	500	-Blood
Benomyl	17804-35-2	35**	0.3	0.3	-Developmental
Bensulide	741-58-2	46	NA	NA	-None Specified
Bentazon	25057-89-0	210	NA	NA	-Blood
Benzaldehyde	100-52-7	700	54	54	-Gastrointestinal - Kidney
Benzene	71-43-2	1	71.28	71.28	-Cancer -Blood
Benzenethiol	108-98-5	0.07	NA	NA	-Liver
Benzidine	92-87-5	0.0002	0.0002	0.0002	-Cancer -Liver - Neurological
Benzo(a)anthracene	56-55-3	0.05	*	*	-Cancer
Benzo(a)pyrene	50-32-8	0.2	*	*	-Cancer
Benzo(b)fluoranthene	205-99-2	0.05	*	*	-Cancer

Benzo(g,h,i)perylene	191-24-2	210	*	*	-Neurological
Benzo(k)fluoranthene	207-08-9	0.5	*	*	-Cancer
Benzoic acid	65-85-0	28000	9000	9000	-None Specified
Benzotrichloride	98-07-7	0.003	0.002	0.002	-Cancer
Benzyl alcohol	100-51-6	2100	500	500	-Gastrointestinal
Benzyl chloride	100-44-7	0.2	2	2	-Cancer
Beryllium	7440-41-7	4	0.13	0.13	-Cancer -Gastrointestinal -Respiratory
Beta radiation	NOCAS	4	NA	NA	-Cancer
BHC, alpha- [see Hexachlorocyclohexane, alpha-] (b)					
BHC, beta- [see Hexachlorocyclohexane, beta-] (b)					
BHC, delta- [see Hexachlorocyclohexane, delta-]					
BHC, gamma- [see Hexachlorocyclohexane, gamma-] (b)					
BHC, gamma- [see Hexachlorocyclohexane, Technical] (b)					
Bidrin [or Dicrotophos]	141-66-2	0.7	22	22	-Developmental
Bioallethrin	28057-48-9	35	NA	NA	-Liver
Biphenyl, 1,1- [or Diphenyl]	92-52-4	0.5	18	18	-Kidney
Bis(2-chloro-1-metylethyl)ether [see Bis(2-chloroisopropyl)ether]					
Bis(2-chloroethyl)ether	111-44-4	0.03	0.5	0.5	-Cancer
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	39638-32-9	0.5	23	23	-Cancer -Blood
Bis(2-ethylhexyl)adipate	103-23-1	400	33	33	-Cancer -Body Weight
Bis(2-ethylhexyl)phthalate [or DEHP]	117-81-7	6	2.2	2.2	-Cancer -Liver
Bisphenol A	80-05-7	350	55	55	-Body Weight
Blazer [see Acifluorfen, sodium]					
Boron	7440-42-8	1400	NA	NA	-Reproductive -Respiratory
Bravo [see Chlorothalonil]					

Bromacil	314-40-9	70**	97	97	-Body Weight
Bromate	15541-45-4	10	NA	100000	-Cancer -Kidney
Bromochloromethane	74-97-5	91	NA	NA	-None Specified
Bromodichloromethane	75-27-4	0.6	22	22	-Cancer -Kidney
Bromoform	75-25-2	4.4	360	360	-Cancer -Liver
Bromomethane [or Methyl bromide]	74-83-9	9.8	35	35	-Gastrointestinal -Respiratory
Bromoxynil	1689-84-5	140	NA	NA	-None Specified
Bromoxynil octanoate	1689-99-2	140	NA	NA	-Neurological
Butane	106-97-8	9100	NA	NA	-Neurological -Respiratory
Butanol, n-	71-36-3	700	25000	25000	-Neurological
Butanol, tert- [see Butyl alcohol, tert-]					
Butanone, 2- [see Methyl ethyl ketone]					
Butyl acetate, n-	123-86-4	43	1000	1000	-None Specified
Butyl alcohol, tert- [or Butanol, tert-]	75-65-0	1400	NA	NA	-Kidney -Neurological
Butyl benzyl phthalate	85-68-7	140**	26	26	-Liver
Butylate	2008-41-5	350	11	11	-Liver
Butylbenzene, n-	104-51-8	280	NA	NA	-Kidney -Liver -Neurological
Butylbenzene, sec	135-98-8	280	240	240	-Kidney -Neurological
Butylbenzene, tert	98-06-6	280	NA	NA	-Kidney -Neurological
Butylphthalyl butylglycolate	85-70-1	7000	NA	NA	-None Specified
Cadmium	7440-43-9	5	$e^{(0.7852[\ln H]-3.49)}$	9.3	-Cancer -Kidney
Calcium cyanide	592-01-8	280	NA	NA	-Neurological -Thyroid
Captafol	2425-06-1	4.1	0.9	0.9	-Cancer -Kidney
Captan	133-06-2	10	1.9	1.9	-Cancer -Body Weight
Carbaryl [or Sevin]	63-25-2	700	0.06	0.06	-Kidney -Liver
Carbazole	86-74-8	1.8	47	47	-Cancer
Carbofuran	1563-66-2	40	0.1	0.1	-Neurological -Reproductive
Carbon disulfide	75-15-0	700	110	110	-Developmental -Neurological

Carbon tetrachloride	56-23-5	3	4.42	4.42	-Cancer -Liver
Carbophenothion [or Trithion]	786-19-6	0.9	0.1	0.1	-Neurological
Carboxin	5234-68-4	700	60	60	-Body Weight
CFC 113 [see Trichloro-1,2,2-trifluoroethane, 1,1,2-]			NA	NA	-Adrenals
Chloral hydrate	302-17-0	70**	NA	NA	-Gastrointestinal -Neurological
Chloramben	133-90-4	110	NA	NA	-Liver
Chlordane (total)	(i)	2	0.00059	0.00059	-Cancer -Liver
Chloride	16887-00-6	250000	500000	NA	-None Specified
Chlorine	7782-50-5	4000	10	10	-Respiratory
Chlorine cyanide [or Cyanogen chloride]	506-77-4	350	1.4	1.4	-Neurological -Thyroid
Chlorite (sodium salt) [or Sodium chlorite]	7758-19-2	1000	29	29	-Developmental -Neurological
Chloro-1,3-butadiene [or Chloroprene]	126-99-8	140	NA	NA	-Hair Loss -Nasal
Chloro-3-methylphenol, 4- [see Chloro-m-cresol, p-]					
Chloroacetic acid	79-11-8	14	2500	2500	-Cardiovascular
Chloroaniline, p-	106-47-8	28	2.5	2.5	-Spleen
Chlorobenzene	108-90-7	100	17	17	-Liver
Chlorobenzilate	510-15-6	0.1	0.02	0.02	-Cancer -Body Weight
Chloroethane [see Ethyl chloride]					
Chloroform	67-66-3	70	470.8	470.8	-Cancer -Liver
Chloro-m-cresol, p- [or Chloro-3-methylphenol, 4-]	59-50-7	63	100	100	-Body Weight
Chloromethane [see Methyl chloride]					
Chloronaphthalene, beta-	91-58-7	560	1600	1600	-Liver -Respiratory
Chloronitrobenzene, p-	100-00-5	1.9	110	110	-Cancer
Chlorophenol, 2-	95-57-8	35	130	130	-Reproductive
Chlorophenol, 3-	108-43-0	0.1	170	170	-Reproductive
Chlorophenol, 4-	106-48-9	0.1	180	180	-Reproductive
Chloropicrin	76-06-2	7.3	NA	NA	-None Specified
Chloroprene [see Chloro-1,3-butadiene]					

Chlorothalonil [or Bravo]	1897-45-6	3.2	0.8	0.8	-Cancer -Kidney
Chlorotoluene, o-	95-49-8	140	390	390	-Body Weight
Chlorotoluene, p-	106-43-4	140	NA	NA	-None Specified
Chlorpropham	101-21-3	1400	190	190	-Bone Marrow -Kidney -Liver -Spleen
Chlorpyrifos	2921-88-2	21	0.002	0.002	-Neurological
Chlorpyrifos, methyl	5598-13-0	70	0.04	0.04	-Reproductive
Chlorsulfuron	64902-72-3	350	16	16	-Body Weight
Chromium (hexavalent)	18540-29-9	NA	11	50	-Cancer -Respiratory
Chromium (total)	NOCAS	100	11	50	-Cancer
Chromium (trivalent)	16065-83-1	NA	$e^{(0.819[lnH]+0.6848)}$	520	-None Specified
Chrysene	218-01-9	4.8	*	*	-Cancer
Cobalt	7440-48-4	140	NA	NA	-Cardiovascular -Immunological -Neurological -Reproductive
Copper	7440-50-8	1000	$e^{(0.8545[lnH]-1.702)}$	2.9	-Gastrointestinal
Copper cyanide	544-92-3	35			-Kidney
Coumaphos	56-72-4	1.8	0.004	0.004	-Neurological
Cresol, m-[see Methylphenol, 3-]					
Cresol, o- [see Methylphenol, 2-]					
Cresol, p- [see Methylphenol, 4-]					
Crotonaldehyde	123-73-9	0.02	NA	NA	-Cancer
Cumene [or Isopropyl benzene]	98-82-8	0.8	260	260	-Adrenals -Kidney
Cyanazine	21725-46-2	0.04	5.5	5.5	-Cancer
Cyanide, free	57-12-5	140	5.2	1	-Neurological -Thyroid
Cyanogen	460-19-5	280	NA	NA	-Neurological -Thyroid
Cyanogen chloride [see Chlorine cyanide]					
Cycloate	1134-23-2	35	130	130	-Neurological
Cyclohexanone	108-94-1	35000	26000	26000	
Cyclohexylamine	108-91-8	1400	4000	4000	-Reproductive
Cyhalothrin [or Karate]	68085-85-8	35	18	18	-Developmental

Cymene, p- (or 4-Isopropyltoluene)	99-87-6	700	NA	NA	-Gastrointestinal -Neurological -Skin
Cypermethrin	52315-07-8	7**	0.0005	0.0005	-Gastrointestinal
Dacthal [or DCPA]	1861-32-1	70	310	310	-Eye -Kidney -Liver -Respiratory -Thyroid
Dalapon	75-99-0	200	5000	5000	-Kidney
DB, 2,4- [see Dichlorophenoxybutyric acid, 2,4-]					
DBCP, 1,2- [see Dibromo-3-chloropropane, 1,2-]					
DCPA [see Dacthal]					
DDD, 4,4'- [see Dichlorodiphenyl dichloroethane, p,p']					
DDE, 4,4'- [see Dichlorodiphenyl dichloroethylene, p,p'-]					
DDT, 4,4'- [see Dichlorodiphenyl trichloroethane, p,p'-]					
Decabromodiphenyl ether	1163-19-5	7**	NA	NA	-None Specified
DEET	134-62-3	6300	NA	NA	-Body Weight
DEHP [see Bis(2-ethylhexyl)phthalate]					
Demeton	8065-48-3	0.3	0.1	0.1	-Eye -Neurological
Diallate	2303-16-4	0.6	NA	NA	-Cancer -None Specified
Diazinon	333-41-5	6.3	0.002	0.002	-Neurological
Dibenz(a,h)anthracene	53-70-3	0.005	*	*	-Cancer
Dibenzofuran	132-64-9	28	67	67	-None Specified
Dibromo-3-chloropropane, 1,2- [or DBCP, 1,2-]	96-12-8	0.2	NA	NA	-Cancer -Reproductive
Dibromobenzene, 1,4-	106-37-6	70	240	240	-Liver
Dibromochloromethane	124-48-1	0.4	34	34	-Cancer -Liver
Dibromoethane, 1,2- [or EDB]	106-93-4	0.02	13	13	-Cancer -Reproductive
Dibutyl phthalate	84-74-2	700	23	23	-Mortality
Dicamba	1918-00-9	210	200	200	-Developmental
Dichloroacetic acid	79-43-6	0.7	1200	1200	-Cancer -Liver -Neurological -Reproductive

Dichloroacetonitrile	3018-12-0	5.6**	NA	NA	-None Specified
Dichlorobenzene, 1,2-	95-50-1	600	99	99	-Body Weight
Dichlorobenzene, 1,3-	541-73-1	210	85	85	-None Specified
Dichlorobenzene, 1,4-	106-46-7	75	3	3	-Cancer -Liver
Dichlorobenzidine, 3,3'-	91-94-1	0.08	0.03	0.03	-Cancer
Dichlorobenzophenone, 4,4'-	90-98-2	210	1600	1600	-None Specified
Dichlorodifluoromethane	75-71-8	1400	NA	NA	-Liver
Dichlorodiphenyldichloroethane, p,p'- [or DDD, 4,4'-]	72-54-8	0.1	0.0003	0.0003	-Cancer
Dichlorodiphenyldichloroethylene, p,p'- [or DDE, 4,4'-]	72-55-9	0.1	0.0002	0.0002	-Cancer
Dichlorodiphenyltrichloroethane, p,p'- [or DDT, 4,4'-]	50-29-3	0.1	0.00059	0.00059	-Cancer -Liver
Dichloroethane, 1,1-	75-34-3	70**	NA	NA	-Kidney
Dichloroethane, 1,2- [or EDC]	107-06-2	3	37	37	-Cancer -None Specified
Dichloroethene, 1,1-	75-35-4	7**	3.2	3.2	-Liver
Dichloroethene, 1,2- (mixture)	540-59-0	NA	7000	7000	-Blood -Liver
Dichloroethene, cis-1,2-	156-59-2	70	NA	NA	-Blood
Dichloroethene, trans-1,2-	156-60-5	100	11000	11000	-Blood -Liver
Dichlorophenol, 2,3-	576-24-9	0.04	56	56	-Immunological
Dichlorophenol, 2,4-	120-83-2	0.3	13	13	-Immunological
Dichlorophenol, 2,5-	583-78-8	0.5	90	90	-Immunological
Dichlorophenol, 2,6-	87-65-0	0.2	73	73	-Immunological
Dichlorophenol, 3,4-	95-77-2	0.3	61	61	-Immunological
Dichlorophenoxy acetic acid, 2,4-	94-75-7	70	80	80	-Blood -Kidney -Liver
Dichlorophenoxy butyric acid, 2,4- [or DB, 2,4-]	94-82-6	56	NA	NA	-Blood -Cardiovascular
Dichloropropane, 1,2-	78-87-5	5	14	14	-Cancer -Nasal
Dichloropropene, 1,3-	542-75-6	0.4	12	12	-Cancer -Gastrointestinal -Nasal
Dichlorprop	120-36-5	35	42	42	-None Specified
Dichlorvos	62-73-7	0.1	0.005	0.005	-Cancer -Neurological
Dicofol [or Kelthane]	115-32-2	0.08	0.006	0.006	-Cancer -Adrenals

Dicrotophos [see Bidrin]					
Dieldrin	60-57-1	0.002	0.00014	0.00014	-Cancer -Liver
Diethyl phthalate	84-66-2	5600	380	380	-Body Weight
Diethylene glycol, monoethyl ether	111-90-0	14000	170000	170000	-Kidney
Diethylstilbestrol	56-53-1	0.000007			-Cancer
Diisopropyl methylphosphonate	1445-75-6	560	13000	13000	-None Specified
Dimethoate	60-51-5	1.4	0.1	0.1	-Neurological
Dimethoxybenzidine, 3,3'-	119-90-4	2.5	NA	NA	-Cancer
Dimethrin	70-38-2	2100	1.1	1.1	-Liver
Dimethylaniline, 2,4-	95-68-1	0.05	1700	1700	-Cancer -Blood -Spleen
Dimethylaniline, N,N-	121-69-7	14	1700	1700	-Spleen
Dimethylbenzidine, 3,3'-	119-93-7	0.004	NA	NA	-Cancer
Dimethylformamide, N,N-	68-12-2	700	50000	50000	-Gastrointestinal -Liver
Dimethylphenol, 2,4-	105-67-9	140	160	160	-Blood -Neurological
Dimethylphenol, 2,6-	576-26-1	4.2	560	560	-Kidney -Liver -Spleen
Dimethylphenol, 3,4-	95-65-8	7	380	380	-Kidney -Liver -Spleen
Dimethylphthalate	131-11-3	70000	1400	1400	-Kidney
Dinitrobenzene, 1,2- (o)	528-29-0	2.8	30	30	-Spleen
Dinitrobenzene, 1,3- (m)	99-65-0	0.7	72	72	-Spleen
Dinitrobenzene, 1,4- (p)	100-25-4	2.8	30	30	-Spleen
Dinitro-o-cyclohexylphenol	131-89-5	14	NA	NA	-Eye
Dinitrophenol, 2,4-	51-28-5	14	3	3	-Eye
Dinitrotoluene, 2,4-	121-14-2	0.05	9.1	9.1	-Cancer -Liver -Neurological
Dinitrotoluene, 2,6-	606-20-2	0.05	0.7	0.7	-Cancer -Blood -Kidney -Neurological
Di-n-octylphthalate	117-84-0	140	NA	NA	-Kidney -Liver
Dinoseb	88-85-7	7	5.9	5.9	-Developmental
Dioxane, 1,4-	123-91-1	3.2	120	120	-Cancer
Dioxins, as total 2,3,7,8-TCDD equivalents (c)	1746-01-6	0.00003	0.000000005	0.000000005	-Cancer
Diphenamid	957-51-7	210	1600	1600	-Liver

Diphenyl [see Biphenyl, 1,1-]					
Diphenylamine, N,N-	122-39-4	180	NA	NA	-Kidney -Liver
Diphenylhydrazine, 1,2-	122-66-7	0.04	0.2	0.2	-Cancer
Diquat	85-00-7	20	1.5	1.5	-Eye
Disulfoton	298-04-4	0.3	0.3	0.3	-Neurological
Diuron	330-54-1	14	8	8	-Blood
Dyrene [see Anilazine]					
EDB [see Dibromoethane, 1,2-]					
EDC [see Dichloroethane, 1,2-]					
Endosulfan (alpha+beta+sulfate)	115-29-7	42	0.056	0.0087	-Cardiovascular -Kidney
Endothall	145-73-3	100	110	110	-Gastrointestinal
Endrin	72-20-8	2	0.0023	0.0023	-Liver
EPEG [see Ethylphthalyl ethylglycolate]					
Epichlorohydrin	106-89-8	3.5	130	130	-Cancer -Kidney -Nasal
EPN [see Ethyl p-nitrophenyl phenylphosphorothioate]					
EPTC [see Ethyl dipropylthiocarbamate, S-]					
Ethanol	64-17-5	10000	NA	NA	-Developmental
Ethion	563-12-2	3.5	0.007	0.007	-Neurological
Ethoprop	13194-48-4	0.7	0.3	0.3	-Neurological
Ethoxyethanol acetate, 2-	111-15-9	2100	2000	2000	-Developmental
Ethoxyethanol, 2-	110-80-5	2800	NA	NA	-Reproductive
Ethyl acetate	141-78-6	6300	6300	6300	-Body Weight
Ethyl acrylate	140-88-5	0.4	130	130	-Cancer
Ethyl chloride [or Chloroethane]	75-00-3	12	NA	NA	-Cancer -Developmental
Ethyl dipropylthiocarbamate, S- [or EPTC]	759-94-4	180	240	240	-Cardiovascular
Ethyl ether	60-29-7	750	130000	130000	-Body Weight
Ethyl methacrylate	97-63-2	630	NA	NA	-Kidney
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	0.07	0.02	0.02	-Neurological

Ethylbenzene	100-41-4	30	610	610	-Developmental -Kidney -Liver
Ethylene diamine	107-15-3	140	800	800	-Blood -Cardiovascular
Ethylene glycol	107-21-1	14000	16000	16000	-Kidney
Ethylene oxide	75-21-8	0.03	4200	4200	-Cancer
Ethylene thiourea [or ETU]	96-45-7	0.3	1300	1300	-Cancer -Thyroid
Ethylphthalyl ethylglycolate [or EPEG]	84-72-0	21000	NA	NA	-Kidney
Ethyltoluene, o-	622-96-8	210	NA	NA	-Body Weight -Liver
Ethyltoluene, p-	611-14-3	210	NA	NA	-Body Weight -Liver
ETU [see Ethylene thiourea]					
Famphur	52-85-7	3.5	NA	NA	-Blood
Fenamiphos	22224-92-6	1.8	0.2	0.2	-Neurological
Fensulfothion	115-90-2	1.8	0.5	0.5	-Neurological
Fenvalerate [see Pydrin]					
Fluometuron	2164-17-2	91	190	190	-None Specified
Fluoranthene	206-44-0	280	0.3	0.3	-Blood -Kidney -Liver
Fluorene	86-73-7	280	30	30	-Blood
Fluoride	7782-41-4	2000	10000	5000	-Teeth mottling
Fluoridone	59756-60-4	560	110	110	-Kidney -Reproductive
Fonofos	944-22-9	14	0.1	0.1	-Liver -Neurological
Formaldehyde	50-00-0	600	110	110	-Cancer -Gastrointestinal
Formic acid	64-18-6	14000	4500	4500	-Body Weight
Furan	110-00-9	7	NA	NA	-Liver
Furfural	98-01-1	21	650	650	-Liver -Nasal
Glycidaldehyde	765-34-4	2.8	NA	NA	-Adrenals -Blood -Kidney
Glyphosate [or Roundup]	1071-83-6	700	120	120	-Kidney
Gross alpha radiation	14127-62-9	15	15	15	-Cancer
Guthion [or Methyl azinphos]	86-50-0	11	0.01	0.01	-Neurological
Heptachlor	76-44-8	0.4	0.00021	0.00021	-Cancer -Liver
Heptachlor epoxide	1024-57-3	0.2	0.00004	0.00004	-Cancer -Liver

Hexachloro-1,3-butadiene	87-68-3	0.4	49.7	49.7	-Cancer -Kidney
Hexachlorobenzene	118-74-1	1	0.0003	0.0003	-Cancer -Liver
Hexachlorocyclohexane, alpha- [or BHC, alpha-]	319-84-6	0.006	0.005	0.005	-Cancer
Hexachlorocyclohexane, beta- [BHC, beta-]	319-85-7	0.02	0.046	0.046	-Cancer
Hexachlorocyclohexane, delta- [or BHC, delta-]	319-86-8	2.1	NA	NA	-Kidney -Liver
Hexachlorocyclohexane, gamma- [or Lindane or BHC, gamma-]	58-89-9	0.2	0.063	0.063	-Cancer -Kidney -Liver
Hexachlorocyclohexane, technical [or BHC, technical]	608-73-1	0.02	0.02	0.02	-Cancer
Hexachlorocyclopentadiene	77-47-4	50	3	3	-Gastrointestinal
Hexachlorodibenzo-p-dioxin (mixture)	19408-74-3	0.000006	NA	NA	-Cancer
Hexachloroethane	67-72-1	2.5	3.3	3.3	-Cancer -Kidney
Hexachlorophene	70-30-4	2.1	1.1	1.1	-Neurological
Hexahydro-1,3,5-trinitro-1,3,5-triazine [or RDX]	121-82-4	0.3	180	180	-Cancer -Reproductive
Hexane, n-	110-54-3	6	3400	3400	-Neurological
Hexanone, 2- [or Methyl butyl ketone]	591-78-6	280	NA	NA	-None Specified
Hexazinone	51235-04-2	230	25000	25000	-Body Weight
HMX [see Octahydro-1,3,5,7-tetranitro-tetrazocine]					
Hydrogen cyanide (as Cyanide)	74-90-8	140	3.5	3.5	-Neurological -Thyroid
Hydrogen sulfide	7783-06-4	21	0.1	0.1	-Gastrointestinal -Nasal
Hydroquinone	123-31-9	280	4.5	4.5	-Blood
Indeno(1,2,3-cd)pyrene	193-39-5	0.05	*	*	-Cancer
Iprodione	36734-19-7	280	150	150	-Blood
Iron	7439-89-6	300	1000	300	-Gastrointestinal
Isobutyl alcohol	78-83-1	2100	47000	47000	-Neurological
Isophorone	78-59-1	37	650	650	-Cancer -None Specified
Isopropyl benzene [see Cumene]					
4-Isoproyl toluene [see Cymene]					

Kelthane [see Dicofol]					
Kepone	143-50-0	0.004	NA	NA	-Cancer
Lead	7439-92-1	15	$e^{(1.273[\ln H]-4.705)}$	8.5	-Neurological
Limonene	138-86-3	700			-Kidney -Liver
Lindane [see Hexachlorocyclohexane, gamma-]					
Linuron	330-55-2	1.4**	45	45	-Blood
Lithium	7439-93-2	140	NA	NA	-None Specified
Malathion	121-75-5	140	0.1	0.1	-Neurological
Maleic anhydride	108-31-6	700	NA	NA	-Kidney
Maleic hydrazide	123-33-1	3500	750	750	-Kidney
Mancozeb	8018-01-7	210	3.5	3.5	-Thyroid
Maneb	12427-38-2	35	5.5	5.5	-Thyroid
Manganese	7439-96-5	50	NA	NA	-Neurological
MCPA [see Methyl-4-chlorophenoxy acetic acid, 2-]					
MCPP [see Propionic acid, 2-(2-methyl-4-chlorophenoxy)]					
Mercuric chloride (as Mercury)	7487-94-7	0.2**	0.05	0.05	-Immunological -Kidney
Mercury	7439-97-6	2	0.012	0.025	-Neurological
Mercury, methyl- [see Methylmercury]					
Merphos	150-50-5	0.2	NA	NA	-Neurological
Merphos oxide	78-48-8	0.2	0.2	0.2	-Neurological
Metalaxyl	57837-19-1	420	37	37	-Blood -Liver -Neurological
Methacrylonitrile	126-98-7	0.7	NA	NA	-Liver
Methamidophos	10265-92-6	0.4	0.00001	0.00001	-Neurological
Methanol	67-56-1	3500	45000	45000	-Developmental -Eye -Neurological
Methidathion	950-37-8	0.7**	0.03	0.03	-Liver
Methomyl	16752-77-5	180	1	1	-Kidney -Spleen
Methoxy-5-nitroaniline, 2-	99-59-2	0.8	NA	NA	-Cancer
Methoxychlor	72-43-5	40	0.03	0.03	-Developmental -Reproductive

Methoxyethanol, 2-	109-86-4	7	NA	NA	-Reproductive
Methyl acetate	79-20-9	3000	NA	NA	-Liver
Methyl acrylate	96-33-3	210	NA	NA	-None Specified
Methyl azinphos [see Guthion]					
Methyl bromide [see Bromomethane]					
Methyl butyl ketone [see Hexanone, 2-]					
Methyl chloride [or Chloromethane]	74-87-3	2.7	470.8	470.8	-Cancer -Neurological
Methyl chloroform [see Trichloroethane, 1,1,1-]					
Methyl ethyl ketone [or Butanone, 2-]	78-93-3	4200	120000	120000	-Developmental
Methyl isobutyl ketone [or MIBK]	108-10-1	560	23000	23000	-Kidney -Liver
Methyl methacrylate	80-62-6	25	6500	6500	-Nasal
Methyl parathion [or Parathion, methyl]	298-00-0	1.8	0.01	0.01	-Blood -Neurological
Methyl tert-butyl ether [or MTBE]	1634-04-4	20	34000	34000	-Eye -Kidney -Liver
Methyl-4-chlorophenoxy acetic acid, 2- [or MCPA]	94-74-6	3.5	72	72	-Kidney -Liver
Methyl-5-nitroaniline, 2-	99-55-8	1.1	NA	NA	-Cancer
Methylaniline, 2-	95-53-4	0.1	26	26	-Cancer
Methylene bis(2-chloroaniline), 4,4-	101-14-4	0.3	NA	NA	-Cancer -Liver -Bladder
Methylene bromide	74-95-3	70	NA	NA	-Blood
Methylene chloride	75-09-2	5	1580	1580	-Cancer -Liver
Methylmercury [or Mercury, methyl]	22967-92-6	0.07**	NA	NA	-Neurological
Methylnaphthalene, 1-	90-12-0	28	95	95	-Nasal
Methylnaphthalene, 2-	91-57-6	28	30	30	-Nasal
Methylphenol, 2- [or Cresol, o-]	95-48-7	35**	250	250	-Neurological
Methylphenol, 3- [or Cresol, m-]	108-39-4	35**	450	450	-Neurological
Methylphenol, 4- [or Cresol, p-]	106-44-5	3.5**	70	70	-Neurological -Respiratory
Metolachlor	51218-45-2	110**	1.1	1.1	-Body Weight
Metribuzin	21087-64-9	180	64	64	-Kidney -Liver

Metsulfuron, methyl [see Ally]					
Mevinphos	7786-34-7	1.8	0.05	0.05	-Neurological
MIBK [see Methyl isobutyl ketone]					
Mirex	2385-85-5	1.4	0.001	0.001	-Liver -Thyroid
Molinate	2212-67-1	14	17	17	-Reproductive
Molybdenum	7439-98-7	35	NA	NA	-Gout
MTBE [see Methyl tert-butyl ether]					
Naled	300-76-5	14	0.02	0.02	-Neurological
Naphthalene	91-20-3	14**	26	26	-Nasal
Naphthylamine, 2-	91-59-8	0.0003	NA	NA	-Cancer
Napropamide	15299-99-7	700	210	210	-Body Weight
Nickel	7440-02-0	100	$e^{(0.846[\ln H]+0.0584)}$	8.3	-Body Weight
Nickel subsulfide	12035-72-2	100	$e^{(0.846[\ln H]+0.0584}$	8.3	-Cancer
Nitrate	14797-55-8	10000	NA	NA	-Blood
Nitrate+Nitrite	NOCAS	10000	NA	NA	-Blood
Nitrite	14797-65-0	1000	NA	NA	-Blood
Nitroaniline, m-	99-09-2	1.7	NA	NA	-Cancer -Blood
Nitroaniline, o-	88-74-4	21	NA	NA	-Blood
Nitroaniline, p-	100-01-6	1.7	1200	1200	-Cancer -Blood
Nitrobenzene	98-95-3	3.5	90	90	-Adrenals -Blood -Kidney -Liver
Nitrophenol, 4-	100-02-7	56	55	55	-None Specified
Nitroso-di-ethylamine, N-	55-18-5	0.0002	0.008	0.008	-Cancer
Nitroso-dimethylamine, N-	62-75-9	0.0007	3	3	-Cancer
Nitroso-di-n-butylamine, N-	924-16-3	0.006	0.04	0.04	-Cancer
Nitroso-di-n-propylamine, N-	621-64-7	0.005	0.5	0.5	-Cancer
Nitroso-diphenylamine, N-	86-30-6	7.1	6	6	-Cancer
Nitroso-N-methylethylamine, N-	10595-95-6	0.002	0.06	0.06	-Cancer
Nitrosopyrrolidine, N-	930-55-2	0.02	NA	NA	-Cancer
Nitrotoluene, m-	99-08-1	140	380	380	-Spleen

Nitrotoluene, o-	88-72-2	70	550	550	-Spleen
Nitrotoluene, p-	99-99-0	70	550	550	-Spleen
Nonylphenol	25154-52-3	8.4	5.9	1.4	-Kidney
Norflurazon	27314-13-2	280	NA	NA	-Kidney -Liver -Thyroid
Octahydro-1,3,5,7-tetranitro-tetrazocine [or HMX]	2691-41-0	350	1300	1300	-Blood -Liver
Octamethylpyrophosphoramide	152-16-9	14	NA	NA	-Neurological
Oil and Grease	NOCAS	5	5	5	-None Specified
Oryzalin	19044-88-3	35**	NA	NA	-Adrenals -Blood -Kidney -Liver
Oxadiazon	19666-30-9	35	44	44	-Liver
Oxamyl	23135-22-0	200	8.5	8.5	-Body Weight
Paraquat	1910-42-5	3.2**	47	47	-Respiratory
Parathion	56-38-2	4.2**	0.04	0.04	-Neurological
Parathion, methyl [see Methyl parathion]					
PCBs [or Aroclor mixture]	1336-36-3	0.5	0.000045	0.000045	-Cancer -Immunological
PCE [see Tetrachloroethene]					
Pebulate	1114-71-2	350	310	310	-Blood
Pendimethalin	40487-42-1	280	10	10	-Liver
Pentachlorobenzene	608-93-5	5.6	1.7	1.7	-Kidney -Liver
Pentachloronitrobenzene	82-68-8	0.1	0.02	0.02	-Cancer -Liver
Pentachlorophenol	87-86-5	1	8.2	7.9	-Cancer -Kidney -Liver
Perchlorate	7601-90-3	4	NA	NA	-Thyroid
Permethrin	52645-53-1	350	0.001	0.001	-Liver
Phenanthrene	85-01-8	210	*	*	-Kidney
Phenmedipham [or Betanal]	13684-63-4	1800	200	200	-None Specified
Phenol	108-95-2	10	6.5	6.5	-Developmental
Phenylenediamine, m-	108-45-2	42	NA	NA	-Liver
Phenylenediamine, p-	106-50-3	1300	NA	NA	-Whole Body
Phenylphenol, 2-	90-43-7	18	36	36	-Cancer
Phorate	298-02-2	1.4	0.005	0.005	-Neurological

Phosmet	732-11-6	140	0.1	0.1	-Liver - Neurological
Phosphine	7803-51-2	2.1	NA	NA	-Body Weight
Phthalic anhydride	85-44-9	14000	NA	NA	-Kidney -Nasal - Respiratory
Picloram	1918-02-1	500	70	70	-Liver
Polychlorinated dibenzo-p-dioxins [see Dioxins]					
Polycyclic Aromatic Hydrocarbons (PAHs)			0.031	0.031	-Various Endpoints
Potassium cyanide	151-50-8	350	5.5	5.5	-Neurological - Thyroid
Profluralin	26399-36-0	42	NA	NA	-None Specified
Prometon	1610-18-0	110	600	600	-None Specified
Prometryn	7287-19-6	28	21	21	-Bone Marrow - Kidney -Liver
Pronamide	23950-58-5	53**	NA	NA	-None Specified
Propachlor	1918-16-7	91	12	12	-Liver
Propanil	709-98-8	35	20	20	-Spleen
Propargite	2312-35-8	140	1.6	1.6	-None Specified
Propazine	139-40-2	14**	190	190	-Body Weight
Propham	122-42-9	140	500	500	-Neurological
Propiconazole	60207-90-1	91	26	26	-Gastrointestinal
Propionic acid, 2-(2-methyl-4-chlorophenoxy) [or MCPP]	93-65-2	7	NA	NA	-Kidney
Propoxur [see Baygon]					
Propylbenzene, n-	103-65-1	280	NA	NA	- Kidney -Liver - Neurological
Propylene glycol	57-55-6	140000	36000	36000	-Blood -Bone Marrow
Propylene glycol monomethyl ether	107-98-2	4900	NA	NA	-Kidney -Liver - Neurological
Propylene oxide	75-56-9	0.1	NA	NA	-Cancer -Nasal - Respiratory
Pydrin [or Fenvalerate]	51630-58-1	180	0.0004	0.0004	-Neurological
Pyrene	129-00-0	210	0.3	0.3	-Kidney
Pyridine	110-86-1	7	1300	1300	-Liver
Quinoline	91-22-5	0.01	NA	NA	-Cancer
Radium, 226 and 228 (combined)	7440-14-4	5	5	5	-Cancer

RDX [see Hexahydro-1,3,5-trinitro-1,3,5-triazine]					
Resmethrin	10453-86-8	210	0.003	0.003	-Reproductive
Ronnel	299-84-3	350	0.06	0.06	-Liver
Rotenone	83-79-4	28	0.1	0.1	-Developmental
Roundup [see Glyphosate]					
Selenious acid (as Selenium)	7783-00-8	35	40	40	-Hair Loss -Neurological -Skin
Selenium	7782-49-2	50	5	71	-Hair Loss -Neurological -Skin
Sevin [see Carbaryl]					
Silver	7440-22-4	100	0.07	0.4	-Skin
Silvex [see Trichlorophenoxy propionic acid]					
Simazine	122-34-9	4	7.3	7.3	-Cancer-Blood
Sodium	7440-23-5	160000	NA	NA	-None Specified
Sodium chlorite [see Chlorite (sodium salt)]					
Sodium cyanide (as Cyanide)	143-33-9	280	3.8	3.8	-Neurological
Strontium	7440-24-6	4200			-Bone
Strychmine	57-24-9	2.1	38	38	-Mortality
Styrene	100-42-5	100	460	460	-Blood -Liver -Neurological
Sulfate	14808-79-8	250000	NA	NA	-None Specified
TCDD, 2,3,7,8- [see Dioxins, as total 2,3,7,8-TCDD equivalents]					
TCE [see Trichloroethene]					
TCMTB [see Thiocyanomethylthio-benzothiazole, 2-]					
TDS [see Total dissolved solids]					
Tebuthiuron	34014-18-1	490	310	310	-Body Weight
Temephos	3383-96-8	140	0.002	0.002	-None Specified
Temik [see Aldicarb]					
Terbacil	5902-51-2	91	2500	2500	-Liver -Thyroid
Terbufos	13071-79-9	0.2	0.01	0.01	-Neurological
Terbutryn	886-50-0	7	3.1	3.1	-Blood

Tetrachlorobenzene, 1,2,4,5-	95-94-3	2.1	1.6	1.6	-Kidney
Tetrachloroethane, 1,1,1,2-	630-20-6	1.3	NA	NA	-Cancer -Kidney - Liver
Tetrachloroethane, 1,1,2,2-	79-34-5	0.2	10.8	10.8	-Cancer -Liver
Tetrachloroethene [or PCE]	127-18-4	3	8.85	8.85	-Cancer -Liver
Tetrachlorophenol, 2,3,4,6-	58-90-2	210	4.5	4.5	-Liver
Tetraethyl dithiopyrophosphate	3689-24-5	3.5	0.01	0.01	-Bone Marrow - Neurological
Thallium	7440-28-0	2	6.3	6.3	-Hair Loss -Liver
Thallium sulfate (as Thallium)	7446-18-6	0.6	26	26	-Blood -Hair Loss - Liver
Thiobencarb	28249-77-6	70	NA	NA	-Kidney
Thiocyanomethylthio-benzothiazole, 2- [or TCMTB]	21564-17-0	2.8**	0.4	0.4	-Gastrointestinal
Thiram	137-26-8	35	0.2	0.2	-Neurological
Tin	7440-31-5	4200	NA	NA	-Kidney -Liver
Titanium Dioxide	13463-67-7	28000	NA	NA	
Toluene	108-88-3	40	480	480	-Kidney -Liver - Neurological
Toluene-2,4-diamine	95-80-7	0.01	NA	NA	-Cancer
Toluidine, p-	106-49-0	0.2	NA	NA	-Cancer
Total dissolved solids [or TDS]	C-010	500000	NA	NA	-None Specified
Toxaphene	8001-35-2	3	0.0002	0.0002	-Cancer - Developmental
Triallate	2303-17-5	91	65	65	-Liver -Spleen
Tributyltin oxide	56-35-9	2.1	0.05	0.05	-Immunological
Trichloro-1,2,2-trifluoroethane, 1,1,2- [or CFC 113]	76-13-1	210000	NA	NA	-Neurological
Trichloroacetic acid	76-03-9	9.1	100000	100000	-None Specified
Trichlorobenzene, 1,2,3-	87-61-6	70	85	85	-Adrenals
Trichlorobenzene, 1,2,4-	120-82-1	70	23	23	-Adrenals
Trichlorobenzene, 1,3,5-	108-70-3	40	NA	NA	-None Specified
Trichloroethane, 1,1,1- [or Methyl chloroform]	71-55-6	200	270	270	-None Specified
Trichloroethane, 1,1,2-	79-00-5	5	16	16	-Cancer -Liver
Trichloroethene [or TCE]	79-01-6	3	80.7	80.7	-Cancer -None Specified

Trichlorofluoromethane	75-69-4	2100	NA	NA	-Cardiovascular -Kidney -Respiratory
Trichlorophenol, 2,4,5-	95-95-4	1	23	23	-Kidney -Liver
Trichlorophenol, 2,4,6-	88-06-2	3.2	6.5	6.5	-Cancer
Trichlorophenoxy acetic acid, 2,4,5-	93-76-5	70	140	140	-Kidney
Trichlorophenoxy propionic acid, 2, (2, 4, 5-) [or Silvex]	93-72-1	50	NA	NA	-Liver
Trichloropropane, 1,1,2-	598-77-6	35	NA	NA	-Cancer -Kidney -Liver -Thyroid
Trichloropropane, 1,2,3-	96-18-4	0.02	0.2	0.2	-Cancer -Kidney -Liver
Trichloropropene, 1,2,3-	96-19-5	35	NA	NA	-Eye
Trifluralin	1582-09-8	4.5	0.2	0.2	-Cancer -Blood -Liver
Trimethyl phosphate	512-56-1	0.9	NA	NA	-Cancer
Trimethylbenzene, 1,2,3-	526-73-8	10	NA	NA	-None Specified
Trimethylbenzene, 1,2,4-	95-63-6	10	220	220	-None Specified
Trimethylbenzene, 1,3,5-	108-67-8	10	220	220	-None Specified
Trinitrobenzene, 1,3,5-	99-35-4	210	19	19	-Blood -Spleen
Trinitrophenylmethylnitramine	479-45-8	70			-Kidney -Liver -Spleen
Trinitrotoluene, 2,4,6-	118-96-7	1.2	49	49	-Cancer -Liver
Trithion [see Carbophenothion]					
TRPH	NOCAS	5000	5000	5000	-Multiple Endpoints Mixed Contaminants
Uranium, soluble salts	7440-61-1	21	NA	NA	-Kidney
Vanadium	7440-62-2	49	NA	NA	-Hair Loss
Vanadium pentoxide (as Vanadium)	1314-62-1	63	13	13	-Hair Loss
Vernam	1929-77-7	7	12	12	-Body Weight
Vinyl acetate	108-05-4	88	700	700	-Kidney -Nasal
Vinyl chloride (d)	75-01-4	1	2.4	2.4	-Cancer -Liver
White phosphorus	7723-14-0	0.1	NA	0.1	-Maternal Death -Reproductive
Xylenes, total	1330-20-7	20	370	370	-Neurological
Zinc	7440-66-6	5000	$e^{(0.8473[\ln H]+0.884)}$	86	-Blood

Zinc chloride	7646-85-7	2100	1.5	1.5	-Blood
Zinc phosphide	1314-84-7	2.1	NA	NA	-Body Weight
Zineb	12122-67-7	350	14	14	-Thyroid

= These default Target Organ(s)/Systems or Effects are those reported to occur at the doses used to derive the referenced dose. Non-default Target Organ(s)/ Systems or Effects may be justified through a detailed toxicological analysis of the chemicals present at a specific site.

* = There are no surface water standards for these individual polycyclic aromatic hydrocarbons. Per Chapter 62-302, F.A.C., the surface water criterion for PolycyclicAromatic Hydrocarbons (PAHs) shall apply to the total concentration of Acenaphthylene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(fluoranthene, Benzo(g,i,h) perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h,)anthracene, Indenol(1,2,3-cd)pyrene, and Phenanthrene.

** = Groundwater CTLs for Class C carcinogens with no cancer slope factor were developed using the referenced dose divided by a factor of 10, as described in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24, Miami-Dade County Code (September 2005).

(a) = Freshwater surface water criterion for Ammonia based on un-ionized ammonia only. All other water criteria for ammonia are based on total ammonia.

(b) = The common name BHC is a misnomer for Hexachlorocyclohexane.

(c)= Criteria for Dioxins, as total 2,3,7,8-TCDD equivalents shall be compared to the total dioxin equivalents for chlorinated dioxin and dibenzofuran congeners using the approach set forth in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County (September 2005).

(d) = Surface water values protective of human health for Vinyl chloride calculated assuming continuous lifetime exposure from birth as described in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County (September 2005).

(e) = Not to exceed 10% above ambient, as set forth in Sec. 24-42(4).

(f) = Hardness-dependent as set forth in Chapter 62-302, F.A.C.

(g) = Criteria for these metals are measured as total recoverable metal. However, they may be applied as dissolved metals when, as part of a permit application, a

dissolved metals translator has been established according to the procedures set forth in the document, "Guidance for Establishing a Metals Translator", Florida Department of Environmental Protection, December 17, 2001.

(h) = In the absence of concentration data specific for the III and VI valence states of chromium, total chromium concentrations in surface water shall be compared to the criteria for Chromium (hexavalent).

(i) = 12789-03-6 or 57-74-9

NA = Not available.

None Specified = Target organ(s) not available.

Note: Freshwater and marine surface waters, and groundwater at the point of discharge into surface water shall pass acute and chronic toxicity bioassay tests: The user shall consult the standard definitions for acute and chronic toxicity set forth in F.A.C. 62-302.200(1) and F.A.C. 62-302.200(4), respectively.

Section 4. Section 24-44(2)(f)(v)2. of the Code of Miami-Dade County, Florida, is hereby repealed in its entirety.

Section 5. Section 24-44(2)(f)(v)2. of the Code of Miami-Dade County, Florida, is hereby enacted as follows:

Table 2 Soil Clean-up Target Levels

		Direct Exposure		Leachability Based on			
Contaminants	**CAS #**	**Residential**	**Commercial/ Industrial**	**Groundwater**	**Fresh Surface Water**	**Marine Surface Water**	**Target Organs/Systems or Effects#**
Acenaphthene	83-32-9	2400	20000	2.1	0.3	0.3	-Liver
Acenaphthylene	208-96-8	1800	20000	27	NA	NA	-Liver
Acephate	30560-19-1	120	720	0.02	0.8	0.8	-Cancer - Neurological
Acetaldehyde	75-07-0	15	20	NA	NA	NA	-Nasal
Acetone	67-64-1	11000	68000	25	6.8	6.8	-Kidney -Liver - Neurological
Acetophenone	98-86-2	3900	32000	3.9	44	44	-None Specified
Acifluorfen, sodium [or Blazer]	62476-59-9	28	140	0.1	25	25	-Kidney

Acrolein	107-02-8	0.05	0.3	0.01	0.002	0.002	-Nasal
Acrylamide	79-06-1	0.1	0.4	0.00003	0.001	0.001	-Cancer -Neurological
Acrylic acid	79-10-7	48	250	14	NA	NA	-Developmental
Acrylonitrile	107-13-1	0.3	0.6	0.0003	0.001	0.001	Cancer -Nasal -Reproductive
Alachlor	15972-60-8	11	44	0.02	0.005	0.005	-Cancer -Blood
Aldicarb [or Temik]	116-06-3	68	920	0.03	0.004	0.004	-Neurological
Aldrin	309-00-2	0.06	0.3	0.2	0.01	0.01	-Cancer -Liver
Ally [or Metsulfuron, methyl]	74223-64-6	19000	300000	12	NA	NA	-Body Weight
Allyl alcohol	107-18-6	140	970	0.1	0.02	0.02	-Kidney -Liver
Allyl chloride	107-05-1	0.5	2.7	0.2	NA	NA	-Neurological
Aluminum	7429-90-5	80000	*	***	***	***	-Body Weight
Aluminum phosphide	20859-73-8	35	880	***	***	***	-Body Weight
Ametryn	834-12-8	670	11000	0.8	0.08	0.08	-Liver
Ammonia (a)	7664-41-7	NA	NA	NA	***	NA	-Respiratory
Ammonia (as Total)	7664-41-7	4400	26,400	***	***	***	-Respiratory
Aniline	62-53-3	27	150	0.03	0.02	0.02	-Cancer -Blood -Spleen
Anthracene	120-12-7	21000	300000	2500	0.4	0.4	-None Specified
Antimony (b)	7440-36-0	27	370	5.4	3900	3900	-Blood
Aroclor mixture [see PCBs]							
Arsenic	NOCAS	2.1	12	***	***	***	Cancer -Cardiovascular -Skin
Atrazine	1912-24-9	4.3	19	0.06	0.04	0.04	Cancer -Cardiovascular
Azinphos, methyl [see Guthion]							
Azobenzene	103-33-3	7.9	31	0.03	0.4	0.4	-Cancer
Barium (soluble salts) (b)	7440-39-3	120**	130000	1600	NA	NA	-Cardiovascular
Baygon [or Propoxur]	114-26-1	280	4100	0.2	0.002	0.002	-Blood -Neurological
Bayleton	43121-43-3	2400	46000	4.8	11	11	-Blood
Benomyl	17804-35-2	4000	77000	3.1	0.03	0.03	-Developmental
Bentazon	25057-89-0	2100	32000	1.2	NA	NA	-Blood
Benzaldehyde	100-52-7	3300	24000	4.8	0.4	0.4	-Gastrointestinal -Kidney

Benzene	71-43-2	1.2	1.7	0.007	0.5	0.5	-Cancer -Blood
Benzenethiol	108-98-5	0.2	1.3	0.001	NA	NA	-Liver
Benzidine	92-87-5	0.004	0.02	0.00002	0.00002	0.00002	-Cancer -Liver -Neurological
Benzo(a)anthracene	56-55-3	##	##	0.8	NA	NA	-Cancer
Benzo(a)pyrene	50-32-8	0.1	0.7	8	NA	NA	-Cancer
Benzo(b)fluoranthene	205-99-2	##	##	2.4	NA	NA	-Cancer
Benzo(g,h,i)perylene	191-24-2	2500	52000	32000	NA	NA	-Neurological
Benzo(k)fluoranthene	207-08-9	##	##	24	NA	NA	-Cancer
Benzoic acid	65-85-0	180000	*	110	36	36	-None Specified
Benzotrichloride	98-07-7	0.04	0.09	0.0001	0.00008	0.00008	-Cancer
Benzyl alcohol	100-51-6	26000	670000	9.5	2.3	2.3	-Gastrointestinal
Benzyl chloride	100-44-7	1	1.6	0.002	0.02	0.02	-Cancer
Beryllium (b)	7440-41-7	120	1400	63	2.1	2.1	-Cancer - Gastrointestinal -Respiratory
Betanal [see Phenmedipham]							
BHC, alpha- [see Hexachloro cyclohexane, alpha-] (f)							
BHC, beta- [see Hexachloro cyclohexane, beta-] (f)							
BHC, delta- [see Hexachloro cyclohexane, delta-] (f)							
BHC, gamma- [see Hexachloro cyclohexane, gamma-] (f)							
Bidrin [or Dicrotophos]	141-66-2	7.4	120	0.005	0.1	0.1	-Developmental
Biphenyl, 1,1- [or Diphenyl]	92-52-4	3000	34000	0.2	5.8	5.8	-Kidney
Bis(2-chloro-1-metylethyl)ether [see Bis(2-chloroisopropyl)ether]							
Bis(2-chloroethoxy)methane	111-91-1	250	5700	63	NA	NA	-Liver
Bis(2-chloroethyl)ether	111-44-4	0.3	0.5	0.0001	0.002	0.002	-Cancer
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	39638-32-9	6	12	0.009	0.4	0.4	-Cancer -Blood
Bis(2-ethylhexyl)adipate	103-23-1	620	1900	780	64	64	-Cancer -Body Weight

Bis(2-ethylhexyl)phthalate [or DEHP]	117-81-7	72	390	3600	1300	1300	-Cancer -Liver
Bisphenol A	80-05-7	4000	79000	11	1.7	1.7	-Body Weight
Blazer [see Acifluorfen, sodium]							
Boron	7440-42-8	17000	430000	***	NA	NA	-Reproductive -Respiratory
Bravo [see Chlorothalonil]							
Bromacil	314-40-9	7500	120000	0.5	0.6	0.6	-Body Weight
Bromate	15541-45-4	1	2.8	0.04	NA	460	-Cancer -Kidney
Bromochloromethane	74-97-5	95	530	0.6	NA	NA	-None Specified
Bromodichloromethane	75-27-4	1.5	2.2	0.004	0.1	0.1	Cancer -Kidney
Bromoform	75-25-2	48	93	0.03	2.7	2.7	-Cancer -Liver
Bromomethane [or Methyl bromide]	74-83-9	3.1	16	0.05	0.2	0.2	-Gastrointestinal -Respiratory
Bromoxynil	1689-84-5	1600	29000	3	NA	NA	-None Specified
Butanol, n-	71-36-3	2900	21000	3	110	110	-Neurological
Butanol, tert- [see Butyl alcohol, tert-]							
Butanone, 2- [see Methyl ethyl ketone]							
Butyl alcohol, tert- [or Butanol, tert-]	75-65-0	3200	19000	5.7	NA	NA	-Kidney -Neurological
Butyl benzyl phthalate	85-68-7	17000	380000	310	56	56	-Liver
Butylate	2008-41-5	3200	40000	5.2	0.2	0.2	-Liver
Butylbenzene, n-	104-51-8	410	2400	21	NA	NA	-Kidney -Liver -Neurological
Butylbenzene, sec	135-98-8	360	2000	19	NA	NA	-Kidney -Neurological
Butylbenzene, tert	98-06-6	360	2100	15	NA	NA	-Kidney -Neurological
Butylphthalyl butylglycolate	85-70-1	84000	*	4200	NA	NA	-None Specified
Cadmium (b,c,h)	7440-43-9	82	1700	7.5	(k)	14	Cancer -Kidney
Calcium cyanide	592-01-8	3500	88000	***	NA	NA	-Neurological -Thyroid
Captafol	2425-06-1	110	570	0.5	0.1	0.1	-Cancer -Kidney
Captan	133-06-2	230	750	0.1	0.03	0.03	-Cancer -Body Weight
Carbaryl [or Sevin]	63-25-2	7700	130000	8.7	0.0007	0.0007	-Kidney -Liver

Carbazole	86-74-8	49	240	0.2	6.5	6.5	-Cancer
Carbofuran	1563-66-2	130	910	0.2	0.0006	0.0006	-Neurological -Reproductive
Carbon disulfide	75-15-0	270	1500	5.6	0.8	0.8	-Developmental -Neurological
Carbon tetrachloride	56-23-5	0.5	0.7	0.04	0.06	0.06	Cancer -Liver
Carbophenothion [or Trithion]	786-19-6	11	250	13	1.5	1.5	-Neurological
Carboxin	5234-68-4	7400	120000	5	0.4	0.4	-Body Weight
CFC 113 [see Trichloro-1,2,2-trifluoroethane, 1,1,2-]							-Adrenals
Chloral hydrate	302-17-0	5700	62000	0.3	NA	NA	-Gastrointestinal -Neurological
Chloramben	133-90-4	960	12000	0.5	NA	NA	-Liver
Chlordane (total)	(j)	2.8	14	9.6	0.003	0.003	-Cancer -Liver
Chlorine cyanide [or Cyanogen chloride]	506-77-4	3100	37000	71	0.3	0.3	-Neurological -Thyroid
Chloro-1,1-difluoroethane, 1-	75-68-3	16000	84000	NA	NA	NA	-None Specified
Chloro-1,3-butadiene [or Chloroprene]	126-99-8	3.5	19	1.5	NA	NA	-Hair Loss -Nasal
Chloro-3-methylphenol, 4- [see Chloro-m-cresol, p-]							
Chloroacetic acid	79-11-8	130	1700	0.07	13	13	-Cardiovascular
Chloroaniline, p-	106-47-8	270	3700	0.2	0.02	0.02	-Spleen
Chlorobenzene	108-90-7	120	650	1.3	0.2	0.2	-Liver
Chlorobenzilate	510-15-6	3.6	18	0.1	0.01	0.01	-Cancer -Body Weight
Chlorobenzoic acid, p-	74-11-3	16000	290000	28	NA	NA	-None Specified
Chlorobenzotrifluoride, 4-	98-56-6	130	710	5.2	NA	NA	-Kidney
Chlorobutane, 1-	109-69-3	780	4200	26	NA	NA	-Blood -Neurological
Chlorodifluoromethane	75-45-6	16000	82000	NA	NA	NA	-Adrenals -Kidney -Pituitary
Chloroethane [see Ethyl chloride]							
Chloroform	67-66-3	0.4	0.6	0.4	2.8	2.8	Cancer -Liver
Chloro-m-cresol, p- [or Chloro-3-methylphenol, 4-]	59-50-7	600	8000	0.4	0.6	0.6	-Body Weight
Chloromethane [see Methyl chloride]							

Chloronaphthalene, beta-	91-58-7	5000	61000	260	740	740	-Liver - Respiratory
Chloronitrobenzene, o-	88-73-3	22	51	0.02	NA	NA	Cancer
Chloronitrobenzene, p-	100-00-5	31	73	0.03	1.6	1.6	Cancer
Chlorophenol, 2-	95-57-8	130	860	0.7	2.5	2.5	-Reproductive
Chlorophenol, 3-	108-43-0	370	5900	0.002	3.1	3.1	-Reproductive
Chlorophenol, 4-	106-48-9	330	4400	0.0007	1.2	1.2	-Reproductive
Chloroprene [see Chloro-1,3-butadiene]							
Chloropropane, 2-	75-29-6	47	250	NA	NA	NA	-Liver
Chlorothalonil [or Bravo]	1897-45-6	88	420	0.2	0.06	0.06	-Cancer -Kidney
Chlorotoluene, o-	95-49-8	200	1200	2.8	7.7	7.7	-Body Weight
Chlorotoluene, p-	106-43-4	170	990	2.5	NA	NA	-None Specified
Chlorpropham	101-21-3	16000	310000	51	7	7	-Bone Marrow - Kidney -Liver - Spleen
Chlorpyrifos	2921-88-2	250	5000	15	0.001	0.001	-Neurological
Chromium (hexavalent) (b)	18540-29-9	310	470	NA	4.2	19	-Cancer - Respiratory
Chromium (total) (b,g)	NOCAS	310	470	38	4.2	19	-Cancer
Chromium (trivalent) (b)	16065-83-1	110000	*	NA	NA	*	-None Specified
Chrysene	218-01-9	##	##	77	NA	NA	-Cancer
Cobalt	7440-48-4	1700	42000	***	NA	NA	-Cardiovascular -Immunological -Neurological - Reproductive
Copper	7440-50-8	150**	89000	***	(k)	***	-Gastrointestinal
Coumaphos	56-72-4	21	450	0.3	0.0007	0.0007	-Neurological
Cresol, m- [see Methylphenol, 3-]							
Cresol, o- [see Methylphenol, 2-]							
Cresol, p- [see Methylphenol, 4-]							
Crotonaldehyde	123-73-9	0.6	3.3	0.00008	NA	NA	-Cancer
Cumene [or Isopropyl benzene]	98-82-8	220	1200	0.2	56	56	-Adrenals - Kidney
Cyanide, free (b)	57-12-5	34**	11000	0.56	0.02	0.004	-Neurological - Thyroid
Cyanogen	460-19-5	560	3400	57	NA	NA	-Neurological - Thyroid

Cyanogen chloride [see Chlorine cyanide]							
Cycloate	1134-23-2	340	4700	0.7	2.5	2.5	-Neurological
Cyclohexanone	108-94-1	150000	*	150	110	110	
Cyclohexylamine	108-91-8	18000	440000	7.9	22	22	-Reproductive
Cyhalothrin [or Karate]	68085-85-8	420	9600	290	150	150	-Developmental
Cymene, p- (or Isopropyltoluene)	99-87-6	960	5600	NA	NA	NA	-Gastrointestinal -Neurological -Skin
Cypermethrin	52315-07-8	840	19000	30	0.002	0.002	-Gastrointestinal
DBCP, 1,2- [see Dibromo-3-chloropropane, 1,2-]							
DDD, 4,4'- [see Dichlorodiphenyl dichloroethane, p,p']							
DDE, 4,4'- [see Dichlorodiphenyl dichloroethylene, p,p'-]							
DDT, 4,4'- [see Dichlorodiphenyl trichloroethane, p,p'-]							
Decabromodiphenyl ether	1163-19-5	840	19000	9.3	NA	NA	-None Specified
DEHP [see Bis(2-ethylhexyl)phthalate]							
Diallate	2303-16-4	16	82	0.6	NA	NA	-Cancer -None Specified
Diazinon	333-41-5	70	1200	0.2	0.00005	0.00005	-Neurological
Dibenz(a,h)anthracene	53-70-3	##	##	0.7	NA	NA	-Cancer
Dibenzofuran	132-64-9	320	6300	15	36	36	-None Specified
Dibromo-3-chloropropane, 1,2- [or DBCP, 1,2-]	96-12-8	0.7	3.8	0.001	NA	NA	-Cancer -Reproductive
Dibromobenzene, 1,4-	106-37-6	430	3600	7.8	27	27	-Liver
Dibromochloromethane	124-48-1	1.5	2.3	0.003	0.2	0.2	-Cancer -Liver
Dibromoethane, 1,2- [or EDB]	106-93-4	0.1	0.2	0.0001	0.07	0.07	-Cancer -Reproductive
Dibutyl phthalate	84-74-2	8200	170000	47	1.5	1.5	-Mortality
Dicamba	1918-00-9	2300	40000	2.6	2.4	2.4	-Developmental
Dichloroacetic acid	79-43-6	21	120	0.005	8.1	8.1	-Cancer -Liver -Neurological -Reproductive
Dichloroacetonitrile	3018-12-0	340	2900	0.03	NA	NA	-None Specified

Dichlorobenzene, 1,2-	95-50-1	880	5000	17	2.8	2.8	-Body Weight
Dichlorobenzene, 1,3-	541-73-1	380	2200	7	2.8	2.8	-None Specified
Dichlorobenzene, 1,4-	106-46-7	6.4	9.9	2.2	0.09	0.09	-Cancer -Liver
Dichlorobenzidine, 3,3'-	91-94-1	2.1	9.9	0.003	0.0009	0.0009	Cancer
Dichlorobenzophenone, 4,4'-	90-98-2	2500	51000	25	190	190	-None Specified
Dichlorodifluoromethane	75-71-8	77	410	44	NA	NA	-Liver
Dichlorodiphenyldichloroethane, p,p'- [or DDD, 4,4'-]	72-54-8	4.2	22	5.8	0.01	0.01	Cancer
Dichlorodiphenyldichloroethylene, p,p'- [or DDE, 4,4'-]	72-55-9	2.9	15	18	0.04	0.04	Cancer
Dichlorodiphenyltrichloroethane, p,p'- [or DDT, 4,4'-]	50-29-3	2.9	15	11	0.06	0.06	-Cancer -Liver
Dichloroethane, 1,1-	75-34-3	390	2100	0.4	NA	NA	-Kidney
Dichloroethane, 1,2- [or EDC]	107-06-2	0.5	0.7	0.01	0.2	0.2	-Cancer -None Specified
Dichloroethene, 1,1-	75-35-4	95	510	0.06	0.03	0.03	-Liver
Dichloroethene, cis-1,2-	156-59-2	33	180	0.4	NA	NA	-Blood
Dichloroethene, trans-1,2-	156-60-5	53	290	0.7	75	75	-Blood -Liver
Dichlorophenol, 2,3-	576-24-9	230	4100	0.0008	1.2	1.2	-Immunological
Dichlorophenol, 2,4-	120-83-2	190	2400	0.003	0.1	0.1	-Immunological
Dichlorophenol, 2,5-	583-78-8	240	4600	0.02	4.3	4.3	-Immunological
Dichlorophenol, 2,6-	87-65-0	220	3600	0.007	2.5	2.5	-Immunological
Dichlorophenol, 3,4-	95-77-2	230	3700	0.01	2	2	-Immunological
Dichlorophenoxy acetic acid, 2,4-	94-75-7	770	13000	0.7	0.9	0.9	-Blood -Kidney -Liver
Dichloropropane, 1,2-	78-87-5	0.6	0.9	0.03	0.09	0.09	-Cancer -Nasal
Dichloropropene, 1,3-	542-75-6	1.4	2.2	0.002	0.09	0.09	-Cancer -Gastrointestinal -Nasal
Dichlorprop	120-36-5	370	5800	0.3	0.3	0.3	-None Specified
Dichlorvos	62-73-7	0.3	0.4	0.0006	0.00002	0.00002	-Cancer -Neurological
Dicofol [or Kelthane]	115-32-2	2.2	11	0.01	0.0008	0.0008	-Cancer -Adrenals
Dicrotophos [see Bidrin]							
Dieldrin	60-57-1	0.06	0.3	0.002	0.0001	0.0001	-Cancer -Liver

Diethyl phthalate	84-66-2	61000	*	86	5.9	5.9	-Body Weight
Diethylene glycol, monoethyl ether	111-90-0	130000	*	63	750	750	-Kidney
Diisopropyl methylphosphonate	1445-75-6	4500	49000	3.6	85	85	-None Specified
Dimethoate	60-51-5	13	170	0.006	0.0004	0.0004	-Neurological
Dimethoxybenzidine, 3,3'-	119-90-4	69	330	0.2	NA	NA	-Cancer
Dimethrin	70-38-2	24000	440000	2500	1.3	1.3	-Liver
Dimethylaniline, 2,4-	95-68-1	0.5	1	0.0005	19	19	-Cancer -Blood -Spleen
Dimethylaniline, N,N-	121-69-7	55	380	0.1	12	12	-Spleen
Dimethylbenzidine, 3,3'-	119-93-7	0.1	0.6	0.001	NA	NA	-Cancer
Dimethylformamide, N,N-	68-12-2	1400	8600	3	210	210	-Gastrointestinal -Liver
Dimethylphenol, 2,4-	105-67-9	1300	18000	1.7	1.9	1.9	-Blood -Neurological
Dimethylphenol, 2,6-	576-26-1	34	370	0.04	5.2	5.2	-Kidney -Liver -Spleen
Dimethylphenol, 3,4-	95-65-8	71	1000	0.06	3.4	3.4	-Kidney -Liver -Spleen
Dimethylphthalate	131-11-3	690000	*	380	7.8	7.8	-Kidney
Dinitrobenzene, 1,2- (o)	528-29-0	23	240	0.01	0.2	0.2	-Spleen
Dinitrobenzene, 1,3- (m)	99-65-0	5.8	64	0.004	0.4	0.4	-Spleen
Dinitrobenzene, 1,4- (p)	100-25-4	35	890	0.04	0.4	0.4	-Spleen
Dinitro-o-cresol, 4,6-	534-52-1	8.4	180	0.4	NA	NA	-Metabolic Disorders
Dinitrophenol, 2,4-	51-28-5	110	1200	0.06	0.01	0.01	-Eye
Dinitrotoluene, 2,4-	121-14-2	1.2	4.3	0.0004	0.07	0.07	-Cancer -Liver -Neurological
Dinitrotoluene, 2,6-	606-20-2	1.2	3.8	0.0004	0.005	0.005	-Cancer -Blood -Kidney -Neurological
Di-n-octylphthalate	117-84-0	1700	39000	480000	NA	NA	-Kidney -Liver
Dinoseb	88-85-7	65	840	0.03	0.03	0.03	-Developmental
Dioxane, 1,4-	123-91-1	23	38	0.01	0.5	0.5	-Cancer
Dioxins, as total 2,3,7,8-TCDD equivalents (e)	1746-01-6	7E-6	3E-5	0.003	6E-7	6E-7	-Cancer
Diphenamid	957-51-7	2300	41000	2.6	20	20	-Liver
Diphenyl [see Biphenyl, 1,1-]							
Diphenylamine, N,N-	122-39-4	2000	40000	14	NA	NA	-Kidney -Liver

Diphenylhydrazine, 1,2-	122-66-7	1.1	4.8	0.002	0.007	0.007	-Cancer
Diquat	85-00-7	190	4300	800	60	60	-Eye
Disulfoton	298-04-4	3.3	66	0.09	0.1	0.1	-Neurological
Diuron	330-54-1	150	2300	0.3	0.2	0.2	-Blood
EDB [see Dibromoethane, 1,2-]							
EDC [see Dichloroethane, 1,2-]							
Endosulfan (alpha+beta+sulfate)	115-29-7	450	7600	3.8	0.005	0.0008	-Cardiovascular -Kidney
Endothall	145-73-3	1800	44000	0.4	0.4	0.4	-Gastrointestinal
Endrin	72-20-8	25	510	1	0.001	0.001	-Liver
EPEG [see Ethylphthalyl ethylglycolate]							
Epichlorohydrin	106-89-8	14	80	0.03	1.1	1.1	-Cancer -Kidney -Nasal
EPN [see Ethyl p-nitrophenyl phenylphosphorothioate]							
EPTC [see Ethyl dipropylthiocarbamate, S-]							
Ethanol	64-17-5	*	*	40	NA	NA	-Developmental
Ethion	563-12-2	42	920	1.7	0.003	0.003	-Neurological
Ethoprop	13194-48-4	7.4	120	0.005	0.002	0.002	-Neurological
Ethoxyethanol acetate, 2-	111-15-9	14000	130000	8.8	8.4	8.4	-Developmental
Ethoxyethanol, 2-	110-80-5	10000	72000	13	NA	NA	-Reproductive
Ethyl acetate	141-78-6	9100	53000	26	26	26	-Body Weight
Ethyl acrylate	140-88-5	2	3	0.002	0.6	0.6	-Cancer
Ethyl chloride [or Chloroethane]	75-00-3	3.9	5.4	0.06	NA	NA	-Cancer - Developmental
Ethyl dipropylthiocarbamate, S- [or EPTC]	759-94-4	1400	14000	11	15	15	-Cardiovascular
Ethyl ether	60-29-7	260	1400	5	850	850	-Body Weight
Ethyl methacrylate	97-63-2	630	3500	3.5	NA	NA	-Kidney
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	0.8	18	0.02	0.003	0.003	-Neurological
Ethylbenzene	100-41-4	1500	9200	0.6	12	12	-Developmental -Kidney -Liver
Ethylene diamine	107-15-3	1100	11000	0.6	3.2	3.2	-Blood - Cardiovascular

Ethylene glycol	107-21-1	110000	*	56	65	65	-Kidney
Ethylene oxide	75-21-8	0.3	0.4	0.0002	20	20	-Cancer
Ethylene thiourea [or ETU]	96-45-7	7	57	0.001	5.6	5.6	-Cancer -Thyroid
Ethylphthalyl ethylglycolate [or EPEG]	84-72-0	260000	*	1200	NA	NA	-Kidney
Ethyltoluene, o-	622-96-8	320	1900	8.1	NA	NA	-Body Weight -Liver
Ethyltoluene, p-	611-14-3	330	1900	8.1	NA	NA	-Body Weight -Liver
ETU [see Ethylene thiourea]							
Fenamiphos	22224-92-6	19	340	0.02	0.003	0.003	-Neurological
Fensulfothion	115-90-2	19	310	0.01	0.004	0.004	-Neurological
Fenvalerate [see Pydrin]							
Fluometuron	2164-17-2	980	16000	0.9	1.8	1.8	-None Specified
Fluoranthene	206-44-0	3200	59000	1200	1.3	1.3	-Blood -Kidney -Liver
Fluorene	86-73-7	2600	33000	160	17	17	-Blood
Fluoride	7782-41-4	840**	130000	6000	30000	15000	-Teeth mottling
Fluoridone	59756-60-4	7000	180000	2500	460	460	-Kidney -Reproductive
Fonofos	944-22-9	140	2100	0.4	0.003	0.003	-Liver -Neurological
Formaldehyde	50-00-0	23	31	2.4	0.4	0.4	-Cancer -Gastrointestinal
Furan	110-00-9	4.8	26	0.09	NA	NA	-Liver
Furfural	98-01-1	190	2400	0.09	2.7	2.7	-Liver -Nasal
Glycidaldehyde	765-34-4	15	120	0.01	NA	NA	-Adrenals -Blood -Kidney
Glyphosate [or Roundup]	1071-83-6	8800	220000	3.3	0.5	0.5	-Kidney
Guthion [or Methyl azinphos]	86-50-0	120	2400	0.2	0.0002	0.0002	-Neurological
Heptachlor	76-44-8	0.2	1	23	0.01	0.01	-Cancer -Liver
Heptachlor epoxide	1024-57-3	0.1	0.5	0.6	0.0001	0.0001	-Cancer -Liver
Hexachloro-1,3-butadiene	87-68-3	6.2	13	1	110	110	-Cancer -Kidney
Hexachlorobenzene	118-74-1	0.4	1.2	2.2	0.0006	0.0006	-Cancer-Liver
Hexachlorocyclohexane, alpha- [or BHC, alpha-]	319-84-6	0.1	0.6	0.0003	0.0003	0.0003	-Cancer
Hexachlorocyclohexane, beta- [BHC, beta-]	319-85-7	0.5	2.4	0.001	0.003	0.003	-Cancer

Hexachlorocyclohexane, delta- [or BHC, delta-]	319-86-8	24	490	0.2	NA	NA	-Kidney -Liver
Hexachlorocyclohexane, gamma- [or Lindane or BHC, gamma-]	58-89-9	0.7	2.5	0.009	0.003	0.003	-Cancer -Kidney -Liver
Hexachlorocyclopentadiene	77-47-4	9.5	50	400	24	24	-Gastrointestinal
Hexachloroethane	67-72-1	38	87	0.2	0.2	0.2	-Cancer -Kidney
Hexachlorophene	70-30-4	26	670	53	26	26	-Neurological
Hexahydro-1,3,5-trinitro-1,3,5-triazine [or RDX]	121-82-4	7.7	28	0.002	1.3	1.3	-Cancer -Reproductive
Hexane, n-	110-54-3	680	3900	2.1	1200	1200	-Neurological
Hexanone, 2- [or Methyl butyl ketone]	591-78-6	24	130	1.4	NA	NA	-None Specified
Hexazinone	51235-04-2	2300	32000	1.1	120	120	-Body Weight
Hydroquinone	123-31-9	2600	35000	1.4	0.02	0.02	-Blood
Indeno(1,2,3-cd)pyrene	193-39-5	##	##	6.6	NA	NA	-Cancer
Iron	7439-89-6	53000	*	***	***	***	-Gastrointestinal
Isobutyl alcohol	78-83-1	6400	42000	8.9	200	200	-Neurological
Isophorone	78-59-1	540	1200	0.2	3.8	3.8	-Cancer -None Specified
Isopropyl benzene [see Cumene]							
Isopropyl toluene [see p-Cymene]							
Karate [see Cyhalothrin, lambda]							
Kelthane [see Dicofol]							
Lead (d)	7439-92-1	400	1400	***	(k)	***	-Neurological
Limonene	138-86-3	640	3600	42	NA	NA	-Kidney -Liver
Lindane [see Hexachlorocyclohexane, gamma-]							
Linuron	330-55-2	160	3100	0.04	1.4	1.4	-Blood
Lithium	7439-93-2	1700	44000	***	NA	NA	-None Specified
Malathion	121-75-5	1500	24000	4.2	0.003	0.003	-Neurological
Maleic anhydride	108-31-6	3200	24000	2.8	NA	NA	-Kidney
Maleic hydrazide	123-33-1	1000	5400	16	3.4	3.4	-Kidney
Malonitrile	109-77-3	1.2	13	0.0006	NA	NA	-Liver -Spleen

Maneb	12427-38-2	410	8400	2.9	0.5	0.5	-Thyroid
Manganese	7439-96-5	3500	43000	***	NA	NA	-Neurological
MCPA [see Methyl-4-chlorophenoxy acetic acid, 2-]							
MCPP [see Propionic acid, 2-(2-methyl-4-chlorophenoxy)]							
Mercury (c)	7439-97-6	3	17	2.1	0.01	0.03	-Neurological
Mercury, methyl- [see Methylmercury]							
Merphos	150-50-5	2.5	52	0.5	NA	NA	-Neurological
Merphos oxide	78-48-8	2.5	56	0.3	0.3	0.3	-Neurological
Methacrylonitrile	126-98-7	1	5.9	0.003	NA	NA	-Liver
Methamidophos	10265-92-6	3.1	36	0.001	0	0	-Neurological
Methanol	67-56-1	13000	90000	14	180	180	-Developmental -Eye - Neurological
Methidathion	950-37-8	68	950	0.003	0.0001	0.0001	-Liver
Methomyl	16752-77-5	38	200	1.2	0.007	0.007	-Kidney -Spleen
Methoxy-5-nitroaniline, 2-	99-59-2	19	71	0.006	NA	NA	-Cancer
Methoxychlor	72-43-5	420	8800	160	0.1	0.1	-Developmental -Reproductive
Methyl acetate	79-20-9	6800	38000	16	NA	NA	-Liver
Methyl acrylate	96-33-3	260	1500	0.9	NA	NA	-None Specified
Methyl azinphos [see Guthion]							
Methyl bromide [see Bromomethane]							
Methyl butyl ketone [see Hexanone, 2-]							
Methyl chloride [or Chloromethane]	74-87-3	4	5.7	0.01	2.3	2.3	-Cancer - Neurological
Methyl chloroform [see Trichloroethane, 1,1,1-]							
Methyl ethyl ketone [or Butanone, 2-]	78-93-3	16000	110000	17	490	490	-Developmental
Methyl isobutyl ketone [or MIBK]	108-10-1	4300	44000	2.6	110	110	-Kidney -Liver
Methyl methacrylate	80-62-6	1900	10000	0.1	32	32	-Nasal
Methyl parathion [or Parathion, methyl]	298-00-0	20	370	0.06	0.0003	0.0003	-Blood - Neurological
Methyl styrene (mixed)	25013-15-4	120	770	0.8	NA	NA	-Nasal

Methyl styrene, alpha	98-83-9	1500	10000	11	NA	NA	-Kidney -Liver
Methyl tert-butyl ether [or MTBE]	1634-04-4	4400	24000	0.09	150	150	-Eye -Kidney -Liver
Methyl-4-chlorophenoxy acetic acid, 2- [or MCPA]	94-74-6	35	500	0.02	0.4	0.4	-Kidney -Liver
Methylaniline, 2-	95-53-4	2.6	6.4	0.0009	0.2	0.2	-Cancer
Methylene bis(2-chloroaniline), 4,4-	101-14-4	6.4	23	0.001	NA	NA	-Cancer -Liver -Bladder
Methylene bromide	74-95-3	96	550	0.3	NA	NA	-Blood
Methylene chloride	75-09-2	17	26	0.02	7.3	7.3	-Cancer -Liver
Methylene diphenyl diisocyanate	101-68-8	400	2100	NA	NA	NA	-Nasal
Methylmercury [or Mercury, methyl]	22967-92-6	1.1	6.1	0.002	NA	NA	-Neurological
Methylnaphthalene, 1-	90-12-0	200	1800	3.1	10	10	-Nasal
Methylnaphthalene, 2-	91-57-6	210	2100	8.5	9.1	9.1	-Nasal
Methylphenol, 2- [or Cresol, o-]	95-48-7	2900	31000	0.3	1.9	1.9	-Neurological
Methylphenol, 3- [or Cresol, m-]	108-39-4	2900	33000	0.3	3.3	3.3	-Neurological
Methylphenol, 4- [or Cresol, p-]	106-44-5	300	3400	0.03	0.5	0.5	-Neurological -Respiratory
Metolachlor	51218-45-2	12000	200000	1.2	0.01	0.01	-Body Weight
Metribuzin	21087-64-9	54	290	2.2	0.8	0.8	-Kidney -Liver
Metsulfuron, methyl [see Ally]							
Mevinphos	7786-34-7	18	270	0.01	0.0003	0.0003	-Neurological
MIBK [see Methyl isobutyl ketone]							
Molinate	2212-67-1	120	1300	0.1	0.1	0.1	-Reproductive
Molybdenum	7439-98-7	440	11000	***	NA	NA	-Gout
MTBE [see Methyl tert-butyl ether]							
Naled	300-76-5	150	2400	0.1	0.0002	0.0002	-Neurological
Naphthalene	91-20-3	55	300	1.2	2.2	2.2	-Nasal
Nickel (b,c)	7440-02-0	340**	35000	130	(k)	11	-Body Weight
Nitrate	14797-55-8	140000	*	***	NA	NA	-Blood
Nitrite	14797-65-0	8700	220000	***	NA	NA	-Blood
Nitroaniline, m-	99-09-2	21	130	0.01	NA	NA	-Cancer -Blood

Nitroaniline, o-	88-74-4	24	130	0.1	NA	NA	-Blood
Nitroaniline, p-	100-01-6	17	96	0.008	5.9	5.9	-Cancer -Blood
Nitrobenzene	98-95-3	18	140	0.02	0.6	0.6	-Adrenals -Blood -Kidney -Liver
Nitroglycerin	55-63-0	27	54	0.03	NA	NA	Cancer -Cardiovascular
Nitrophenol, 4-	100-02-7	560	7900	0.3	0.3	0.3	-None Specified
Nitroso-di-ethylamine, N-	55-18-5	0.003	0.005	0.000001	0.00003	0.00003	-Cancer
Nitroso-dimethylamine, N-	62-75-9	0.009	0.02	0.000003	0.01	0.01	-Cancer
Nitroso-di-n-butylamine, N-	924-16-3	0.05	0.08	0.00009	0.0005	0.0005	-Cancer
Nitroso-di-n-propylamine, N-	621-64-7	0.08	0.2	0.00005	0.005	0.005	-Cancer
Nitroso-diphenylamine, N-	86-30-6	180	730	0.4	0.3	0.3	-Cancer
Nitroso-N-methylethylamine, N-	10595-95-6	0.02	0.04	0.000006	0.0002	0.0002	-Cancer
Nitrotoluene, m-	99-08-1	640	4700	1.4	3.6	3.6	-Spleen
Nitrotoluene, o-	88-72-2	400	3300	0.9	7.3	7.3	-Spleen
Nitrotoluene, p-	99-99-0	750	12000	0.9	7.3	7.3	-Spleen
Nonylphenol	25154-52-3	100	2200	20	14	3.4	-Kidney
Octamethylpyrophosphoramide	152-16-9	130	1600	0.06	NA	NA	-Neurological
Oxamyl	23135-22-0	1700	22000	0.9	0.04	0.04	-Body Weight
Paraquat	1910-42-5	340	5500	16	230	230	-Respiratory
Parathion	56-38-2	500	11000	1	0.01	0.01	-Neurological
Parathion, methyl [see Methyl parathion]							
PCBs [or Aroclor mixture]	1336-36-3	0.5	2.6	17	0.002	0.002	-Cancer -Immunological
PCE [see Tetrachloroethene]							
Pebulate	1114-71-2	2000	17000	8.5	7.4	7.4	-Blood
Pendimethalin	40487-42-1	3200	58000	28	1	1	-Liver
Pentachlorobenzene	608-93-5	45	480	3.9	1.2	1.2	-Kidney -Liver
Pentachloronitrobenzene	82-68-8	3.3	12	0.2	0.03	0.03	-Cancer -Liver
Pentachlorophenol	87-86-5	7.2	28	0.03	0.2	0.2	-Cancer -Kidney -Liver
Permethrin	52645-53-1	4200	96000	2500	0.007	0.007	-Liver
Phenanthrene	85-01-8	2200	36000	250	NA	NA	-Kidney

Phenmedipham [or Betanal]	13684-63-4	21000	450000	150	18	18	-None Specified
Phenol	108-95-2	500**	220000	0.05	0.03	0.03	-Developmental
Phenylenediamine, m-	108-45-2	360	4000	0.2	NA	NA	-Liver
Phenylenediamine, o-	95-54-5	17	54	0.004	NA	NA	-Cancer
Phenylenediamine, p-	106-50-3	12000	160000	6.2	NA	NA	-Whole Body
Phenylphenol, 2-	90-43-7	490	2100	0.4	0.8	0.8	-Cancer
Phorate	298-02-2	16	320	0.3	0.001	0.001	-Neurological
Phosmet	732-11-6	1600	33000	5	0.004	0.004	-Liver - Neurological
Phthalic acid, p-	100-21-0	8000	45000	110	NA	NA	-Bladder
Phthalic anhydride	85-44-9	11000	63000	76	NA	NA	-Kidney -Nasal - Respiratory
Polychlorinated dibenzo-p-dioxins [see Dioxins]							
Prometon	1610-18-0	1200	23000	2.4	14	14	-None Specified
Prometryn	7287-19-6	320	6100	0.7	0.5	0.5	-Bone Marrow - Kidney -Liver
Propachlor	1918-16-7	990	17000	1.1	0.1	0.1	-Liver
Propanil	709-98-8	390	6700	0.4	0.2	0.2	-Spleen
Propazine	139-40-2	1600	28000	0.2	2.7	2.7	-Body Weight
Propionic acid, 2-(2-methyl-4-chlorophenoxy) [or MCPP]	93-65-2	64	800	0.03	NA	NA	-Kidney
Propoxur [see Baygon]							
Propylbenzene, n-	103-65-1	340	1900	12	NA	NA	
Propylene glycol	57-55-6	*	*	560	140	140	-Blood -Bone Marrow
Propylene glycol monomethyl ether	107-98-2	38000	390000	20	NA	NA	-Kidney -Liver - Neurological
Propylene oxide	75-56-9	3.1	9.3	0.0006	NA	NA	-Cancer -Nasal - Respiratory
Pydrin [or Fenvalerate]	51630-58-1	2100	46000	70	0.0001	0.0001	-Neurological
Pyrene	129-00-0	2400	45000	880	1.3	1.3	-Kidney
Pyridine	110-86-1	20	130	0.03	5.4	5.4	-Liver
Quinoline	91-22-5	0.3	1.3	0.0009	NA	NA	-Cancer
RDX [see Hexahydro-1,3,5-trinitro-1,3,5-triazine]							
Resmethrin	10453-86-8	2500	56000	1200	0.01	0.01	-Reproductive

Ronnel	299-84-3	4200	88000	1300	0.2	0.2	-Liver
Roundup [see Glyphosate]							
Selenium (b,c)	7782-49-2	440	11000	5.2	0.5	7.4	-Hair Loss -Neurological -Skin
Sevin [see Carbaryl]							
Silver (b)	7440-22-4	410	8200	17	0.01	0.06	-Skin
Silvex [see Trichlorophenoxy propionic acid]							
Simazine	122-34-9	7.8	35	0.08	0.1	0.1	-Cancer -Blood
Strontium	7440-24-6	52000	*	***	NA	NA	-Bone
Strychnine	57-24-9	23	380	0.02	0.3	0.3	-Mortality
Styrene	100-42-5	3600	23000	3.6	16	16	-Blood -Liver -Neurological
TCDD, 2,3,7,8- [see Dioxins, as total 2,3,7,8-TCDD equivalents]							
TCE [see Trichloroethene]							
Temik [see Aldicarb]							
Terbacil	5902-51-2	920	14000	0.5	14	14	-Liver -Thyroid
Terbufos	13071-79-9	1.9	29	0.02	0.001	0.001	-Neurological
Terbutryn	886-50-0	88	2200	0.2	0.09	0.09	-Blood
Tetrachlorobenzene, 1,2,4,5-	95-94-3	12	100	0.5	0.4	0.4	-Kidney
Tetrachloroethane, 1,1,1,2-	630-20-6	2.9	4.3	0.01	NA	NA	-Cancer -Kidney -Liver
Tetrachloroethane, 1,1,2,2-	79-34-5	0.7	1.2	0.001	0.08	0.08	-Cancer -Liver
Tetrachloroethene [or PCE]	127-18-4	8.8	18	0.03	0.1	0.1	-Cancer -Liver
Tetrachlorophenol, 2,3,4,6-	58-90-2	2100	30000	3.2	0.07	0.07	Liver
Tetraethyl dithiopyrophosphate	3689-24-5	35	510	0.1	0.0004	0.0004	-Bone Marrow -Neurological
Thallium	7440-28-0	6.1	150	2.8	9	9	-Hair Loss -Liver
Thiobencarb	28249-77-6	810	16000	2.9	NA	NA	-Kidney
Thiram	137-26-8	400	7700	1.1	0.005	0.005	-Neurological
Tin	7440-31-5	47000	880000	***	NA	NA	-Kidney -Liver
Toluene	108-88-3	7500	60000	0.5	5.6	5.6	-Kidney -Liver -Neurological

Toluene diisocyanate, 2,4/2,6-mixture	26471-62-5	1.3	15	NA	NA	NA	-Respiratory
Toluidine, p-	106-49-0	2.2	4.5	0.0009	NA	NA	-Cancer
Toxaphene	8001-35-2	0.9	4.5	31	0.002	0.002	-Cancer -Developmental
Triallate	2303-17-5	980	16000	8.4	6	6	-Liver -Spleen
Tributyltin oxide	56-35-9	25	570	7.6	0.2	0.2	-Immunological
Trichloro-1,2,2-trifluoroethane, 1,1,2- [or CFC 113]	76-13-1	18000	96000	11000	NA	NA	-Neurological
Trichloroacetic acid	76-03-9	770	8800	0.04	400	400	-None Specified
Trichlorobenzene, 1,2,3-	87-61-6	650	8200	4.6	5.6	5.6	-Adrenals
Trichlorobenzene, 1,2,4-	120-82-1	660	8500	5.3	1.7	1.7	-Adrenals
Trichlorobenzene, 1,3,5-	108-70-3	260	2300	16	NA	NA	-None Specified
Trichloroethane, 1,1,1- [or Methyl chloroform]	71-55-6	730	3900	1.9	2.6	2.6	-None Specified
Trichloroethane, 1,1,2-	79-00-5	1.4	2	0.03	0.09	0.09	-Cancer -Liver
Trichloroethene [or TCE]	79-01-6	6.4	9.3	0.03	0.9	0.9	-Cancer -None Specified
Trichlorofluoromethane	75-69-4	270	1500	33	NA	NA	-Cardiovascular -Kidney -Respiratory
Trichlorophenol, 2,4,5-	95-95-4	7700	130000	0.07	1.5	1.5	-Kidney -Liver
Trichlorophenol, 2,4,6-	88-06-2	70	230	0.06	0.1	0.1	-Cancer
Trichlorophenoxy acetic acid, 2,4,5-	93-76-5	690	9500	0.4	0.8	0.8	-Kidney
Trichlorophenoxy propionic acid, 2, (2, 4, 5-) [or Silvex]	93-72-1	660	14000	5.4	NA	NA	-Liver
Trichloropropane, 1,1,2-	598-77-6	76	460	0.3	NA	NA	-Kidney -Liver -Thyroid
Trichloropropane, 1,2,3-	96-18-4	0.06	0.1	0.0001	0.001	0.001	-Cancer -Kidney -Liver
Trichloropropene, 1,2,3-	96-19-5	18	98	0.4	NA	NA	-Eye
Triethylamine	121-44-8	41	270	NA	NA	NA	-Nasal
Trifluralin	1582-09-8	92	280	3.6	0.2	0.2	-Cancer -Blood -Liver
Trimethyl phosphate	512-56-1	19	57	0.004	NA	NA	-Cancer
Trimethylbenzene, 1,2,3-	526-73-8	18	96	0.3	NA	NA	-None Specified
Trimethylbenzene, 1,2,4-	95-63-6	18	95	0.3	7.2	7.2	-None Specified
Trimethylbenzene, 1,3,5-	108-67-8	15	80	0.3	6.7	6.7	-None Specified
Trinitrobenzene, 1,3,5-	99-35-4	2000	26000	1	0.09	0.09	-Blood -Spleen

Trinitrophenylmethylnitramine	479-45-8	790	15000	1.4	NA	NA	-Kidney -Liver -Spleen
Trinitrotoluene, 2,4,6-	118-96-7	28	97	0.006	0.3	0.3	-Cancer -Liver
Trithion [see Carbophenothion]							
TRPH	NOCAS	460	2700	340	340	340	-Multiple Endpoints Mixed Contaminants
Uranium, soluble salts	7440-61-1	110	820	***	NA	NA	-Kidney
Vanadium (b)	7440-62-2	67**	10000	980	NA	NA	-Hair Loss
Vernam	1929-77-7	51	510	0.1	0.2	0.2	-Body Weight
Vinyl acetate	108-05-4	320	1700	0.4	3	3	-Kidney -Nasal
Vinyl chloride (i)	75-01-4	0.2	0.8	0.007	0.02	0.02	-Cancer -Liver
Xylenes, total	1330-20-7	130	700	0.2	3.9	3.9	-Neurological
Zinc (b,c)	7440-66-6	26000	630000	***	(k)	***	-Blood
Zinc phosphide	1314-84-7	26	660	***	NA	NA	-Body Weight
Zineb	12122-67-7	4100	82000	19	0.7	0.7	-Thyroid

Values expressed on a dry weight basis and rounded to two significant figures if >1 and to one significant figure if <1.

= These default Target Organ(s)/Systems or Effects are those reported to occur at the doses used to derive the referenced dose. Non-default Target Organ(s)/ Systems or Effects may be justified through a detailed toxicological analysis of the chemicals present at a specific site.

* Contaminant is not a health concern for this exposure scenario.

** Direct exposure value based on acute toxicity considerations. This criterion is applicable in scenarios where children might be exposed to soils (e.g. residences, schools, playgrounds).

*** Leachability values may be derived using the SPLP Test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.

= Site concentrations for carcinogenic polycyclic aromatic hydrocarbons shall be converted to Benzo(a)pyrene equivalents before comparison with the appropriate direct exposure SCTL for Benzo(a)pyrene using the approach described in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24, Miami-Dade County Code (September 2005).

(a) = See discussion on the development of SCTLs for Ammonia in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County (September 2005).

(b) = Leachability values derived from USEPA Soil Screening Guidance (1996). These values were derived assuming soil pH 6.8. These leachability values are dependent upon both the metal concentration in soil and soil characteristics. Thus, if site-specific soil characteristics are different than the defaults, these leachability values may not apply. If this is the case, site-specific leachability values may be derived using methods such as TCLP or SPLP.

(c) = Phytotoxicity must be considered.

(d) = Residential direct exposure value from USEPA Revised Interim Soil Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12 (1994). The industrial direct exposure value was derived using methodologies set forth in USEPA "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil', December 1996; and in 'Blood Lead Concentrations of U.S. Adult Females: Summary Statistics from Phases 1 and 2 of the NHANES III', March 2002.

(e) = The SCTL for Dioxins, as total 2,3,7,8-TCDD equivalents should be compared to the total dioxin equivalents for chlorinated dioxin and dibenzofuran congeners using the approach described in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County (September 2005).

(f) = The common name BHC is a misnomer for hexachlorocyclohexane.

(g) = Unless concentratons for both chromium III and VI are known, total chromium concentrations may be compared with direct exposures SCTLs for chromium VI.

(h) = Residential chronic SCTL for cadmium shall be used as a not-to-exceed value because the residential chronic SCTL for cadmium is indistinguishable from the SCTL based on acute toxicity.

(i) = Residential chronic SCTL for vinyl chloride calculated by adding prorated and non-prorated risks, as discussed in the DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County (September 2005).

(j) = 12789-03-6 or 57-74-9

(k) = Hardness-dependent fresh surface water CTLs shall be calculated using the site-specific hardness prior to calculating the leachcability based upon fresh surface water CTLs or comparing the SPLP leachate concentrations.

None Specified = Target organ(s) not determined.

NA = Not available.

Section 6. Section 24-44(2)(j)(ii) of the Code of Miami-Dade County, Florida, is hereby amended to read as follows:

Sec. 24-44. Clean-up Target Levels (CTLs) and Procedures for Site Rehabilitation Actions (SRAs).

(1) STATE PROGRAM CONTAMINANT CLEAN-UP TARGET LEVELS (CTLs) AND PROCEDURES.

* * *

(2) CLEAN-UP TARGET LEVELS (CTLs) AND PROCEDURES FOR SITES OR CONTAMINANTS OTHER THAN THOSE IDENTIFIED IN SECTION 24-44 (1)

(a) Intent. To protect human health, public safety and environmental resources using risk-based corrective action strategies and to establish the point at which a site rehabilitation action is determined to be accomplished.

(b) The acceptable level of protection for the establishment of human health based CTLs shall be a lifetime excess cancer risk level of one in one million (1.0E-06) and a hazard quotient of one (1) or less. In addition, the CTLs shall be established to protect aquatic life and to prevent nuisance conditions as applicable.

* * *

(h) Site rehabilitation actions shall neither be, nor reasonably be expected to be, a source of pollution, as herein defined, or cause, or reasonably be expected to cause, a nuisance as defined in Section 24-5, Section 24-27 or Section 24-28.

(i) Emergency response actions may be performed without prior approval from the Director, or the Director's designee, provided that these actions do not cause any adverse effects upon human health, public safety or the environment. The party or parties responsible for SRAs and performing the emergency response actions shall notify the Director, or the Director's designee, within 24 hours of the commencement of any such emergency response actions.

(j) Point of compliance, notification, source removal, and assessment procedures shall be as follows:

(i) The sampling points to determine compliance with Section 24-

44(2) shall be as set forth in Section 24-44.1 herein. However, contamination may exist beyond the property boundary while [[~~clean up~~]] >>SRAs<<, including natural attenuation in conjunction with appropriate monitoring, is proceeding.

(ii) When contamination exists beyond the property boundary of the site from which >>SRAs have been initiated<< [[~~the contamination originated, the property owners, residents, and tenants of any property onto or into which the contamination extends shall be notified. Notification shall be accomplished in writing by the party or parties responsible for SRAs within sixty (60) calendar days of the approval of the site assessment report. Notification shall include, but not be limited to, the following type of information: the type of contaminant and site remedy selected, a description of the location of the subject site, the name and address of the party or parties responsible for SRAs, and the name of a DERM contact. Persons receiving notice shall have thirty (30) calendar days upon receipt of the notice to comment on the assessment and the site remedy selected. Nothing herein shall preclude any persons from initiating a civil action as a result of said contamination.~~]] >>the party or parties responsible for SRAs shall commence notification in accordance with the following:

1. Laboratory analytical results, which comply with appropriate quality assurance protocols pursuant to Chapter 62-160, F.A.C., that document the off-site contamination, shall be submitted to DERM no later than ten (10) calendar days from the date that the laboratory analyses are completed. A site sketch shall be submitted along with the laboratory analytical data which indicates the locations where the samples were obtained that resulted in the confirmation of the contamination.

2. The property owners, residents, and tenants of any property onto or into which the contamination extends shall be notified within sixty (60) calendar days of the approval of the site assessment report. Notification shall include, but not be limited to, the following type of information: the type of contaminant and site remedy selected, a description of the location of the subject site, the name and address of the party or parties responsible for SRAs, and the name of a DERM contact. Persons receiving notice shall have thirty (30) calendar days upon receipt of the notice to comment on the assessment and the site remedy selected. Nothing herein shall preclude any persons from initiating a civil action as a result of said contamination.<<

* * *

Section 7. Section 24-44(2)(k)(ii) of the Code of Miami-Dade County, Florida, is hereby amended to read as follows:

(k) Site closure, in the form of a no further action or a no further action with conditions, shall be approved by the Director, or the Director's designee, when the CTLs or alternative CTLs established pursuant to Section 24-44(2)(f)(iii) and the requirements set forth in this section have been achieved.

(i) A no further action proposal shall be approved by the Director, or the Director's designee, if such proposal demonstrates that human health, public safety and the environment are protected and the following criteria are met:

1. Concentrations of contaminants detected in soil shall not exceed the lower of the direct exposure residential soil CTLs or the applicable leachability-based soil CTLs set forth in Section 24-44(2)(f)(v)(ii).

* * *

(ii) A no further action with conditions proposal shall be approved by the Director, or the Director's designee, provided the following: the property owner of the location elects to implement institutional and, if applicable, engineering controls; it is demonstrated, using site-specific data, modeling results, risk assessment studies, risk reduction techniques or a combination thereof, that human health, public safety and the environment are afforded protection equivalent to that provided in Section 24-44(2)(f)(i) and Section 24-44(2)(f)(ii); and the following criteria are met:

1. For contaminants detected in soil, a proposal for alternative soil CTLs shall be submitted to the department and shall achieve one of the following or a combination of the following:

a. Concentrations of contaminants detected in soil shall not exceed the lower of the industrial direct exposure soil CTLs set forth in Section 24-44(2)(f)(v)2. or the applicable leachability-based soil CTLs, set forth in Section 24-44(2)(f).

The applicable leachability-based soil CTLs shall be the groundwater leachability-based CTLs or alternative groundwater leachability-based CTLs derived in accordance with Section 24-44(2)(k)(ii)1c and Section 24-44(2)(k)(ii)2. If surface waters are, or are reasonably expected to be, affected by contaminated groundwater, as demonstrated using monitoring well data, groundwater flow rate and direction, or fate and transport modeling, then the applicable leachability-based soil CTLs shall be the

lower of the groundwater or the applicable freshwater or marine surface water leachability-based CTLs.

If a marine surface water is, or is reasonably expected to be, affected by contaminated groundwater, and no other property or fresh surface water bodies are located between the source property boundary and the marine surface water body and the groundwater on-site is not utilized, then the applicable leachability-based soil CTLs shall be the marine surface water leachability-based soil CTLs.

Notwithstanding the foregoing provisions of Section 24-44(2)(k)(ii)1.a., alternative industrial direct exposure and leachability-based CTLs may be proposed in accordance with the procedures set forth in Section 24-44(2)(f)(iii)3 and Section 24-44(2)(f)(iii)4. In addition, the applicable leachability-based soil CTLs may be exceeded if it is demonstrated using groundwater monitoring data supported, if required, by site-specific modeling, that contaminants will not leach into groundwater at concentrations which exceed the applicable groundwater CTLs. The groundwater monitoring data shall be compiled for a minimum period of one (1) year and shall include four (4) quarterly sampling events.

b. Concentrations of contaminants may exceed the soil CTLs if an engineering control, approved by the Director, or the Director's designee, in conjunction with the institutional control, is utilized to eliminate or control contaminant exposure and migration such that human health, public safety and the environment are afforded protection equivalent to that provided in Section 24-44(2)(f)(i) and Section 24-44(2)(f)(ii).

c. Concentrations of contaminants detected in soil shall not exceed the alternative soil CTLs derived in accordance with Section 24-44(2)(f)(iii) and Section 24-44(2)(1)(ii).

2. For contamination detected in groundwater, a proposal for alternative groundwater CTLs shall be submitted to the department and shall provide the following:

a. A complete evaluation of the current and projected use of the affected groundwater and documentation that the following conditions have been met:

(1) Source removal is completed as set forth in Section 24-44(2)(j)(iii).

(2) Groundwater contamination is not migrating away from a localized source.

(3) Groundwater concentrations at the property boundary, as determined by groundwater monitoring data supported, if required, by site-specific modeling, do not, and are not reasonably expected to, exceed the groundwater CTLs set forth in Section 24-44(2)(f)(v)1. The groundwater monitoring data shall be compiled for a minimum period of one (1) year and shall include four (4) quarterly sampling events.

[[~~(4) A copy of the FDEP exemption order as set forth in Section 120.542, Florida Statutes, has been submitted for the applicable contaminants.~~]]

If surface waters are, or are reasonably expected to be, affected by contaminated groundwater, as demonstrated using monitoring well data, groundwater flow rate and direction, or fate and transport modeling, then the groundwater CTLs shall be the lower of the groundwater CTLs or the applicable freshwater or marine surface water CTLs set forth in Section 24-44(2)(f)(v)1.

If a marine surface water is, or is reasonably expected to be, affected by contaminated groundwater, and no other property or fresh surface water bodies are located between the source property boundary and the marine surface water body and the groundwater on-site is not utilized, then the groundwater CTLs shall be the marine surface water CTLs.

b. If there is a receptor which may potentially be exposed to on-site groundwater and such exposure has not been eliminated by the implementation of institutional and, if applicable, engineering controls, then concentrations of contaminants detected in groundwater shall not exceed the alternative groundwater CTLs derived in accordance with Section 24-44(2)(f)(iii) and Section 24-44 (2)(1)(ii).

[[~~(iii)~~]]>>3.<<Concentrations of contaminants detected in surface water shall not exceed the applicable freshwater or marine surface water CTLs set forth in Section 24-44(2)(f)(v)1. Nothing herein shall supersede the rules governing Outstanding Florida Waters, aquatic preserves, areas of critical state concern and any other rules adopted pursuant to Section 403.061(34), Florida Statutes.

[[~~(iv)~~]]>>4.<<It is demonstrated that contaminants in sediments are not detected in concentrations, quantities, proportions, levels or accumulations which are, or are reasonably expected to be, injurious to human,

plant, animal, fish and other aquatic life, or property. This demonstration may be based, as applicable, on the Threshold Effects Levels published in the FDEP's guideline "Approach to the Assessment of Sediment Quality in Florida Coastal Waters" (November 1994), site specific bioassays, a site-specific risk assessment developed in accordance with Section 24-44(2)(l)(ii), or a combination thereof.

[[~~(v)~~]]>>5.<< If more than one (1) contaminant is present or contamination is present in more than one (1) media, the human health-based CTLs or alternative human health-based CTLs shall be adjusted to achieve the following: for non-carcinogenic compounds affecting the same organ(s), the hazard index (sum of the hazard quotients) shall be one (1) or less; and for carcinogens, the cumulative lifetime excess cancer risk level (sum of the lifetime excess cancer risk levels for each carcinogenic contaminant) shall be 1.0E-06 or less.

[[~~(vi)~~]]>>6.<<The property owner of the location at which site rehabilitation actions are being conducted elects to implement an institutional and, if applicable, >>an<< engineering control to eliminate or control exposure of human and environmental receptors to contaminants. When an engineering control is used in conjunction with institutional controls, an engineering control plan shall be submitted to the department. The engineering control plan shall provide details of the design and construction of the engineering control and shall demonstrate that the engineering control is effective, reliable and capable of being monitored and maintained.

The no further action with conditions proposal shall include a copy of the proposed institutional control, in a form prescribed by the Director, or the Director's designee, and approved by the Board of County Commissioners, with site-specific closure conditions.

Upon written approval by the Director, or the Director's designee, of the institutional control and, if applicable, >>the<< engineering control plan, the institutional control shall be recorded in the public records of Miami-Dade County. A copy of the recorded instrument shall be submitted to the department and the engineering control, if applicable, shall be implemented prior to approval of the no further action with conditions proposal.

Upon demonstration to the satisfaction of the Director, or the Director's designee, by the party or parties responsible for SRAs that institutional and, if applicable, engineering controls are no longer required because the conditions set forth in Section 24-44(2)(k)(i) have been achieved, the Director, or the Director's designee, shall release the institutional control.

[[~~(vii)~~]]>>7.<<An operating permit in accordance with Section 24-18 shall be required for all sites for which site rehabilitation actions have been completed in accordance with the provisions set forth in Section 24-44(2)(k)(ii). The Director, or the Director's designee, shall approve, deny, or approve with conditions, restrictions or limitations any application for an operating permit.

Section 8. Section 24-44(2)(l)(ii) of the Code of Miami-Dade County, Florida, is hereby amended to read as follows:

(l) For sites which do not qualify for site closure in accordance with Section 24-44(2)(k), one (1) of the following, or a combination of the following, shall be submitted for approval by the Director, or the Director's designee, to achieve site closure pursuant to Section 24-44(2)(k): a monitoring only plan, a risk assessment report, or a remedial action plan.

(i) The monitoring only plan:

1. The monitoring only plan for natural attenuation shall include, but >>shall<< not be limited to, an evaluation of the contaminant plume history, site conditions and aquifer chemical characteristics to demonstrate that the applicable CTLs will be attained in accordance with >>the<< approval by the Director, or the Director's designee, and that monitoring only is the most cost-effective remedial approach. The monitoring period shall be a minimum of one (1) year, unless two (2) consecutive quarterly samplings have indicated that applicable CTLs have been met. The monitoring only plan shall also demonstrate that human health, public safety, and the environment will be protected. Upon completion of the approved monitoring, a proposal for a no further action, a no further action with conditions, an extension of the monitoring only plan, risk assessment, or a remedial action plan, in accordance with the requirements herein, shall be submitted to the department.

2. The monitoring only plan to verify that compliance with the approved remedial action as set forth in Section 24-44(2)(l)(iii) has been achieved shall be >>for<< a minimum of a one (1) year period and shall include four (4) quarterly sampling events. However, if contamination was only present in the unsaturated zone during the site assessment and remediation tasks, only one groundwater sampling event approved by the Director, or the Director's designee, shall be required. Upon completion of the approved monitoring, a proposal for a no further action, a no further action with conditions, an extension of the monitoring only plan, risk assessment, or a remedial action plan modification, in accordance with the requirements herein, shall be submitted to the department for approval.

(ii) The risk assessment shall include, but >>shall<< not be limited to, a human and environmental exposure assessment, toxicity assessment, cumulative risk characterization, and supporting documentation for the development of alternative CTLs. Alternative health-based CTLs shall be calculated using the risk equations set forth in the DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 [[~~,~~]] >>of the<< Code of Miami-Dade County, Florida" (dated [[~~October 20, 2000~~]] >>September, 2005<<), and site-specific exposure scenarios and input parameters. Upon approval of the risk assessment, a proposal for a no further action, no further action with conditions, monitoring only plan for natural attenuation or remedial action, in accordance with the requirements herein, shall be submitted to the department.

* * *

Section 9. If any section, subsection, sentence, clause or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected by such invalidity.

Section 10. It is the intention of the Board of County Commissioners, and it is hereby ordained that the provisions of Section 1, Section 3, Section 5, Section 6, Section 7, and Section 8 of this ordinance shall become and be made a part of the Code of Miami-Dade County, Florida. It is the intention of the Board of County Commissioners, and it is hereby ordained that the provisions of Section 2 and Section 4 of this ordinance shall not be made a part of the Code of Miami-Dade County, Florida. However, the attached DERM Technical Report: "Development of Clean-up Target Levels (CTLs) for Chapter 24 of the Code of Miami-Dade County, Florida" (dated September, 2005), shall not be codified.

Section 11. The sections of this ordinance may be renumbered or relettered to accomplish such intention, and the word ordinance may be changed to section, article, or other appropriate word.

Section 12. This ordinance shall become effective ten (10) days after the date

of enactment unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

PASSED AND ADOPTED:

Approved by County Attorney as to form and legal sufficiency:

Prepared by:

Peter S. Tell