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REGION 5
ECOLOGICAL DATA QUALITY LEVELS

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
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1.0 INTRODUCTION

During implementation of the model quality assurance project plan (QAPjP) for the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) process in Region 5, the U.S. Environmental Protection Agency (EPA) noted that the planning stages of the RFI required further refinement. At times during the planning process, project objectives, data requirements, and the intended use of data were inadequately or inconsistently developed.

In an effort to improve RFI planning, the Office of RCRA (OR) has instituted a policy whereby established human health data quality levels (DQL) are used as guidance to ensure that RFI data (1) are compatible with established quality assurance/quality control (QA/QC) protocol, (2) are of sufficient quality and sensitivity that they may be used in human health risk assessments, and (3) can support a corrective measures study (CMS).

Currently, EPA corrective action project managers must consult an OR ecologist to establish site-specific ecological data quality levels (EDQL). Region 5- and medium-specific EDQLs are needed to provide a level or levels of contamination above which sufficient concern exists to warrant further investigation at a RCRA facility.

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05036 under the RCRA Enforcement and Permitting Assistance (REPA) Contract No. 68-W4-0007, to develop Region 5- and medium-specific EDQLs for all RCRA Appendix IX hazardous constituents and other significant contaminants of ecological concern.

2.0 PURPOSE AND OBJECTIVES OF EDQL DEVELOPMENT

EDQLs are not intended to serve as reference levels that will trigger specific actions if they are exceeded. Rather, EDQLs are primarily intended, along with the companion human DQLs that were published on June 28, 1994 and updated on December 14, 1995 (EPA 1994a and 1995), to help focus and prioritize project objectives and data requirements during the planning and implementing of site-specific RFIs.

Specifically, EDQLs along with human health DQLs, will help EPA to meet its mandate of "protecting human health and the environment." EDQLs can be compared with site-specific information to help focus

site investigations and corrective actions by identifying contaminants and particular areas of sites that may pose potential risks to ecological receptors. Further, when a constituent is identified as posing a potential ecological risk in a particular medium, EDQLs can be used to identify analytical methods with detection limits low enough to detect chemicals at their EDQLs. These uses of EDQLs are consistent with EPA Region 5's published guidance document titled, "Ecological Risk Assessment Guidance [ERAG] for RCRA Corrective Action" (EPA 1994b). The ERAG indicates that the ecological risk assessment process includes three tiers that each require successively more detailed and quantitative information. Tier 1 is referred to as the screening ecological risk assessment (SERA). Region 5-specific EDQLs may be used to complete this screening process. EDQLs are also expected to facilitate and expedite strategic targeting of ecological corrective action efforts by providing a tool to identify facilities posing an actual or potential threat to the environment.

3.0 EDQL TECHNICAL APPROACH

Under the best-case scenario, EDQLs should be developed based on peer-reviewed toxicity data and information contained within the available general literature, including on-line and stand-alone computer databases. However, limited resources prohibited such a comprehensive information search. As a result, EDQLs were developed using a phased approach. Section 3.1 discuses the technical approach used to develop the EDQLs under Phase 1. Section 3.2 discusses the project-specific computer database used to calculate and document the EDQLs.

3.1 PHASE 1 TECHNICAL APPROACH

On November 24, 1994, PRC submitted a draft Phase 1 technical approach for the development of EDQLs. This document was revised as a result of both EPA comments and practical experience in implementing the technical approach. On May 12, 1995, PRC submitted the final Phase 1 technical approach for developing Region-5 and medium-specific EDQLs (PRC 1995). Phase 1 relies on available criteria, standards, and guidelines (criteria) and easily accessible toxicological information. The development of EDQLs under Phase 1 follows the three primary steps listed below.

- Identify and collect available medium-specific federal, state, and in some cases international criteria protective of ecological receptors
- Develop receptor-specific EDQLs based on available toxicological data extrapolated for selected ecological receptors

- Select the lowest available medium-specific criterion, if available, as the medium-specific EDQL. If medium-specific criteria are not available, select the lowest receptor-specific EDQL as the medium-specific EDQL.

Rather than further summarizing the technical approach used to develop Phase 1 EDQLs, the reader is directed to the final technical approach (PRC 1995). Appendix A of this draft final report presents medium-specific EDQLs and medium-specific method reporting limits (MRL) for each of the RCRA Appendix IX constituents. The MRLs represent the lowest medium- and chemical-specific MRLs published along with the human DQLs (EPA 1995). Appendix B presents medium-specific criteria for each of the Appendix IX constituents.

3.2 PROJECT-SPECIFIC COMPUTER DATABASE

A project-specific computer database (database) was developed primarily to summarize and document the scientific data used to develop each of the medium- and chemical-specific EDQLs. The database also catalogues the available medium-specific criteria; calculates the receptor-specific EDQLs; and selects and presents the final EDQLs. The format and structure of the database was discussed extensively with EPA to ensure that the database would be compatible with EPA's computer systems and would be accessible and useful to EPA personnel. The Phase 1 database is a windows-based application with ".dbf" formatted data files.

Within the database, the documentation for medium- and chemical-specific EDQLs is accessed through a series of pull-down menus. The documentation for each of the EDQLs shows the final EDQL and available criteria on the first screen. Subsequent screens present documentation for the development of receptor-specific EDQLs. Supporting documentation including summaries of toxicological studies, references, and footnotes can be accessed through an extensive series of "pop-up" windows. A variety of printing options allows the user to print individual screens or information from any of the "pop-up" windows, and to generate a series of reports that summarize for example, final EDQLs and available criteria.

In order to ensure the integrity and consistency of the database among multiple users, changes to the database cannot be made on-screen while accessing the database. However, changes to the database can be made as necessary to update criteria; to select alternate toxicity reference values (TRV); and to modify the

algorithms used to calculate the receptor-specific EDQLs. However, these changes must be made directly within the source code by personnel trained in dbase.

Appendix C contains a database users guide that explains how to load and use the database (Appendix C-1) and a data dictionary that documents the structure of the database (Appendix C-2).

4.0 UNCERTAINTIES

Numerous uncertainties are inherent in the Phase 1 technical approach used to develop the chemical- and medium-specific EDQLs. The major sources of uncertainty include the limited search for toxicological, chemical property, and methodological information and the limited review of the collected information. Additional sources of uncertainty include the use of simplified food chain models and target ecological receptors, and the equal weighting of criteria, standards, and guidelines developed for similar but not identical purposes by using different methodologies and information. The impact of specific uncertainties may be to increase or decrease the chemical- and medium-specific EDQLs that were developed using the Phase 1 technical approach. The nature and extent of the uncertainty introduced by each of the sources described above is briefly discussed below.

Limited resources necessitated an abbreviated search for information on toxicity, methodologies, and chemical properties. As described in the final technical approach (PRC 1995), chemical-specific toxicological and property information was obtained from a variety of computer databases and technical summary documents. The primary information sources included the following:

- AQUIRE Database
- PHYTOTOX Database
- Integrated Risk Information System (IRIS)
- Hazardous Substances Databank
- U.S. Fish and Wildlife Service Contaminant Hazard Reviews
- Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles
- Registry of Toxic Effects of Chemical Substances (RTECS)
- *Dangerous Properties of Industrial Materials* (Sax and Lewis 1989)

In some cases information was obtained from other sources. However, typically this information was identified as a result of the project team's past experiences. A search of the general literature and the EPA TERRE-TOX Database were not performed as part of Phase 1 of the EDQL development. The TERRE-

TOX Database was not accessible during the Phase 1 data review period. The limited information search introduced a variety of uncertainties.

The primary information sources do not contain all available and relevant toxicological information. As a result, applicable, and in many cases more appropriate toxicological information was not identified or used in the EDQL development. For example, the majority of the toxicological information contained in the primary sources was collected from testing typical laboratory animals such as rats and mice, rather than ecological receptors such as minks and kingfishers. The Phase 1 technical approach employed uncertainty factors to account for the potential differences between laboratory animals and ecological receptors. However, these uncertainty factors cannot replace actual test results.

Furthermore, the toxicological information presented in the primary sources was typically in the form of abstracts or summaries. As a result, important details of the studies such as dosing schedules, rates, and concentrations, study durations, body weights, form of the chemical tested, and toxicological effects observed were missing or were difficult to interpret. In addition, data collected using dissimilar testing and analytical methods was given equal weight. In other cases, the information abstracted or summarized appeared to be contradictory. In only a handful of instances were original study results reviewed.

Without evidence to the contrary, several standard assumptions were made in interpreting the collected toxicological information. For example, if doses were described as being in units of milligrams per kilogram (mg/kg) it was typically assumed that this meant milligrams of the chemical tested per kilogram of body weight of the tested animal, unless the information was presented in terms of diet concentration, for example as parts per million (ppm), mg/kg diet or mg/liter diet. Also, because the toxicological information needed to be presented in the form of mg/kg per day (mg/kg/day) or similarly as micrograms/kg/day (μg/kg/day), the dose often had to be converted. Section 2.2.2 of the final technical approach (PRC 1995) describes the conversion methods used. The conversion of doses expressed in ppm or mg/kg diet involved the assumption of standard body weights and ingestion rates for typical laboratory test animals or ecological receptors; however, these may differ somewhat from the actual body weights and ingestion rates of the animals tested.

Also, the description of the toxicological effects observed in a study were often lacking in detail. For example, "reproductive effects" were conservatively assumed to always be ecologically significant health effects because reduced reproductive ability could adversely affect the viability of ecological populations.

However, the actual reproductive effects observed during a study could include a variety of more specific effects such as elevated protein or hormone levels, reduced litter sizes, premature births, maternal toxicity, and deformed fetuses. Therefore, a study may be selected as the basis for a TRV because "reproductive effects" were observed when in fact, the effect observed was only a slight increase in the concentration of a single protein; an effect that may not be of ecological significance.

In some cases, abstracts or summaries of study results contained information gaps that could not be filled based on professional judgement or standard assumptions. When this happened, the study was excluded from the pool of studies used to identify TRVs.

In order to ensure EDQLs are developed considering upper-end receptors, simplified food chain models were used to calculate receptor-specific EDQLs based on targeted ecological receptors at the top of their respective food chains. This process introduced several uncertainties. First, the targeted ecological receptors may not be present at a particular site for which an RFI is planned. Second, the food chain models used in the Phase 1 technical approach were three-step models. That is, the constituent concentration was modeled from the selected medium (for example, surface water), through an intermediate receptor (for example, a fish), to a upper-end receptor (for example, a mink) using a series of bioconcentration factors and estimated ingestion rates and body weights. A more complicated food chain model involving a greater number of intermediate receptors and alternate bioconcentration factors may more realistically represent the movement of a constituent up an ecosystem foodchain. In order to be conservative, the upper-end ecological receptors that were chosen ingest the selected intermediate receptor as large portion of their daily diet.

Finally, in another attempt to be conservative (that is, to develop lower rather than higher EDQLs), the collected medium- and chemical-specific criteria, standards, and guidelines were given equal weight. That is, the lowest medium-specific criterion, standard, or guideline for a given chemical was compared to the lowest receptor-specific EDQL to select the final EDQL even though the basis for and the methodology used to develop each criterion, standard, or guideline might be different.

In general, the proposed methodology focuses on the most sensitive species and uses conservative uncertainty factors in interspecies extrapolations, thereby resulting in conservative (that is, low) EDQLs. In fact, some of the EDQLs developed using the Phase 1 technical approach are below medium-specific MRLs. Therefore, in terms of identifying chemicals or media that may pose a potential risk to ecological

receptors and that should be addressed carefully in a QAPjP, the proposed methodology will result in a potentially large number of false positives, but very few false negatives.

5.0 SUMMARY

Medium-specific EDQLs were developed for the majority of the RCRA Appendix IX constituents using the phase 1 technical approach. However, medium-specific EDQLs were not developed for some constituents primarily because of a lack of chemical-specific toxicity information and the lack of an appropriate methodology. In addition, while easy to implement, the phase 1 technical approach results in conservative EDQLs. As stated in Section 4.0, many of the EDQLs are below medium-specific MRLs. Section 5.1 summarizes the medium-specific EDQLs that were developed and the medium-specific EDQLs that could not be developed using the phase 1 technical approach. Section 5.2 discusses potential actions under future phases of EDQL development to reduce the level of uncertainties associated with EDQL developed using the phase 1 technical approach.

5.1 EDQL SUMMARY

Appendix A presents the medium-specific EDQLs developed using the phase 1 technical approach and MRLs for each of the RCRA Appendix IX constituents. Of a potential total of 726 medium-specific EDQLs (222 each for soil, surface water, and sediment and 60 for air [EDQLs were developed for air only for volatile organic compounds]), about 671 EDQLs (92%) were developed. The breakdown of phase 1 EDQLs is presented in the table below.

Number of EDQLs Developed for each Medium Under Phase 1			
Soil	**Surface Water**	**Sediment**	**Air**
218/222 (98%)	179/222 (81%)	214/222 (96%)	60/60 (100%)

The primary reasons that EDQLs were not developed for some chemicals varies by medium and are summarized below.

Soil - EDQLs were not developed for four chemicals because of a lack of available toxicity data. These chemicals are 4-bromophenyl phenyl ether; 4-chlorophenyl phenyl ether; dibenzofuran; and ethyl methane sulfonate.

Surface Water	-	EDQLs were not developed for some chemicals because of a lack of available toxicity data to develop interim water quality criteria (IWQC) and the decision not to evaluate potential food chain effects for chemicals with bioconcentration factors (BCF) less than 50.
Sediment	-	EDQLs were not developed for some chemicals because of a lack of medium-specific criteria (both sediment and surface water - used to develop sediment EDQLs using the equilibrium partitioning approach [EQP]), a lack of available toxicity data to develop surface water IWQC (also used to develop sediment EDQLs using the EQP approach), and the decision not to evaluate potential food chain effects for chemicals with BCFs less than 50.
Air	-	Under phase 1, EDQLs were developed only for 60 of the Appendix IX constituents; these constituents were considered to be volatile organic compounds (VOC).

5.2 FUTURE PHASES OF EDQL DEVELOPMENT

Future phases of EDQL development should focus on reducing the uncertainties inherent in the Phase 1 EDQLs and on decreasing unwarranted conservativeness. The foremost of these uncertainties can be significantly reduced by expanding the search for relevant toxicological information and collecting and reviewing the original results for the most relevant studies. In a related matter, medium-specific EDQLs should be developed for chemicals with limited toxicological data by using the toxicological data for appropriate surrogate chemicals. In addition, more refined food chain models should be identified and evaluated for use in developing EDQLs. Also, medium-specific criteria, standards, and guidelines should be critically reviewed to evaluate the comparability of the criteria, standards, and guidelines and to identify the most appropriate criterion, standard, or guideline for the purpose of developing Region 5-specific EDQLs.

Expanding the search for information will require compiling and reviewing original toxicological data to ensure that only relevant data are used to develop EDQLs. In order to obtain the most essential and relevant toxicological data, a general literature search may need to be conducted. This search will focus on journals specializing in environmental toxicology issues, such as:

- *Aquatic Toxicology*
- *Archives of Environmental Contamination and Toxicology*
- *Bulletin of Archives of Environmental Toxicology*
- *Canadian Journal of Fisheries and Aquatic Science*

- *Environmental Contamination and Toxicology*
- *Environmental Science and Technology*
- *Environmental Toxicology and Chemistry*
- *Hydrobiologia*
- *Journal of Aquatic Ecosystem Health*
- *Journal of Environmental Quality*
- *Journal of Great Lakes Research*
- *Journal of Water Pollution Control Federation*
- *Toxicity Assessment*
- *Water Air Soil Pollution*
- *Water Research*

The second set of database sources listed in Section 2.2.2 of the final technical approach (PRC 1995) will also be reviewed.

In addition, active research centers including various governmental laboratories (such as EPA's Environmental Research Laboratories in Duluth, Minnesota, and the National Oceanic and Atmospheric Administration [NOAA] Great Lakes Environmental Research Laboratory in Ann Arbor, Michigan); university departments in the Great Lakes area researching ecotoxicology (such as the Marine Studies Center at the University of Wisconsin and the Institute for Environmental Toxicology at Michigan State University); and various international sources including the Great Lakes Water Quality Board of the International Joint Commission; the Canadian Ministry of the Environment; and the National Water Research Institute at the Canada Centre for Inland Waters, Burlington, Ontario should be contacted. Evaluation of toxicity data will be facilitated once several computer databases including EPA's ECOTOX database (which includes TERRE-TOX, AQUIRE, and PHYTOTOX) are completed and accessible .

The identification of chemical surrogates should be researched further in general literature. For example, the use of structure activity relationships to identify appropriate chemical surrogates should be closely evaluated. Also, refining food chain models will require research into existing models and chemical- and medium-specific parameters, such as bioaccumulation factors that can be used to quantify the movement and accumulation of chemicals within food chains. Models such as the Pesticide and Industrial Chemical Risk Analysis and Hazard Assessment Program (PIRANHA) may be useful to refine the EDQLs in terms of identifying chemical surrogates and refining food chain models.

Further, the basis for and the methodology used to develop medium-specific criteria, standards, or guidelines should be reviewed. In particular, ecological receptors that were targeted should be identified, the set of toxicological results and the methodology including the uncertainty factors used to develop the criteria, standards or guidelines should be critically reviewed. The purpose of the review should be to determine the comparability of the available criteria, standards, and guidelines; to determine if the criteria, standards, or guidelines are based on similar objectives, such as causing "no or limited effects on ecological receptors;" or if some criteria, standards, and guidelines should be given greater weight.

Finally, the database should be updated to incorporate any changes in the technical approach, as well as any additional features such as on-screen addition, deletion, or editing of database records that EPA personnel identify as necessary.

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U.S. Environmental Protection Agency (EPA). 1994a. Memorandum Regarding RCRA Corrective Action Guidance. Human Health Data Quality Levels (DQL) for RCRA Field Investigation (RFI) Projects. From Karl E. Bremer, Chief, RCRA Permitting Branch. To RCRA Permitting Section Chiefs. Human Health DQLs Attached. June 28.

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APPENDIX A

ECOLOGICAL DATA QUALITY LEVELS AND METHOD REPORTING LIMITS BY MEDIUM

(23 Pages)

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Acenaphthene 83-32-9	- - mg/m3	9.90E-03 ug/L	10	6.71 ug/kg	660	1.00E+04 ug/kg	660
Acenaphthylene 208-96-8	- - mg/m3	242 ug/L	10	5.87 ug/kg	660	1.00E+04 ug/kg	660
Acetone 67-64-1	27 mg/m3	1.22E+05 ug/L	100	709 ug/kg	100	1.00E+07 ug/kg	100
Acetonitrile 75-05-8	8.55E-01 mg/m3	3.00E+04 ug/L	10	174 ug/kg	100	1.00E+07 ug/kg	100
Acetophenone 98-86-2	- - mg/m3	687.89 ug/L	10	246 ug/kg	- -	1.00E+05 ug/kg	- -
Acetylaminofluorene[2-] 53-96-3	- - mg/m3	15 ug/L	20	15 ug/kg	- -	2 ug/kg	- -
Acrolein 107-02-8	1.61E-02 mg/m3	22.5 ug/L	11	1.44E-02 ug/kg	7	1.00E+04 ug/kg	7
Acrylonitrile 107-13-1	2.21E-02 mg/m3	73 ug/L	5	1 ug/kg	5	100 ug/kg	5
Aldrin 309-00-2	- - mg/m3	7.72E-04 ug/L	0.34	2 ug/kg	22.8	40 ug/kg	22.8
Allyl chloride 107-05-1	1.80E-02 mg/m3	2.30E+05 ug/L	100	6.13E+04 ug/kg	5	100 ug/kg	5

EDQL, MRL VALUES FOR ALL MEDIA

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Aminobiphenyl[4-] 92-67-1	- - mg/m3	- - ug/L	20	6 ug/kg	- -	1.66E-02 ug/kg	- -
Aniline 62-53-3	- - mg/m3	4.40E-01 ug/L	10	3.38E-02 ug/kg	- -	1.00E+05 ug/kg	- -
Anthracene 120-12-7	- - mg/m3	2.90E-02 ug/L	10	46.9 ug/kg	660	100 ug/kg	660
Antimony (Total) 7440-36-0	- - mg/m3	3.00E-02 mg/L	30	- - mg/kg	300	4.5 mg/kg	300
Aramite 140-57-8	- - mg/m3	6.70E-01 ug/L	10	1.11E-03 ug/kg	- -	1.06E+03 ug/kg	- -
Arsenic (Total) 7440-38-2	- - mg/m3	5.30E-02 mg/L	10	5.9 mg/kg	100	4.00E-01 mg/kg	100
Azobenzene[p-(dimethylamino)] 60-11-7	- - mg/m3	4.58E-02 ug/L	10	318 ug/kg	- -	1.13E-01 ug/kg	- -
Barium (Total) 7440-39-3	- - mg/m3	- - mg/L	20	- - mg/kg	200	100 mg/kg	200
Benzene 71-43-2	4.88E-01 mg/m3	114 ug/L	0.09	142 ug/kg	0.09	10 ug/kg	0.09
Benzo[a]anthracene 56-55-3	- - mg/m3	2.33E-02 ug/L	0.13	31.7 ug/kg	8.7	100 ug/kg	8.7

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Benzo[a]pyrene 50-32-8	- - mg/m3	7.80E-02 ug/L	0.23	31.9 ug/kg	15.4	20 ug/kg	15.4
Benzo[b]fluoranthene 205-99-2	- - mg/m3	2.52E-01 ug/L	0.18	1.04E+04 ug/kg	12.1	100 ug/kg	12.1
Benzo[ghi]perylene 191-24-2	- - mg/m3	2.12E-01 ug/L	0.76	170 ug/kg	51	1000 ug/kg	51
Benzo[k]fluoranthene 207-08-9	- - mg/m3	5.60E-03 ug/L	0.17	240 ug/kg	11.4	100 ug/kg	11.4
Benzyl alcohol 100-51-6	- - mg/m3	281.24 ug/L	20	34 ug/kg	1300	1.00E+06 ug/kg	1300
Beryllium (Total) 7440-41-7	- - mg/m3	5.30E-03 mg/L	2	- - mg/kg	20	1.00E-01 mg/kg	20
BHC[alpha-] 319-84-6	- - mg/m3	3.44E-01 ug/L	0.35	6 ug/kg	23.4	100 ug/kg	23.4
BHC[beta-] 319-85-7	- - mg/m3	3.44E-01 ug/L	0.23	5 ug/kg	15.4	100 ug/kg	15.4
BHC[delta-] 319-86-8	- - mg/m3	34 ug/L	0.24	7.15E+04 ug/kg	16.1	100 ug/kg	16.1
BHC[gamma-] 58-89-9	- - mg/m3	1.00E-02 ug/L	0.25	0.94 mg/kg	16.8	8.00E-01 ug/kg	16.8

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Bromodichloromethane 75-27-4	- - mg/m3	6.40E+03 ug/L	0.2	7.26E+03 ug/kg	5	100 ug/kg	5
Bromoform 75-25-2	2.53E-01 mg/m3	466 ug/L	2	996 ug/kg	5	8.00E+04 ug/kg	5
Bromophenyl phenyl ether[4-] 101-55-3	- - mg/m3	1.63 ug/L	10	1.68E+03 ug/kg	660	- - ug/kg	660
Butylamine[N-Nitrosodi-n-] 924-16-3	- - mg/m3	1000 ug/L	10	772 ug/kg	- -	4 ug/kg	- -
Butylbenzyl phthalate 85-68-7	- - mg/m3	3 ug/L	0.42	257 ug/kg	660	1.00E+07 ug/kg	660
Cadmium (Total) 7440-43-9	- - mg/m3	2.16E-05 mg/L	1	0.596 mg/kg	10	8.00E-02 mg/kg	10
Carbon disulfide 75-15-0	1.02E-01 mg/m3	84.1 ug/L	1	134 ug/kg	5	4.20E-01 ug/kg	5
Carbon tetrachloride 56-23-5	3.21E-02 mg/m3	5.9 ug/L	1	36 ug/kg	5	100 ug/kg	5
Chlordane 57-74-9	- - mg/m3	5.58E-05 ug/L	0.37	4.5 ug/kg	24.8	100 ug/kg	24.8
Chlorethyl ether[bis(2-] 111-44-4	- - mg/m3	1.14E+03 ug/L	10	212 ug/kg	660	100 ug/kg	660

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Chloro-1-methylethyl)ether[Bis(2-] 108-60-1	-- mg/m3	20 ug/L	10	69 ug/kg	660	100 ug/kg	660
Chloroaniline[p-] 106-47-8	-- mg/m3	231.97 ug/L	20	146 ug/kg	1300	9 ug/kg	1300
Chlorobenzene 108-90-7	2 mg/m3	10 ug/L	0.03	62 ug/kg	0.3	50 ug/kg	0.3
Chlorobenzilate 510-15-6	-- mg/m3	7 ug/L	10	860 ug/kg	--	100 ug/kg	--
Chloroethane 75-00-3	1.00E+00 mg/m3	2.30E+05 ug/L	1	5.86E+04 ug/kg	5.2	100 ug/kg	5.2
Chloroform 67-66-3	3.73E-02 mg/m3	79 ug/L	0.2	27 ug/kg	0.2	100 ug/kg	0.2
Chloronaphthalene[2-] 91-58-7	-- mg/m3	1.74E-03 ug/L	10	7.24E-01 ug/kg	630	1.65E-04 ug/kg	630
Chlorophenol[2-] 95-57-8	-- mg/m3	5.44E-01 ug/L	5	12 ug/kg	660	10 ug/kg	660
Chlorophenyl phenyl ether[4-] 7005-72-3	-- mg/m3	-- ug/L	10	656 ug/kg	660	-- ug/kg	660
Chloroprene 126-99-8	6.50E-04 mg/m3	-- ug/L	5	1 ug/kg	5	100 ug/kg	5

EDQL, MRL VALUES FOR ALL MEDIA

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Chromium (Total) 7440-47-3	-- mg/m3	1.10E-02 mg/L	10	26 mg/kg	100	5.00E-02 mg/kg	100
Chrysene 218-01-9	-- mg/m3	2.74E-02 ug/L	1.5	57.1 ug/kg	100	100 ug/kg	100
Cobalt (Total) 7440-48-4	-- mg/m3	5.00E-03 mg/L	10	50 mg/kg	100	10 mg/kg	100
Copper (Total) 7440-50-8	-- mg/m3	2.14E-03 mg/L	60	16 mg/kg	600	2 mg/kg	600
Cresol[4,6-dinitro-o-] 534-52-1	-- mg/m3	2.3 ug/L	50	10 ug/kg	--	1000 ug/kg	--
Cresol[m-] 108-39-4	-- mg/m3	-- ug/L	10	8.45E-01 ug/kg	--	1000 ug/kg	--
Cresol[o-] 95-48-7	-- mg/m3	-- ug/L	10	8.26E-01 ug/kg	660	1000 ug/kg	660
Cresol[p-chloro-m-] 59-50-7	-- mg/m3	2 ug/L	5	11 ug/kg	240	60 ug/kg	240
Cresol[p-] 106-44-5	-- mg/m3	-- ug/L	10	8.08E-01 ug/kg	660	1000 ug/kg	660
Cyanide 57-12-5	-- mg/m3	4.96E-03 mg/L	40	0.1 mg/kg	--	5 mg/kg	--

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
DDD[4,4'-] 72-54-8	- - mg/m3	4.54E-03 ug/L	0.5	5.03E+03 ug/kg	33.5	100 ug/kg	33.5
DDE[4,4'-] 72-55-9	- - mg/m3	1.13E-10 ug/L	0.65	1.42 ug/kg	38.9	100 ug/kg	38.9
DDT[4,4'-] 50-29-3	- - mg/m3	7.94E-05 ug/L	0.8	1.19 ug/kg	54.3	100 ug/kg	54.3
Di-n-butyl phthalate 84-74-2	- - mg/m3	3 ug/L	3.3	110.5 ug/kg	221	60 ug/kg	221
Di-n-octyl phthalate 117-84-0	- - mg/m3	30 ug/L	0.5	4.06E+04 ug/kg	32.8	3.67E+03 ug/kg	32.8
Diallate 2303-16-4	- - mg/m3	2.74E-02 ug/L	10	2 ug/kg	- -	100 ug/kg	- -
Dibenzofuran 132-64-9	- - mg/m3	13.58 ug/L	10	1.52E+03 ug/kg	660	- - ug/kg	660
Dibenz[a,h]anthracene 53-70-3	- - mg/m3	1.60E-03 ug/L	0.3	6.22 ug/kg	20.1	100 ug/kg	20.1
Dibromo-3-chloropropane[1,2-] 96-12-8	4.70E-03 mg/m3	11.2 ug/L	1	20 ug/kg	5	100 ug/kg	500
Dibromochloromethane 124-48-1	- - mg/m3	6.40E+03 ug/L	0.3	268 ug/kg	0.3	100 ug/kg	0.3

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Dibromoethane[1,2-] 106-93-4	5 mg/m3	22.5 ug/L	1	12 ug/kg	5	2 ug/kg	5
Dichloro-2-butene[trans-1,4-] 110-57-6	1.12E-01 mg/m3	- - ug/L	1	2 ug/kg	5	100 ug/kg	5
Dichlorobenzene[m-] 541-73-1	8 mg/m3	87 ug/L	0.2	3.01E+03 ug/kg	0.2	50 ug/kg	0.2
Dichlorobenzene[o-] 95-50-1	8 mg/m3	11 ug/L	0.5	231 ug/kg	0.5	50 ug/kg	0.5
Dichlorobenzene[p-] 106-46-7	8 mg/m3	43 ug/L	0.07	1.45E+03 ug/kg	0.07	50 ug/kg	0.07
Dichlorobenzidine[3,3'-] 91-94-1	- - mg/m3	3 ug/L	20	28 ug/kg	1300	1000 ug/kg	1300
Dichlorodifluoromethane 75-71-8	41 mg/m3	- - ug/L	1	1 ug/kg	5	100 ug/kg	5
Dichloroethane[1,1-] 75-34-3	41 mg/m3	- - ug/L	1	5.75E-01 ug/kg	5	100 ug/kg	5
Dichloroethane[1,2-] 107-06-2	8.25E-01 mg/m3	190 ug/L	1	54 ug/kg	5	100 ug/kg	5
Dichloroethene[1,1-] 75-35-4	1.52E-02 mg/m3	78 ug/L	- -	23 ug/kg	- -	10 ug/kg	- -

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Dichloroethylene[trans-1,2-] 15[illegible]60-5	8.08E-01 mg/m3	310 ug/L	1	209 ug/kg	5	100 ug/kg	5
Dichlorophenol[2,4-] 120-83-2	-- mg/m3	18 ug/L	5	134 ug/kg	260	10 ug/kg	260
Dichlorophenol[2,6-] 87-65-0	-- mg/m3	-- ug/L	10	4 ug/kg	--	10 ug/kg	--
Dichloropropane[1,2-] 78-87-5	4 mg/m3	380 ug/L	0.06	352 ug/kg	5	100 ug/kg	5
Dichloropropene[cis-1,3-] 10061-01-5	1.64E-01 mg/m3	7.9 ug/L	1	3 ug/kg	5	--	--
Dichloropropene[trans-1,3-] 10061-02-6	1.64E-01 mg/m3	7.9 ug/L	1	3 ug/kg	5	100 ug/kg	5
Dieldrin 60-57-1	-- mg/m3	2.60E-05 ug/L	0.44	2 ug/kg	29.5	40 ug/kg	29.5
Diethyl O-2-pyrazinyl phosphorothioate[O,O-] 297-97-2	-- mg/m3	-- ug/L	20	4.88E-02 ug/kg	--	1.48E-01 ug/kg	--
Diethyl phthalate 84-66-2	-- mg/m3	3 ug/L	2.5	8 ug/kg	168	60 ug/kg	168
Dimethoate 60-51-5	-- mg/m3	41.2 ug/L	2.6	190 ug/kg	130	300 ug/kg	130

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Dimethyl phthalate 131-11-3	- - mg/m3	73 ug/L	6.4	25 ug/kg	429	60 ug/kg	429
Dimethylbenzidine[3,3'-] 119-93-7	- - mg/m3	- - ug/L	10	2 ug/kg	- -	9.09E-01 ug/kg	- -
Dimethylbenz[a]anthracene[7,12-] 57-97-6	- - mg/m3	1.52E-02 ug/L	10	6.64E+04 ug/kg	- -	1000 ug/kg	- -
Dimethylphenethylamine[alpha,alpha-] 122-09-8	- - mg/m3	- - ug/L	10	9 ug/kg	- -	1.00E+05 ug/kg	- -
Dimethylphenol[2,4-] 105-67-9	- - mg/m3	5 ug/L	5	305 ug/kg	660	20 ug/kg	660
Dinitrobenzene[m-] 99-65-0	- - mg/m3	2.36 ug/L	0.11	9.24E-01 ug/kg	0.25	5 ug/kg	0.25
Dinitrophenol[2,4-] 51-28-5	- - mg/m3	4.07 ug/L	50	1 ug/kg	3300	20 ug/kg	3300
Dinitrotoluene[2,4-] 121-14-2	- - mg/m3	230 ug/L	0.02	75 ug/kg	0.25	1.00E+05 ug/kg	0.25
Dinitrotoluene[2,6-] 606-20-2	- - mg/m3	42 ug/L	0.1	21 ug/kg	0.26	1000 ug/kg	0.26
Dinoseb 88-85-7	- - mg/m3	13.5 ug/L	1	12 ug/kg	47	1.13E-01 ug/kg	47

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Dioxane[1,4-] 123-91-1	10 mg/m3	- - ug/L	12	5.43E-03 ug/kg	- -	1.00E+06 ug/kg	- -
Diphenylamine 122-39-4	- - mg/m3	11 ug/L	10	35 ug/kg	- -	3.28E-01 ug/kg	- -
Disulfoton 298-04-4	- - mg/m3	3.62 ug/L	0.7	324 ug/kg	35	5.65E-02 ug/kg	35
D[2,4-] 94-75-7	- - mg/m3	- - ug/L	0.2	6 ug/kg	1.2	100 ug/kg	1.2
Endosulfan I 959-98-8	- - mg/m3	3.00E-03 ug/L	0.3	1.75E-01 ug/kg	20.1	100 ug/kg	20.1
Endosulfan II 33213-65-9	- - mg/m3	3.00E-03 ug/L	0.4	1.04E-01 ug/kg	26.8	100 ug/kg	26.8
Endosulfan sulfate 1031-07-8	- - mg/m3	6.18E-02 ug/L	0.35	35 ug/kg	23.4	100 ug/kg	23.4
Endrin 72-20-8	- - mg/m3	8.00E-05 ug/L	0.39	2.67 ug/kg	26.1	100 ug/kg	26.1
Endrin aldehyde 7421-93-4	- - mg/m3	3.94E-03 ug/L	0.5	3.20E+03 ug/kg	33.5	100 ug/kg	33.5
Ethyl methacrylate 97-63-2	10 mg/m3	- - ug/L	5	6.02E-01 ug/kg	5	134 ug/kg	5

EDQL, MRL VALUES FOR ALL MEDIA

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Ethyl methane sulfonate 62-50-0	- - mg/m3	- - ug/L	20	1.61E-02 ug/kg	- -	- - ug/kg	- -
Ethylbenzene 100-41-4	8 mg/m3	17.2 ug/L	0.05	0.1 ug/kg	0.05	50 ug/kg	0.05
Famphur 52-85-7	- - mg/m3	- - ug/L	20	2 ug/kg	- -	3.89E-01 ug/kg	- -
Fluoranthene 206-44-0	- - mg/m3	6 ug/L	2.1	111.3 ug/kg	660	100 ug/kg	660
Fluorene 86-73-7	- - mg/m3	8 ug/L	2.1	21.2 ug/kg	660	1.00E+04 ug/kg	660
Heptachlor 76-44-8	- - mg/m3	2.65E-04 ug/L	0.4	0.6 ug/kg	26.8	50 ug/kg	26.8
Heptachlor epoxide 1024-57-3	- - mg/m3	4.80E-04 ug/L	0.32	0.6 ug/kg	21.4	70 ug/kg	21.4
Hexachlorobenzene 118-74-1	- - mg/m3	2.28E-07 ug/L	0.056	20 ug/kg	3.8	50 ug/kg	3.8
Hexachlorobutadiene 87-68-3	- - mg/m3	5.59E-03 ug/L	0.014	1.38E+03 ug/kg	0.9	100 ug/kg	0.9
Hexachlorocyclopentadiene 77-47-4	- - mg/m3	2 ug/L	2.4	4.68E+03 ug/kg	161	100 ug/kg	161

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Hexachloroethane 67-72-1	- - mg/m3	3.05 ug/L	0.016	223 ug/kg	1.1	3.00E+05 ug/kg	1.1
Hexachlorophene 70-30-4	- - mg/m3	3.05 ug/L	50	2.31E+05 ug/kg	- -	100 ug/kg	- -
Hexachloropropene 1888-71-7	- - mg/m3	20 ug/L	50	2.00E-01 ug/kg	- -	100 ug/kg	- -
Hexanone[2-] 591-78-6	3 mg/m3	1.71E+03 ug/L	50	1.01E+03 ug/kg	50	102 ug/kg	50
Indeno(1,2,3-cd)pyrene 193-39-5	- - mg/m3	1.20E-01 ug/L	0.43	200 ug/kg	29	100 ug/kg	29
Isobutyl alcohol 78-83-1	2 mg/m3	3.48E+04 ug/L	50	3.35E+03 ug/kg	7	1.00E+06 ug/kg	7
Isodrin 465-73-6	- - mg/m3	3.86E-01 ug/L	20	55 ug/kg	- -	100 ug/kg	- -
Isophorone 78-59-1	- - mg/m3	900 ug/L	10	422 ug/kg	3800	1.12E+03 ug/kg	3800
Isosafrole 120-58-1	- - mg/m3	- - ug/L	10	4 ug/kg	- -	38 ug/kg	- -
Kepone 143-50-0	- - mg/m3	6.70E-01 ug/L	20	3 ug/kg	- -	100 ug/kg	- -

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Lead (Total) 7439-92-1	-- mg/m3	1.30E-03 mg/L	10	31 mg/kg	100	10 mg/kg	100
Mercury (Total) 7439-97-6	-- mg/m3	9.74E-07 mg/L	2	0.174 mg/kg	100	2.00E-03 mg/kg	100
Methacrylonitrile 126-98-7	8.90E-02 mg/m3	-- ug/L	5	2.97E-02 ug/kg	100	2 ug/kg	100
Methane[bis(2-chloroethoxy)] 111-91-1	-- mg/m3	6.40E+03 ug/L	10	350 ug/kg	660	100 ug/kg	660
Methapyrilene 91-80-5	-- mg/m3	-- ug/L	100	1.44E-02 ug/kg	--	77 ug/kg	--
Methoxychlor 72-43-5	-- mg/m3	5.00E-03 ug/L	0.86	4 ug/kg	57.6	100 ug/kg	57.6
Methyl bromide 74-83-9	3.90E-01 mg/m3	6.40E+03 ug/L	10	947 ug/kg	10	4.00E+05 ug/kg	10
Methyl chloride 74-87-3	1.32E-01 mg/m3	1.38E+03 ug/L	1	108 ug/kg	0.8	100 ug/kg	0.8
Methyl ethyl ketone 78-93-3	18 mg/m3	2.60E+04 ug/L	10	502 ug/kg	100	1.00E+07 ug/kg	100
Methyl iodide 74-88-4	3.25E-01 mg/m3	-- ug/L	5	3.05E-01 ug/kg	5	10 ug/kg	5

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Methyl methacrylate 80-62-6	2 mg/m3	2.80E+03 ug/L	2	168 ug/kg	50	1.00E+06 ug/kg	50
Methyl methanesulfanate 66-27-3	- - mg/m3	- - ug/L	10	4.74E-03 ug/kg	- -	35 ug/kg	- -
Methyl parathion 298-00-0	- - mg/m3	- - ug/L	0.5	7.55E-01 ug/kg	20	2.35E-03 ug/kg	20
Methyl-2-pentanone[4-] 108-10-1	1 mg/m3	3.68E+03 ug/L	5	544 ug/kg	50	6.52E+03 ug/kg	50
Methylcholanthrene[3-] 56-49-5	- - mg/m3	4.45E-03 ug/L	10	8.19E+06 ug/kg	- -	1000 ug/kg	- -
Methylene bromide 74-95-3	5 mg/m3	- - ug/L	1	8.59E-02 ug/kg	5	508 ug/kg	5
Methylene chloride 75-09-2	133 mg/m3	45 ug/L	1	1260 ug/kg	5	100 ug/kg	5
Methylnaphthalene[2-] 91-57-6	- - mg/m3	9 ug/L	10	20.2 ug/kg	660	1000 ug/kg	660
Naphthalene 91-20-3	4 mg/m3	2 ug/L	10	34.6 ug/kg	660	5.00E+03 ug/kg	660
Naphthoquinone[1,4-] 130-15-4	- - mg/m3	4.40E-02 ug/L	10	2.11E-02 ug/kg	- -	13 ug/kg	- -

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Naphthylamine[1-] 134-32-7	- - mg/m3	6.70E-01 ug/L	10	1 ug/kg	- -	37 ug/kg	- -
Naphthylamine[2-] 91-59-8	- - mg/m3	- - ug/L	10	2 ug/kg	- -	12 ug/kg	- -
Nickel (Total) 7440-02-0	- - mg/m3	3.68E-02 mg/L	50	16 mg/kg	1500	4.00E-02 mg/kg	1500
Nitroaniline[m-] 99-09-2	- - mg/m3	- - ug/L	33	2.22E-01 ug/kg	2211	25 ug/kg	2211
Nitroaniline[o-] 88-74-4	- - mg/m3	- - ug/L	10	2.22E-01 ug/kg	670	294 ug/kg	670
Nitroaniline[p-] 100-01-6	- - mg/m3	- - ug/L	20	2.22E-01 ug/kg	7370	177 ug/kg	7370
Nitrobenzene 98-95-3	- - mg/m3	740 ug/L	6.4	488 ug/kg	0.26	1.00E+05 ug/kg	0.26
Nitrophenol[o-] 88-75-5	- - mg/m3	13.5 ug/L	5	8 ug/kg	300	20 ug/kg	300
Nitrophenol[p-] 100-02-7	- - mg/m3	35 ug/L	10	8 ug/kg	470	20 ug/kg	470
Nitroquinoline-1-oxide[4-] 56-57-5	- - mg/m3	- - ug/L	40	1 ug/kg	- -	1.00E+05 ug/kg	- -

EDQL, MRL VALUES FOR ALL MEDIA

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Nitrosodiethylamine[N-] 55-18-5	-- mg/m3	767.94 ug/L	20	23 ug/kg	--	2.63E-01 ug/kg	--
Nitrosodimethylamine[N-] 62-75-9	-- mg/m3	-- ug/L	1.5	2.75E-03 ug/kg	--	3.56E-03 ug/kg	--
Nitrosodiphenylamine[N-] 86-30-6	-- mg/m3	13 ug/L	8.1	155 ug/kg	660	5 ug/kg	660
Nitrosomethylethylamine[N-] 10595-95-6	-- mg/m3	-- ug/L	10	4.85E-03 ug/kg	--	4.62E-02 ug/kg	--
Nitrosomorpholine[N-] 59-89-2	-- mg/m3	-- ug/L	10	3.70E-03 ug/kg	--	2 ug/kg	--
Nitrosopiperidine[N-] 100-75-4	-- mg/m3	-- ug/L	20	2.26E-02 ug/kg	--	1.85E-01 ug/kg	--
Nitrosopyrrolidine[N-] 930-55-2	-- mg/m3	-- ug/L	40	9.08E-04 ug/kg	--	3.49E-01 ug/kg	--
Parathion 56-38-2	-- mg/m3	8.00E-03 ug/L	10	3.40E-01 ug/kg	--	3.16E-02 ug/kg	--
Pentachlorobenzene 608-93-5	-- mg/m3	4.90E-01 ug/L	10	6.32E+04 ug/kg	--	50 ug/kg	--
Pentachloroethane 76-01-7	1.00E-02 mg/m3	56 ug/L	5	689 ug/kg	10	100 ug/kg	10

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	Surface Water MRL	Sediment EDQL	Sediment MRL	Soil EDQL	Soil MRL
Pentachloronitrobenzene 82-68-8	- - mg/m3	13 ug/L	20	1.82E+04 ug/kg	- -	100 ug/kg	- -
Pentachlorophenol 87-86-5	- - mg/m3	2.29E-01 ug/L	0.076	3.02E+04 ug/kg	400	10 ug/kg	400
Phenacetin 62-44-2	- - mg/m3	6.3 ug/L	20	2 ug/kg	- -	57 ug/kg	- -
Phenanthrene 85-01-8	- - mg/m3	1 ug/L	10	41.9 ug/kg	660	100 ug/kg	660
Phenol 108-95-2	9.80E-02 mg/m3	100 ug/L	1	27 ug/kg	94	20 ug/kg	94
Phenylenediamine[p-] 106-50-3	- - mg/m3	- - ug/L	10	5.68E-03 ug/kg	- -	171 ug/kg	- -
Phorate 298-02-2	- - mg/m3	3.62 ug/L	0.4	8.61E-01 ug/kg	20	1.97E-03 ug/kg	20
Phthalate[bis(2-ethylhexyl)] 117-81-7	- - mg/m3	3 ug/L	2.7	182 ug/kg	181	5.00E+04 ug/kg	181
Picoline[2-] 109-06-8	4 mg/m3	3.79E+03 ug/L	5	753 ug/kg	- -	87 ug/kg	- -
Polychlorinated biphenyls 1336-36-3	- - mg/m3	2.90E-05 ug/L	5.4	34.1 ug/kg	- -	50 ug/kg	- -

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Polychlorinated dibenzo-p-dioxins PCDD-S	- - mg/m3	7.72E-09 ug/L	0.01	0.0033 ug/kg	- -	1.50E-05 ug/kg	- -
Polychlorinated dibenzofurans 51207-31-9	- - mg/m3	1.29E-03 ug/L	0.01	1.29E-05 ug/kg	- -	1.50E-05 ug/kg	- -
Pronamide 23950-58-5	- - mg/m3	160 ug/L	10	2 ug/kg	- -	14 ug/kg	- -
Propionitrile 107-12-0	9.35E-02 mg/m3	6.08E+03 ug/L	5	115 ug/kg	100	1 ug/kg	100
Propylamine[N-nitrosodi-n-] 621-64-7	- - mg/m3	- - ug/L	4.6	2.17E-01 ug/kg	660	4 ug/kg	660
Pyrene 129-00-0	- - mg/m3	3.00E-01 ug/L	2.7	53 ug/kg	660	100 ug/kg	660
Pyridine 110-86-1	3.80E-01 mg/m3	2.38E+03 ug/L	5	106 ug/kg	- -	100 ug/kg	- -
Safrole 94-59-7	- - mg/m3	40 ug/L	10	165 ug/kg	- -	7.67E-01 ug/kg	- -
Selenium (Total) 7782-49-2	- - mg/m3	5.00E-03 mg/L	20	- - mg/kg	200	3 ug/kg	200
Silver (Total) 7440-22-4	- - mg/m3	6.00E-05 mg/L	70	0.5 mg/kg	700	20 mg/kg	700

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Silvex 93-72-1	- - mg/m3	11 ug/L	0.75	7.35E+03 ug/kg	0.28	100 ug/kg	0.28
Styrene 100-42-5	4.73E-02 mg/m3	56 ug/L	1	445 ug/kg	5	100 ug/kg	5
Sulfide 18496-25-8	- - mg/m3	2.00E-03 mg/L	10000	- - mg/kg	- -	2.44E-02 mg/kg	- -
Tetrachlorobenzene[1,2,4,5-] 95-94-3	- - mg/m3	6.91E-01 ug/L	10	2.09E+04 ug/kg	- -	50 ug/kg	- -
Tetrachlorodibenzo-p-dioxin[2,3,7,8-] 1746-01-6	- - mg/m3	8.33E-08 ug/L	0.01	0.0033 ug/kg	0.8	1.50E-05 ug/kg	0.8
Tetrachloroethane[1,1,1,2-] 630-20-6	6.25E-01 mg/m3	90.25 ug/L	1	11 ug/kg	5	100 ug/kg	5
Tetrachloroethane[1,1,2,2-] 79-34-5	10 mg/m3	13 ug/L	1.5	29 ug/kg	5	100 ug/kg	5
Tetrachloroethene 127-18-4	3 mg/m3	8.9 ug/L	0.4	196 ug/kg	0.4	100 ug/kg	0.4
Tetrachlorophenol[2,3,4,6-] 58-90-2	- - mg/m3	2 ug/L	10	1.51E+03 ug/kg	- -	10 ug/kg	- -
Tetraethyl dithiopyrophosphate 3689-24-5	- - mg/m3	3.86E-01 ug/L	0.7	560 ug/kg	35	2 ug/kg	35

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Thallium (Total) 7440-28-0	-- mg/m3	2.80E-04 mg/L	10	-- mg/kg	100	700 mg/kg	100
Tin (Total) 7440-31-5	-- mg/m3	-- mg/L	8000	-- mg/kg	2000	20 mg/kg	2000
Toluene 108-88-3	29 mg/m3	253 ug/L	1	52500 ug/kg	2	50 ug/kg	2
Toluidine[5-nitro-o-] 99-55-8	-- mg/m3	-- ug/L	10	8.45E-01 ug/kg	--	70 ug/kg	--
Toluidine[o-] 95-53-4	-- mg/m3	-- ug/L	10	1.99E-01 ug/kg	--	27 ug/kg	--
Toxaphene 8001-35-2	-- mg/m3	2.00E-04 ug/L	0.86	1.09E-01 ug/kg	57.6	100 ug/kg	57.6
Trichlorobenzene[1,2,4-] 120-82-1	-- mg/m3	8 ug/L	1	8.44E+03 ug/kg	34	50 ug/kg	34
Trichloroethane[1,1,1-] 71-55-6	208 mg/m3	88 ug/L	1	247 ug/kg	5	100 ug/kg	5
Trichloroethane[1,1,2-] 79-00-5	5.78E-01 mg/m3	650 ug/L	1	674 ug/kg	0.2	100 ug/kg	0.2
Trichloroethylene 79-01-6	61 mg/m3	75 ug/L	0.1	180 ug/kg	0.1	100 ug/kg	0.1

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Trichlorofluoromethane 75-69-4	143 mg/m3	6.40E+03 ug/L	0.3	1.97E+04 ug/kg	0.3	100 ug/kg	0.3
Trichlorophenol[2,4,5-] 95-95-4	- - mg/m3	63 ug/L	10	5.39E+03 ug/kg	660	10 ug/kg	660
Trichlorophenol[2,4,6-] 88-06-2	- - mg/m3	2 ug/L	5	85 ug/kg	390	10 ug/kg	390
Trichloropropane[1,2,3-] 96-18-4	9.23E-02 mg/m3	12.11 ug/L	1	8 ug/kg	4	100 ug/kg	4
Trichlorphenoxyacetic acid[2,4,5-] 93-76-5	- - mg/m3	63 ug/L	0.8	5.39E+03 ug/kg	130	100 ug/kg	130
Triethyl phosphorothioate[O,O,O-] 126-68-1	- - mg/m3	3 ug/L	10	189 ug/kg	- -	4 ug/kg	- -
Trinitrobenzene[Sym-] 99-35-4	- - mg/m3	- - ug/L	0.26	1.21E-01 ug/kg	250	7 ug/kg	250
Vanadium (Total) 7440-62-2	- - mg/m3	- - mg/L	40	- - mg/kg	- -	15 mg/kg	- -
Vinyl acetate 108-05-4	18 mg/m3	248.03 ug/L	5	13 ug/kg	50	352 ug/kg	50
Vinyl chloride 75-01-4	6.15E-03 mg/m3	9.2 ug/L	0.2	2 ug/kg	0.2	30 ug/kg	0.2

Chemical Name CAS Number	Air EDQL	Surface Water EDQL	MRL	Sediment EDQL	MRL	Soil EDQL	MRL
Xylenes (total) 1330-20-7	2 mg/m3	117 ug/L	0.1	1.88E+03 ug/kg	0.1	50 ug/kg	0.1
Zinc (Total) 7440-66-6	- - mg/m3	2.76E-02 mg/L	20	120 mg/kg	200	4 mg/kg	200

APPENDIX B

MEDIUM-SPECIFIC CRITERIA

(40 Pages)

CRITERIA VALUES FOR SOIL MEDIUM

(13 Pages)

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Acenaphthene	--	--	--	20000000	10000	--
Acenaphthylene	--	--	--	--	10000	--
Acetone	--	--	--	--	--	10000000
Acetonitrile	--	--	--	--	--	10000000
Acetophenone	--	--	--	--	--	100000
Acetylaminofluorene[2-]	--	--	--	--	--	--
Acrolein	--	--	--	--	--	10000
Acrylonitrile	--	--	--	100	--	100000
Aldrin	100	--	1400	40	100	--
Allyl chloride	100	--	--	--	100	--
Aminobiphenyl[4-]	--	--	--	--	--	--
Aniline	--	--	--	--	--	100000
Anthracene	100	--	--	80000000	10000	--
Antimony (Total)	--	4.5	500	--	--	8
Aramite	--	--	--	--	--	--
Arsenic (Total)	20	2	500	0.4	30	2
Azobenzene[p-(dimethylamino)]	--	--	--	--	--	--
Barium (Total)	200	--	10000	20000	500	100
Benzene	10	300	--	1000	500	100000

Organics are in ug/kg

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Benzo[a]anthracene	--	--	--	100	1000	--
Benzo[a]pyrene	100	20	--	100	1000	--
Benzo[b]fluoranthene	--	--	--	100	--	--
Benzo[ghi]perylene	--	--	--	--	1000	--
Benzo[k]fluoranthene	--	--	--	100	--	--
Benzyl alcohol	--	--	--	--	--	1000000
Beryllium (Total)	--	--	75	0.1	--	2.2
BHC[alpha-]	100	--	--	100	100	--
BHC[beta-]	100	--	--	--	100	--
BHC[delta-]	100	--	--	--	100	--
BHC[gamma-]	100	100	4000	80000	100	0.8
Bromodichloromethane	100	--	--	5000	100	--
Bromoform	--	--	--	80000	--	--
Bromophenyl phenyl ether[4-]	--	--	--	--	--	--
Butylamine[N-Nitrosodi-n-]	--	--	--	--	--	--
Butylbenzyl phthalate	--	--	--	--	--	10000000
Cadmium (Total)	1	--	100	100	5	0.08
Carbon disulfide	--	--	--	--	--	--
Carbon tetrachloride	100	--	--	5000	5000	100000

Organ[illegible]re in ug/kg
Inorga[illegible] are in mg/kg

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Chlordane	100	--	2500	500	100	--
Chlorethyl ether[bis(2-]	100	--	--	--	100	--
Chloro-1-methylethyl)ether[Bis(2-]	100	--	--	--	100	--
Chloroaniline[p-]	--	--	--	--	--	--
Chlorobenzene	50	--	--	5000000	1000	10000
Chlorobenzilate	100	--	--	--	100	--
Chloroethane	100	--	--	--	100	--
Chloroform	100	--	--	100000	5000	100000
Chloronaphthalene[2-]	--	--	--	--	--	--
Chlorophenol[2-]	10	--	--	--	500	20000
Chlorophenyl phenyl ether[4-]	--	--	--	--	--	--
Chloroprene	100	--	--	--	100	--
Chromium (Total)	100	.05	2500	1000	250	10
Chrysene	--	--	--	100	1000	--
Cobalt (Total)	20	--	8000	--	50	10
Copper (Total)	50	3	2500	10000	100	2
Cresol[4,6-dinitro-o-]	--	--	--	--	1000	10000
Cresol[m-]	--	--	--	--	1000	20000
Cresol[o-]	--	--	--	--	1000	20000

Organics are in ug/kg
Inorganics are in mg/kg

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Chronic Criteria					
	Netherlands	Great Britain	California	Oregon	Quebec	AMEG
Cresol[p-chloro-m-]	--	--	--	--	--	60
Cresol[p-]	--	--	--	--	1000	20000
Cyanide	5	--	--	5000	50	--
DDD[4,4'-]	100	--	1000	3000	100	--
DDE[4,4'-]	100	--	1000	2000	100	--
DDT[4,4'-]	100	1000	1000	2000	100	--
Di-n-butyl phthalate	--	--	--	--	--	60
Di-n-octyl phthalate	--	--	--	--	--	--
Diallate	100	--	--	--	100	--
Dibenzofuran	--	--	--	--	--	--
Dibenz[a,h]anthracene	--	--	--	100	1000	--
Dibromo-3-chloropropane[1,2-]	100	--	--	--	100	--
Dibromochloromethane	100	--	--	5000000	100	--
Dibromoethane[1,2-]	--	--	--	--	--	--
Dichloro-2-butene[trans-1,4-]	100	--	--	--	100	--
Dichlorobenzene[m-]	50	--	--	--	1000	10000
Dichlorobenzene[o-]	50	--	--	--	1000	10000
Dichlorobenzene[p-]	50	--	--	--	1000	10000
Dichlorobenzidine[3,3'-]	--	--	--	1000	--	--

Organ[illegible]re in ug/kg
Inorga[illegible] are in mg/kg

Chemical Name	Chronic Criteria					
	Netherlands	Great Britain	California	Oregon	Quebec	AMEG
Dichlorodifluoromethane	100	--	--	--	100	--
Dichloroethane[1,1-]	100	--	--	--	5000	--
Dichloroethane[1,2-]	100	--	--	--	5000	1000000
Dichloroethene[1,1-]	100	--	--	10	5000	1000000
Dichloroethylene[trans-1,2-]	100	--	--	5000000	5000	--
Dichlorophenol[2,4-]	10	50	--	--	500	80
Dichlorophenol[2,6-]	10	--	--	--	500	--
Dichloropropane[1,2-]	100	--	--	--	5000	100000
Dichloropropene[trans-1,3-]	100	--	--	--	5000	100000
Dieldrin	100	--	8000	40	100	--
Diethyl O-2-pyrazinyl phosphorothioate[O,O-]	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	60
Dimethoate	--	300	--	--	--	--
Dimethyl phthalate	--	--	--	--	--	60
Dimethylbenzidine[3,3'-]	--	--	--	--	--	--
Dimethylbenz[a]anthracene[7,12-]	--	--	--	--	1000	--
Dimethylphenethylamine[alpha,alpha-]	--	--	--	--	--	100000
Dimethylphenol[2,4-]	20	--	--	--	1000	--
Dinitrobenzene[m-]	--	--	--	--	--	--

Organics are in ug/kg
Inorganics are in mg/kg

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Dinitrophenol[2,4-]	20	--	--	--	1000	10000
Dinitrotoluene[2,4-]	--	--	--	--	--	100000
Dinitrotoluene[2,6-]	--	--	--	1000	--	--
Dinoseb	--	--	--	--	--	--
Dioxane[1,4-]	--	--	--	--	--	1000000
Diphenylamine	--	--	--	--	--	--
Disulfoton	--	--	--	--	--	--
D[2,4-]	100	100	100000	3000000	100	--
Endosulfan I	100	100	--	10000	100	--
Endosulfan II	100	100	--	10000	100	--
Endosulfan sulfate	100	--	--	--	100	--
Endrin	100	--	200	80000	100	--
Endrin aldehyde	100	--	--	--	100	--
Ethyl methacrylate	--	--	--	--	--	--
Ethyl methane sulfonate	--	--	--	--	--	--
Ethylbenzene	50	--	--	15000000	5000	50000
Famphur	--	--	--	--	--	--
Fluoranthene	100	--	--	10000000	10000	--
Fluorene	--	--	--	10000000	10000	--

Org[illegible] are in ug/kg
Inorg[illegible] are in mg/kg

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Heptachlor	100	50	4700	100	100	--
Heptachlor epoxide	100	--	--	70	100	--
Hexachlorobenzene	50	--	--	400	2000	10000
Hexachlorobutadiene	100	500	--	--	100	--
Hexachlorocyclopentadiene	100	--	--	--	100	--
Hexachloroethane	--	--	--	300000	--	--
Hexachlorophene	100	--	--	--	100	--
Hexachloropropene	100	--	--	--	100	--
Hexanone[2-]	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	100	1000	--
Isobutyl alcohol	--	--	--	--	--	1000000
Isodrin	100	--	--	--	100	--
Isophorone	--	--	--	--	--	--
Isosafrole	--	--	--	--	--	--
Kepone	100	--	21000	--	100	--
Lead (Total)	50	20	1000	200	500	10
Mercury (Total)	0.5	2.1	20	80	2	0.002
Methacrylonitrile	--	--	--	--	--	--
Methane[bis(2-chloroethoxy)]	100	--	--	--	100	--

Organics are in ug/kg

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Chronic Criteria					
	Netherlands	Great Britain	California	Oregon	Quebec	AMEG
Methapyrilene	--	--	--	--	--	--
Methoxychlor	100	--	100000	--	100	--
Methyl bromide	--	--	--	400000	--	--
Methyl chloride	100	--	--	--	100	--
Methyl ethyl ketone	--	--	--	--	--	10000000
Methyl iodide	--	--	--	--	--	--
Methyl methacrylate	--	--	--	--	--	1000000
Methyl methanesulfanate	--	--	--	--	--	--
Methyl parathion	--	--	--	--	--	--
Methyl-2-pentanone[4-]	--	--	--	--	--	--
Methylcholanthrene[3-]	--	--	--	--	1000	--
Methylene bromide	--	--	--	--	--	--
Methylene chloride	100	--	--	7000	100	1000000
Methylnaphthalene[2-]	--	--	--	--	1000	--
Naphthalene	--	--	--	--	5000	--
Naphthoquinone[1,4-]	--	--	--	--	--	--
Naphthylamine[1-]	--	--	--	--	--	--
Naphthylamine[2-]	--	--	--	--	--	--
Nickel (Total)	50	4	2000	5000	100	[illegible]04

Organ[illegible]re in ug/kg

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Nitroaniline[m-]	--	--	--	--	--	--
Nitroaniline[o-]	--	--	--	--	--	--
Nitroaniline[p-]	--	--	--	--	--	--
Nitrobenzene	--	--	--	--	--	100000
Nitrophenol[o-]	20	--	--	--	1000	20000
Nitrophenol[p-]	20	--	--	--	1000	20000
Nitroquinoline-1-oxide[4-]	--	--	--	--	--	100000
Nitrosodiethylamine[N-]	--	--	--	--	--	--
Nitrosodimethylamine[N-]	--	--	--	--	--	--
Nitrosodiphenylamine[N-]	--	--	--	--	--	--
Nitrosomethylethylamine[N-]	--	--	--	--	--	--
Nitrosomorpholine[N-]	--	--	--	--	--	--
Nitrosopiperidine[N-]	--	--	--	--	--	--
Nitrosopyrrolidine[N-]	--	--	--	--	--	--
Parathion	--	--	--	--	--	--
Pentachlorobenzene	50	--	--	--	2000	--
Pentachloroethane	100	--	--	--	100	--
Pentachloronitrobenzene	100	--	--	--	100	--
Pentachlorophenol	10	--	17000	5000	500	2500

Organics are in ug/kg

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Netherlands	Great Britain	Chronic Criteria California	Oregon	Quebec	AMEG
Phenacetin	--	--	--	--	--	--
Phenanthrene	100	--	--	--	5000	100
Phenol	20	--	--	--	1000	20000
Phenylenediamine[p-]	--	--	--	--	--	--
Phorate	--	--	--	--	--	--
Phthalate[bis(2-ethylhexyl)]	--	--	--	50000	--	--
Picoline[2-]	--	--	--	--	--	--
Polychlorinated biphenyls	50	--	50000	80	1000	2500
Polychlorinated dibenzo-p-dioxins	--	--	--	--	0.000015	--
Polychlorinated dibenzofurans	--	--	--	--	0.000015	--
Pronamide	--	--	--	--	--	--
Propionitrile	--	--	--	--	--	--
Propylamine[N-nitrosodi-n-]	--	--	--	--	--	--
Pyrene	100	--	--	8000000	10000	--
Pyridine	100	--	--	--	100	1000000
Safrole	--	--	--	--	--	--
Selenium (Total)	--	--	100000	--	3	1000
Silver (Total)	--	--	500	1500	20	--
Silvex	100	--	10000	--	100	--

Organ[illegible]re in ug/kg
Inorga[illegible]s are in mg/kg

Chemical Name	Netherlands	Great Britain	California	Oregon	Quebec	AMEG
			Chronic Criteria			
Styrene	100	--	--	--	5000	50000
Sulfide	--	--	--	--	--	--
Tetrachlorobenzene[1,2,4,5-]	50	--	--	--	2000	--
Tetrachlorodibenzo-p-dioxin[2,3,7,8-]	--	--	.10	--	0.000015	--
Tetrachloroethane[1,1,1,2-]	100	--	--	--	100	--
Tetrachloroethane[1,1,2,2-]	100	--	--	--	5000	--
Tetrachloroethene	100	--	--	9000	5000	100000
Tetrachlorophenol[2,3,4,6-]	10	--	--	--	500	--
Tetraethyl dithiopyrophosphate	--	--	--	--	--	--
Thallium (Total)	--	--	700	--	--	--
Tin (Total)	20	--	--	--	50	--
Toluene	50	300	--	5000000	3000	50000
Toluidine[5-nitro-o-]	--	--	--	--	--	--
Toluidine[o-]	--	--	--	--	--	--
Toxaphene	100	500	5000	600	100	--
Trichlorobenzene[1,2,4-]	50	--	--	--	2000	10000
Trichloroethane[1,1,1-]	100	--	--	7000000	5000	100000
Trichloroethane[1,1,2-]	100	--	--	1000000	5000	100000
Trichloroethylene	100	--	2040000	20000	5000	1000000

Organics are in ug/kg
Inorganics are in mg/kg

ALL CRITERIA VALUES FOR SOIL MEDIUM

Chemical Name	Netherlands	Great Britain	California	Oregon	Quebec	AMEG
			Chronic Criteria			
Trichlorofluoromethane	100	--	--	1000000	100	--
Trichlorophenol[2,4,5-]	10	--	--	--	500	--
Trichlorophenol[2,4,6-]	10	--	--	60000	500	--
Trichloropropane[1,2,3-]	100	--	--	--	100	--
Trichlorphenoxyacetic acid[2,4,5-]	100	--	--	--	100	--
Triethyl phosphorothioate[O,O,O-]	--	--	--	--	--	--
Trinitrobenzene[Sym-]	--	--	--	--	--	--
Vanadium (Total)	--	150	2400	--	--	15
Vinyl acetate	--	--	--	--	--	--
Vinyl chloride	100	--	--	30	100	10000000
Xylenes (total)	50	--	--	2000000	5000	100000
Zinc (Total)	200	23	5000	--	500	4

Orga[illegible] are in ug/kg

REFERENCES FOR SOIL MEDIUM CRITERIA

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Quebec: Each Quebec criterion value is either taken or adapted from one of the following sources: (1) Simms, D.L., and M.J. Beckett. 1987. "Contaminated Land: Setting Trigger Concentrations." Science Total Environment. 65:121. Cited in Quebec Soil Cleanup Criteria. (2) Quebec Ministere de L'Environnement et de la Faune. 1996. Project de Politique de Protection des Sols et de Rehabilitation, des Terrain Contamines. Service de Lieux Contamines Direction des Politiques du Secteur Industriel. Mars.

AMEG: AMEG = Ambient Multimedia Environmental Goal, which represents "concentrations of pollutants in emission streams which, after dispersion, will not cause the level of contamination in the ambient media (soil) to exceed safe continuous exposure concentrations." Each AMEG is either taken or adapted from one or more of the following sources: (1) Kingsbury, G.L., and others. 1979a. Multimedia Environmental Goals for Environmental Assessment. Volume III. MEG Charts and Background Information. U.S. Environmental Protection Agency (EPA) 600/7-79-176a. (2) Kingsbury, G.L., and others. 1979b. Multimedia Environmental Goals for Environmental Assessment. Volume IV. MEG Charts and Background Information. EPA 600/7-79-176b. (3) Kingsbury, G.L., and R.R. Vanderslice. 1982. "Update of Discharge Multimedia Goals (DMEGs) for Inorganics." Research Triangle Institute Report to the EPA. All cited in Fitchko, J. 1989. Criteria for Contaminated Soil/Sediment Cleanup. Pudvan Publishing Company. Northbrook, Illinois.

CRITERIA VALUES FOR SEDIMENT MEDIUM

(12 Pages)

ALL CRITERIA VALUES FOR SEDIMENT MEDIUM

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Acenaphthene	1300	920	--	6.71
Acenaphthylene	--	--	--	5.87
Acetone	--	--	--	--
Acetonitrile	--	--	--	--
Acetophenone	--	--	--	--
Acetylaminofluorene[2-]	--	--	--	--
Acrolein	--	--	--	--
Acrylonitrile	--	--	--	--
Aldrin	--	--	2	--
Allyl chloride	--	--	--	--
Aminobiphenyl[4-]	--	--	--	--
Aniline	--	--	--	--
Anthracene	--	--	220	46.9
Antimony (Total)	--	--	--	--
Aramite	--	--	--	--
Arsenic (Total)	--	--	6	5.9
Azobenzene[p-(dimethylamino)]	--	--	--	--
Barium (Total)	--	--	--	--
Benzene	--	--	--	--
Benzo[a]anthracene	--	--	320	31.7
Benzo[a]pyrene	--	890	370	31.9
Benzo[b]fluoranthene	--	--	--	--

ALL CRITERIA VALUES FOR SEDIMENT MEDIUM

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Benzo[ghi]perylene	--	--	170	--
Benzo[k]fluoranthene	--	--	240	--
Benzyl alcohol	--	--	--	--
Beryllium (Total)	--	--	--	--
BHC[alpha-]	--	--	6	--
BHC[beta-]	--	--	5	--
BHC[delta-]	--	--	--	--
BHC[gamma-]	--	--	3	0.94
Bromodichloromethane	--	--	--	--
Bromoform	--	--	--	--
Bromophenyl phenyl ether[4-]	--	--	--	--
Butylamine[N-Nitrosodi-n-]	--	--	--	--
Butylbenzyl phthalate	--	--	--	--
Cadmium (Total)	--	--	0.6	0.596
Carbon disulfide	--	--	--	--
Carbon tetrachloride	--	--	--	--
Chlordane	--	--	7	4.5
Chlorethyl ether[bis(2-]	--	--	--	--
Chloro-1-methylethyl)ether[Bis(2-]	--	--	--	--
Chloroaniline[p-]	--	--	--	--
Chlorobenzene	--	--	--	--
Chlorobenzilate	--	--	--	--

Organ ıre in ug/kg

ALL CRITERIA VALUES FOR SEDIMENT MEDIUM

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Chloroethane	--	--	--	--
Chloroform	--	27	--	--
Chloronaphthalene[2-]	--	--	--	--
Chlorophenol[2-]	--	--	--	--
Chlorophenyl phenyl ether[4-]	--	--	--	--
Chloroprene	--	--	--	--
Chromium (Total)	--	--	26	37.3
Chrysene	--	--	340	57.1
Cobalt (Total)	--	--	50	--
Copper (Total)	--	--	16	35.7
Cresol[4,6-dinitro-o-]	--	--	--	--
Cresol[m-]	--	--	--	--
Cresol[o-]	--	--	--	--
Cresol[p-chloro-m-]	--	--	--	--
Cresol[p-]	--	--	--	--
Cyanide	--	--	0.1	--
DDD[4,4'-]	--	--	--	--
DDE[4,4'-]	--	--	5	1.42
DDT[4,4'-]	--	--	--	1.19
Di-n-butyl phthalate	--	110.5	--	--
Di-n-octyl phthalate	--	--	--	--
Diallate	--	--	--	--

Chemical Name	Chronic Criteria EPA	WDNR	Ontario	Env. Canada
Dibenzofuran	--	--	--	--
Dibenz[a,h]anthracene	--	--	60	6.22
Dibromo-3-chloropropane[1,2-]	--	--	--	--
Dibromochloromethane	--	--	--	--
Dibromoethane[1,2-]	--	--	--	--
Dichloro-2-butene[trans-1,4-]	--	--	--	--
Dichlorobenzene[m-]	--	--	--	--
Dichlorobenzene[o-]	--	--	--	--
Dichlorobenzene[p-]	--	--	--	--
Dichlorobenzidine[3,3'-]	--	--	--	--
Dichlorodifluoromethane	--	--	--	--
Dichloroethane[1,1-]	--	--	--	--
Dichloroethane[1,2-]	--	--	--	--
Dichloroethene[1,1-]	--	--	--	--
Dichloroethylene[trans-1,2-]	--	--	--	--
Dichlorophenol[2,4-]	--	--	--	--
Dichlorophenol[2,6-]	--	--	--	--
Dichloropropane[1,2-]	--	--	--	--
Dichloropropene[cis-1,3-]	--	--	--	--
Dichloropropene[trans-1,3-]	--	--	--	--
Dieldrin	110	--	2	2.85
Diethyl O-2-pyrazinyl phosphorothioate[O,O-]	--	--	--	--

Organ[illegible]re in ug/kg
Inorga[illegible]s are in mg/kg

ALL CRITERIA VALUES FOR SEDIMENT MEDIUM

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Diethyl phthalate	--	--	--	--
Dimethoate	--	--	--	--
Dimethyl phthalate	--	--	--	--
Dimethylbenzidine[3,3'-]	--	--	--	--
Dimethylbenz[a]anthracene[7,12-]	--	--	--	--
Dimethylphenethylamine[alpha,alpha-]	--	--	--	--
Dimethylphenol[2,4-]	--	--	--	--
Dinitrobenzene[m-]	--	--	--	--
Dinitrophenol[2,4-]	--	--	--	--
Dinitrotoluene[2,4-]	--	--	--	--
Dinitrotoluene[2,6-]	--	--	--	--
Dinoseb	--	--	--	--
Dioxane[1,4-]	--	--	--	--
Diphenylamine	--	--	--	--
Disulfoton	--	--	--	--
D[2,4-]	--	--	--	--
Endosulfan I	--	--	--	--
Endosulfan II	--	--	--	--
Endosulfan sulfate	--	--	--	--
Endrin	42	--	3	2.67
Endrin aldehyde	--	--	--	--
Ethyl methacrylate	--	--	--	--

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Ethyl methane sulfonate	--	--	--	--
Ethylbenzene	--	0.1	--	--
Famphur	--	--	--	--
Fluoranthene	6200	12160	750	111.3
Fluorene	--	--	190	21.2
Heptachlor	--	--	5	0.6
Heptachlor epoxide	--	--	5	0.6
Hexachlorobenzene	--	--	20	--
Hexachlorobutadiene	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--
Hexachloroethane	--	--	--	--
Hexachlorophene	--	--	--	--
Hexachloropropene	--	--	--	--
Hexanone[2-]	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	200	--
Isobutyl alcohol	--	--	--	--
Isodrin	--	--	--	--
Isophorone	--	--	--	--
Isosafrole	--	--	--	--
Kepone	--	--	--	--
Lead (Total)	--	--	31	35
Mercury (Total)	--	--	0.2	0.174

Orga[illegible]e in ug/kg
Inorga[illegible] are in mg/kg

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Methacrylonitrile	--	--	--	--
Methane[bis(2-chloroethoxy)]	--	--	--	--
Methapyrilene	--	--	--	--
Methoxychlor	--	--	--	--
Methyl bromide	--	--	--	--
Methyl chloride	--	--	--	--
Methyl ethyl ketone	--	--	--	--
Methyl iodide	--	--	--	--
Methyl methacrylate	--	--	--	--
Methyl methanesulfanate	--	--	--	--
Methyl parathion	--	--	--	--
Methyl-2-pentanone[4-]	--	--	--	--
Methylcholanthrene[3-]	--	--	--	--
Methylene bromide	--	--	--	--
Methylene chloride	--	1260	--	--
Methylnaphthalene[2-]	--	--	--	20.2
Naphthalene	--	12400	--	34.6
Naphthoquinone[1,4-]	--	--	--	--
Naphthylamine[1-]	--	--	--	--
Naphthylamine[2-]	--	--	--	--
Nickel (Total)	--	--	16	18
Nitroaniline[m-]	--	--	--	--

Organics are in ug/kg
Inorganics are in mg/kg

Chemical Name	Chronic Criteria EPA	WDNR	Ontario	Env. Canada
Nitroaniline[o-]	--	--	--	--
Nitroaniline[p-]	--	--	--	--
Nitrobenzene	--	--	--	--
Nitrophenol[o-]	--	--	--	--
Nitrophenol[p-]	--	--	--	--
Nitroquinoline-1-oxide[4-]	--	--	--	--
Nitrosodiethylamine[N-]	--	--	--	--
Nitrosodimethylamine[N-]	--	--	--	--
Nitrosodiphenylamine[N-]	--	--	--	--
Nitrosomethylethylamine[N-]	--	--	--	--
Nitrosomorpholine[N-]	--	--	--	--
Nitrosopiperidine[N-]	--	--	--	--
Nitrosopyrrolidine[N-]	--	--	--	--
Parathion	--	--	--	--
Pentachlorobenzene	--	--	--	--
Pentachloroethane	--	--	--	--
Pentachloronitrobenzene	--	--	--	--
Pentachlorophenol	--	--	--	--
Phenacetin	--	--	--	--
Phenanthrene	1800	--	560	41.9
Phenol	--	--	--	--
Phenylenediamine[p-]	--	--	--	--

Orga[illegible]are in ug/kg
Inorga[illegible]s are in mg/kg

Chemical Name	Chronic Criteria EPA	WDNR	Ontario	Env. Canada
Phorate	--	--	--	--
Phthalate[bis(2-ethylhexyl)]	--	--	--	182
Picoline[2-]	--	--	--	--
Polychlorinated biphenyls	--	--	70	34:1
Polychlorinated dibenzo-p-dioxins	--	0.0033	--	--
Polychlorinated dibenzofurans	--	--	--	--
Pronamide	--	--	--	--
Propionitrile	--	--	--	--
Propylamine[N-nitrosodi-n-]	--	--	--	--
Pyrene	--	--	490	53
Pyridine	--	--	--	--
Safrole	--	--	--	--
Selenium (Total)	--	--	--	--
Silver (Total)	--	--	0.5	0.73
Silvex	--	--	--	--
Styrene	--	--	--	--
Sulfide	--	--	--	--
Tetrachlorobenzene[1,2,4,5-]	--	--	--	--
Tetrachlorodibenzo-p-dioxin[2,3,7,8-]	--	0.0033	--	--
Tetrachloroethane[1,1,1,2-]	--	--	--	--
Tetrachloroethane[1,1,2,2-]	--	--	--	--
Tetrachloroethene	--	--	--	--

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Tetrachlorophenol[2,3,4,6-]	--	--	--	--
Tetraethyl dithiopyrophosphate	--	--	--	--
Thallium (Total)	--	--	--	--
Tin (Total)	--	--	--	--
Toluene	--	52500	--	--
Toluidine[5-nitro-o-]	--	--	--	--
Toluidine[o-]	--	--	--	--
Toxaphene	--	--	--	--
Trichlorobenzene[1,2,4-]	--	--	--	--
Trichloroethane[1,1,1-]	--	--	--	--
Trichloroethane[1,1,2-]	--	--	--	--
Trichloroethylene	--	--	--	--
Trichlorofluoromethane	--	--	--	--
Trichlorophenol[2,4,5-]	--	--	--	--
Trichlorophenol[2,4,6-]	--	--	--	--
Trichloropropane[1,2,3-]	--	--	--	--
Trichlorphenoxyacetic acid[2,4,5-]	--	--	--	--
Triethyl phosphorothioate[O,O,O-]	--	--	--	--
Trinitrobenzene[Sym-]	--	--	--	--
Vanadium (Total)	--	--	--	--
Vinyl acetate	--	--	--	--
Vinyl chloride	--	--	--	--

Orga[are in ug/kg

ALL CRITERIA VALUES FOR SEDIMENT MEDIUM

Chemical Name	Chronic Criteria			
	EPA	WDNR	Ontario	Env. Canada
Xylenes (total)	--	--	--	--
Zinc (Total)	--	--	120	123.1

REFERENCES FOR SEDIMENT MEDIUM CRITERIA

EPA: EPA. 1993. Sediment Quality Criteria for the Protection of Benthic Organisms: Acenaphthene, Fluoranthene, Phenanthrene, Endrin, and Dieldrin. EPA-88-12-93-012 through -016. September.

WDNR: Wisconsin Department of Natural Resources. 1990. Memorandum Regarding Development of Sediment Quality Criteria for the Little Menomonee River/Moss-American Superfund Site. From Mark Giesfeldt. To Duane Shuettpelz. January.

Ontario: Persaud, D., and others. 1993. Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario. Ontario Ministry of the Environment. August.

Env. Canada: Environment Canada. 1994. Interim Sediment Quality Assessment Values. Ecosystem Conservation Directorate. Evaluation and Interpretation Branch. September.

CRITERIA VALUES FOR SURFACE WATER MEDIUM

(15 Pages)

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Acenaphthene	--	0.0099	--	0.067	--	0.012	--
Acenaphthylene	--	--	--	--	--	--	--
Acetone	--	122000	--	--	--	--	--
Acetonitrile	--	30000	--	--	--	--	--
Acetophenone	--	--	--	--	--	--	--
Acetylaminofluorene[2-]	--	--	--	--	--	--	--
Acrolein	--	--	--	--	--	--	--
Acrylonitrile	--	73	--	430	--	--	--
Aldrin	3	--	1.5	0.01	1.94	--	--
Allyl chloride	230000	--	--	--	--	--	--
Aminobiphenyl[4-]	--	--	--	--	--	--	--
Aniline	--	--	--	0.44	--	--	--
Anthracene	--	--	--	--	--	0.029	--
Antimony (Total)	0.03	--	--	0.19	--	0.031	--
Aramite	--	--	--	--	--	--	--
Arsenic (Total)	0.190	0.19	0.190	0.19	0.153	0.053	--
Azobenzene[p-(dimethylamino)]	--	--	--	--	--	--	--

Organics are in ug/L
Inorganics are in mg/L

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Barium (Total)	--	--	--	--	--	--	--
Benzene	--	416	--	560	--	114	--
Benzo[a]anthracene	--	--	--	--	--	--	--
Benzo[a]pyrene	--	--	--	--	--	--	--
Benzo[b]fluoranthene	--	--	--	--	--	--	--
Benzo[ghi]perylene	--	--	--	--	--	--	--
Benzo[k]fluoranthene	--	--	--	--	--	--	--
Benzyl alcohol	--	--	--	--	--	--	--
Beryllium (Total)	0.0053	--	--	0.007602	--	--	--
BHC[alpha-]	--	--	--	--	--	--	--
BHC[beta-]	--	--	--	--	--	--	--
BHC[delta-]	--	--	--	--	--	--	--
BHC[gamma-]	0.08	--	0.08	0.01	0.335	0.036	--
Bromodichloromethane	6400	--	--	--	--	--	--
Bromoform	--	--	--	1000	--	466	--
Bromophenyl phenyl ether[4-]	--	--	--	--	--	--	--
Butylamine[N-Nitrosodi-n-]	--	--	--	--	--	--	--

Organ re in ug/L
Inorga are in mg/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Butylbenzyl phthalate	3	--	--	49	--	--	--
Cadmium (Total)	0.0011	0.0006582	6.582	0.0008095	0.0000216	0.00066	--
Carbon disulfide	--	--	--	--	--	--	--
Carbon tetrachloride	--	280	--	280	--	5.9	--
Chlordane	0.0043	--	0.0043	0.01	0.188	0.00029	--
Chlorethyl ether[bis(2-]	--	--	--	--	--	--	--
Chloro-1-methylethyl)ether[Bis(2-]	--	--	--	--	--	--	--
Chloroaniline[p-]	--	--	--	--	--	--	--
Chlorobenzene	--	79	--	26	--	10	--
Chlorobenzilate	--	--	--	--	--	--	--
Chloroethane	230000	--	--	--	--	--	--
Chloroform	--	150	--	79	--	224	--
Chloronaphthalene[2-]	--	--	--	--	--	--	--
Chlorophenol[2-]	--	--	--	8.8	--	--	--
Chlorophenyl phenyl ether[4-]	--	--	--	--	--	--	--
Chloroprene	--	--	--	--	--	--	--
Chromium (Total)	0.011	0.011	0.011	0.011	0.0306	0.011	--

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Chrysene	--	--	--	--	--	--	--
Cobalt (Total)	--	--	--	--	--	0.005	--
Copper (Total)	0.0065	0.00653	0.00653	0.00622	0.00599	0.0064	--
Cresol[4,6-dinitro-o-]	--	2.3	--	--	--	--	--
Cresol[m-]	--	--	--	--	--	--	--
Cresol[o-]	--	--	--	--	--	--	--
Cresol[p-chloro-m-]	--	--	--	--	--	--	--
Cresol[p-]	--	--	--	--	--	--	--
Cyanide	0.0052	0.0052	0.0052	0.0052	0.00496	0.0052	--
DDD[4,4'-]	--	--	--	--	--	--	--
DDE[4,4'-]	--	--	--	--	--	--	--
DDT[4,4'-]	0.001	--	0.001	0.001	0.43	0.0017	--
Di-n-butyl phthalate	3	--	--	190	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	30	--
Diallate	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--
Dibenz[a,h]anthracene	--	--	--	--	--	--	--

Organi In ug/L
Inorga are in mg/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Dibromo-3-chloropropane[1,2-]	--	--	--	--	--	--	--
Dibromochloromethane	6400	--	--	--	--	--	--
Dibromoethane[1,2-]	--	--	--	--	--	--	--
Dichloro-2-butene[trans-1,4-]	--	--	--	--	--	--	--
Dichlorobenzene[m-]	--	196	--	87	--	--	--
Dichlorobenzene[o-]	--	16.8	--	11	--	--	--
Dichlorobenzene[p-]	--	--	--	43	--	--	--
Dichlorobenzidine[3,3'-]	--	--	--	--	--	--	--
Dichlorodifluoromethane	--	--	--	--	--	--	--
Dichloroethane[1,1-]	--	--	--	--	--	--	--
Dichloroethane[1,2-]	--	4540	--	3500	--	190	--
Dichloroethene[1,1-]	--	242	--	78	--	--	--
Dichloroethylene[trans-1,2-]	--	--	--	310	--	--	--
Dichlorophenol[2,4-]	--	83.1	--	18	--	--	--
Dichlorophenol[2,6-]	--	--	--	--	--	--	--
Dichloropropane[1,2-]	--	380	--	--	--	--	--
Dichloropropene[cis-1,3-]	--	7.9	--	--	--	--	--

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Dichloropropene[trans-1,3-]	--	7.9	--	--	--	--	--
Dieldrin	0.0019	--	0.0019	0.005	1.33	0.000026	--
Diethyl O-2-pyrazinyl phosphorothioate[O,O-]	--	--	--	--	--	--	--
Diethyl phthalate	3	--	--	120	--	--	--
Dimethoate	--	--	--	--	--	--	--
Dimethyl phthalate	--	--	--	73	--	--	--
Dimethylbenzidine[3,3'-]	--	--	--	--	--	--	--
Dimethylbenz[a]anthracene[7,12-]	--	--	--	--	--	--	--
Dimethylphenethylamine[alpha,alpha-]	--	--	--	--	--	--	--
Dimethylphenol[2,4-]	--	--	--	--	--	--	--
Dinitrobenzene[m-]	--	--	--	--	--	--	--
Dinitrophenol[2,4-]	150	4.07	--	--	--	--	--
Dinitrotoluene[2,4-]	230	--	--	--	--	--	--
Dinitrotoluene[2,6-]	230	153	--	42	--	--	--
Dinoseb	--	--	--	--	--	--	--
Dioxane[1,4-]	--	--	--	--	--	--	--
Diphenylamine	--	--	--	--	--	--	--

Organi[illegible] in ug/L
Inorgar[illegible] are in mg/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Disulfoton	--	--	--	--	--	--	--
D[2,4-]	--	--	--	--	--	--	--
Endosulfan I	0.056	--	0.056	0.003	0.115	0.031	--
Endosulfan II	0.056	--	0.056	0.003	0.115	0.031	--
Endosulfan sulfate	--	--	--	--	--	--	--
Endrin	0.0023	--	0.0023	0.002	0.101	0.016	--
Endrin aldehyde	--	--	--	--	--	--	--
Ethyl methacrylate	--	--	--	--	--	--	--
Ethyl methane sulfonate	--	--	--	--	--	--	--
Ethylbenzene	--	17.2	--	62	--	68	--
Famphur	--	--	--	--	--	--	--
Fluoranthene	16	--	--	8.9	--	20	--
Fluorene	--	--	--	--	--	--	--
Heptachlor	0.0038	--	0.0038	0.001	0.396	0.00039	--
Heptachlor epoxide	0.0038	--	--	--	--	0.00048	--
Hexachlorobenzene	--	--	--	--	--	0.00024	--
Hexachlorobutadiene	9.3	2.76	--	--	--	--	--

Organics are in ug/L

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Hexachlorocyclopentadiene	5.2	--	--	--	--	--	--
Hexachloroethane	540	3.05	--	--	--	--	--
Hexachlorophene	--	--	--	--	--	--	--
Hexachloropropene	--	--	--	--	--	--	--
Hexanone[2-]	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--
Isobutyl alcohol	--	34800	--	--	--	--	--
Isodrin	--	--	--	--	--	--	--
Isophorone	--	--	--	900	--	--	--
Isosafrole	--	--	--	--	--	--	--
Kepone	--	--	--	--	--	--	--
Lead (Total)	0.001317	0.0378	0.001317	0.00285	0.00417	0.0013	--
Mercury (Total)	0.000012	0.0005	0.000012	0.0002	0.00153	0.0000069	--
Methacrylonitrile	--	--	--	--	--	--	--
Methane[bis(2-chloroethoxy)]	6400	--	--	--	--	--	--
Methapyrilene	--	--	--	--	--	--	--
Methoxychlor	0.03	--	--	0.005	--	--	--

Organi[illegible] in ug/L
Inorgan[illegible] are in mg/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Methyl bromide	6400	--	--	--	--	--	--
Methyl chloride	--	1380	--	--	--	1561	--
Methyl ethyl ketone	--	26000	--	--	--	--	--
Methyl iodide	--	--	--	--	--	--	--
Methyl methacrylate	--	--	--	--	--	--	--
Methyl methanesulfanate	--	--	--	--	--	--	--
Methyl parathion	--	--	--	--	--	--	--
Methyl-2-pentanone[4-]	--	3680	--	--	--	--	--
Methylcholanthrene[3-]	--	--	--	--	--	--	--
Methylene bromide	--	--	--	--	--	--	--
Methylene chloride	6400	1380	--	430	--	45	--
Methylnaphthalene[2-]	--	--	--	--	--	--	--
Naphthalene	620	68	--	44	--	81	--
Naphthoquinone[1,4-]	--	--	--	--	--	--	--
Naphthylamine[1-]	--	--	--	--	--	--	--
Naphthylamine[2-]	--	--	--	--	--	--	--
Nickel (Total)	0.08771	1	0.08771	0.09476	0.03679	0.088	--

Organics are in ug/L

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Nitroaniline[m-]	--	--	--	--	--	--	--
Nitroaniline[o-]	--	--	--	--	--	--	--
Nitroaniline[p-]	--	--	--	--	--	--	--
Nitrobenzene	--	4670	--	740	--	--	--
Nitrophenol[o-]	--	--	--	--	--	--	--
Nitrophenol[p-]	--	--	--	35	--	--	--
Nitroquinoline-1-oxide[4-]	--	--	--	--	--	--	--
Nitrosodiethylamine[N-]	--	--	--	--	--	--	--
Nitrosodimethylamine[N-]	--	--	--	--	--	--	--
Nitrosodiphenylamine[N-]	--	--	--	13	--	--	--
Nitrosomethylethylamine[N-]	--	--	--	--	--	--	--
Nitrosomorpholine[N-]	--	--	--	--	--	--	--
Nitrosopiperidine[N-]	--	--	--	--	--	--	--
Nitrosopyrrolidine[N-]	--	--	--	--	--	--	--
Parathion	0.013	--	0.013	0.008	0.0141	0.013	--
Pentachlorobenzene	50	--	--	--	--	--	--
Pentachloroethane	--	--	--	--	--	--	--

Organics are in ug/L
Inorganics are in mg/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Pentachloronitrobenzene	50	--	--	--	--	--	--
Pentachlorophenol	13	13	5.726	5.233	7.823	5.5	--
Phenacetin	6.3	--	--	--	--	--	--
Phenanthrene	--	3.7	--	--	--	2.1	--
Phenol	2560	100	--	200	--	123	--
Phenylenediamine[p-]	--	--	--	--	--	--	--
Phorate	--	--	--	--	--	--	--
Phthalate[bis(2-ethylhexyl)]	360	--	--	8.4	--	--	--
Picoline[2-]	--	--	--	--	--	--	--
Polychlorinated biphenyls	0.014	--	0.014	0.001	--	0.000029	--
Polychlorinated dibenzo-p-dioxins	--	--	--	--	--	--	--
Polychlorinated dibenzofurans	--	--	--	--	--	--	--
Pronamide	--	--	--	--	--	--	--
Propionitrile	--	--	--	--	--	--	--
Propylamine[N-nitrosodi-n-]	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--
Pyridine	--	--	--	--	--	--	--

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Safrole	--	--	--	--	--	--	--
Selenium (Total)	0.005	1	0.035	0.005	0.00707	0.005	--
Silver (Total)	0.00012	0.005	0.000616	0.00006	0.000885	0.001	--
Silvex	--	--	--	--	--	--	--
Styrene	--	--	--	56	--	--	--
Sulfide	0.0020	--	--	--	--	--	--
Tetrachlorobenzene[1,2,4,5-]	50	--	--	--	--	--	--
Tetrachlorodibenzo-p-dioxin[2,3,7,8-]	--	--	--	--	--	--	--
Tetrachloroethane[1,1,1,2-]	--	--	--	--	--	--	--
Tetrachloroethane[1,1,2,2-]	2400	--	--	360	--	13	--
Tetrachloroethene	--	152	--	73	--	8.9	--
Tetrachlorophenol[2,3,4,6-]	--	--	--	--	--	--	--
Tetraethyl dithiopyrophosphate	--	--	--	--	--	--	--
Thallium (Total)	0.0040	--	--	0.016	--	0.00028	--
Tin (Total)	--	--	--	--	--	--	--
Toluene	5000	646	--	1700	--	253	--
Toluidine[5-nitro-o-]	--	--	--	--	--	--	--

Organ[illegible]re in ug/L

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Toluidine[o-]	--	--	--	--	--	--	--
Toxaphene	0.0002	--	0.0002	0.005	0.001	0.0013	--
Trichlorobenzene[1,2,4-]	50	69.2	--	77	--	--	--
Trichloroethane[1,1,1-]	--	393	--	88	--	263	--
Trichloroethane[1,1,2-]	9400	3540	--	650	--	--	--
Trichloroethylene	21900	940	--	75	--	120	--
Trichlorofluoromethane	6400	--	--	--	--	--	--
Trichlorophenol[2,4,5-]	63	--	--	--	--	--	--
Trichlorophenol[2,4,6-]	970	--	--	2.5	--	2	--
Trichloropropane[1,2,3-]	--	--	--	--	--	--	--
Trichlorphenoxyacetic acid[2,4,5-]	63	--	--	--	--	--	--
Triethyl phosphorothioate[O,O,O-]	--	--	--	--	--	--	--
Trinitrobenzene[Sym-]	--	--	--	--	--	--	--
Vanadium (Total)	--	--	--	--	--	--	--
Vinyl acetate	--	--	--	--	--	--	--
Vinyl chloride	--	--	--	--	--	9.2	--
Xylenes (total)	--	117	--	--	--	166	--

Organics are in ug/L
Inorganics are in mg/L

ALL CRITERIA VALUES FOR SURFACE WATER MEDIUM

Chemical Name	Federal	Illinois	Indiana	Ohio	Wisconsin	Minnesota	Michigan
Zinc (Total)	0.11	1	0.0589	0.05906	0.02757	0.059	--

Orga[illegible] are in ug/L
Inorga[illegible] are in mg/l

REFERENCES FOR SURFACE WATER MEDIUM CRITERIA

Federal: Each federal criterion is either taken or adapted from one of the following sources: (1) 49 FR 115. 1984. Cited in Hazardous Substances Databank (HSDB) Database. January 1995. (2) 50 FR 30784. 1985. Cited in Integrated Risk Information System (IRIS) Database. January 1995. (3) 51 FR 43665. 1986. Cited in IRIS Database. January 1995. (4) 52 FR 6213. 1987. Citied in IRIS Database. January 1995. (5) 53 FR 177. 1988. Cited in IRIS Database. January 1995. (6) 55 FR 19986. 1989. Cited in IRIS Database. January 1995. (7) 55 FR 19986. 1990. Cited in IRIS Database. January 1995. (8) EPA 1988. Ambient Water Quality Criteria. Federal Register. Volume 53. 19028. May 26.

Illinois: Illinois Environmental Protection Agency. 1993. Title 35: Environmental Protection. Subtitle C: Water Pollution. Chapter I: Pollution Control Board. Part 302: Water Quality Standards. Subpart B: General Water Quality Standards. August 1.

Indiana: Indiana Department of Environmental Management. 1993. Title 327: Water Pollution Control Board. Article 2: Water Quality Standards. Section 2-1-6: Minimum Surface Water Quality Standards. November 9.

Ohio: Ohio Environmental Protection Agency. 1993. State of Ohio Water Quality Standards. Ohio Administrative Code. Chapter 3745-1. September 30.

Wisconsin: Wisconsin Department of Natural Resources. 1989. Chapter NR 105: Surface Water Quality Criteria for Toxic Substances. Section NR 105.06: Chronic Toxicity Criteria for Fish and Aquatic Life. February.

Minnesota: Minnesota Pollution Control Agency. 1994. Chapter 7050, Minnesota Pollution Control Agency Water Quality Division, Waters of the State. Section 7050.0220: Specific Standards of Quality and Purity by Associated Use Classes. Subpart 5. April 13.

Michigan: Michigan Department of Natural Resources. 1994. Rule 57 (2) Guideline Levels. Prepared by James Grant, Chief, Great Lakes Environmental Assessment Section, Surface Water Quality Division. January 31.

APPENDIX C-1

ECOLOGICAL DATA QUALITY LEVELS REFERENCE DATABASE USER'S GUIDE

(11 Pages)

ECOLOGICAL DATA QUALITY LEVELS REFERENCE DATABASE USER'S GUIDE

1.0 INTRODUCTION

This user's guide provides an overview of how to install and use the Ecological Data Quality Level (EDQL) Reference Database, Version 3.0. PRC Environmental Management, Inc. (PRC), developed the database for the U.S. Environmental Protection Agency (EPA).

This user's guide is divided into 11 sections, including this introduction. Section 2.0 explains how to install the EDQL Reference Database on the hard drive of a computer. Section 3.0 explains how to run the database after it is installed. Section 4.0 provides an overview of how the database is structured and how to move around in the database. Section 5.0 explains how to use the system menu. Section 6.0 explains how to use the view and print subcategory menus. Section 7.0 explains the functions found at the top right of the screens. Sections 8.0 and 9.0 provide an overview of the type of information found within each category menu. Section 10.0 explains how to use the print menu. Finally, Section 11.0 explains the database's error trap.

2.0 TO INSTALL THE EDQL REFERENCE DATABASE

To install the EDQL Reference Database on a computer, you must create two folders on the computer's hard drive and copy files to those folders. The instructions below explain how to install the database. The instructions are presented in italics when something should be entered into the computer. The database program requires that the files are copied to the EDQL folder and the DATA subfolder on the hard drive. If you need to copy the files to a different location, then the SETMEM.DBF file in the DATA.ZIP file must be modified before running the database. The instructions assume that the hard drive on your computer is the C drive and that the disk is read from the A drive; if your computer system differs, change the drive names in the instructions accordingly.

1. Select your local hard drive (C: is assumed).

2. Create the EDQL folder on the hard drive (*C:\EDQL*).

3. Insert the PROG.ZIP #1 disk into drive A.

4. Using either WinZip or PKUNZIP, extract all PROG.ZIP files from the disk to the EDQL folder on the hard drive. If WinZip or PKUNZIP is not on your hard drive, copy the PKUNZIP.EXE file from the DATA.ZIP disk to the EDQL folder on the hard drive, select the File menu (or the Start menu if using Windows 95), and then select Run (*C:\EDQL\PKUNZIP A:\PROG.ZIP C:\EDQL*).

5. Follow the instructions on the screen for inserting the PROG.ZIP #1 and PROG.ZIP #2 disks.

6. Create the DATA subfolder (*C:\EDQL\DATA*).

7. Insert the DATA.ZIP disk into drive A.

8. Using either WinZip or PKUNZIP, extract all DATA.ZIP files from the disk to the DATA subfolder on the hard drive. If WinZip or PKUNZIP is not on your hard drive, select the File menu (or the Start menu if using Windows 95), and then select Run (*C:\EDQL\PKUNZIP A:\DATA.ZIP C:\EDQL\DATA*).

9. To begin running the EDQL Reference Database, select the File menu (or the Start menu if using Windows 95), and then select Run (*C:\EDQL\EDQL.EXE*).

3.0 TO RUN THE EDQL REFERENCE DATABASE

After the EDQL Reference Database has been installed, follow the instructions presented below each time you want to run the database. The instructions are presented in italics when something should be entered into the computer. The instructions assume that the hard drive on your computer is the C drive and that the disk is read from the A drive; if your computer system differs, change the drive names in the instructions accordingly.

1. Select your local hard drive (C: is assumed).

2. Open the EDQL folder on the hard drive (*C:\EDQL*).

3. Select the File menu (or the Start menu if using Windows 95), and then select Run (*C:\EDQL\EDQL.EXE*).

4.0 HOW THE DATABASE IS STRUCTURED

The EDQL Reference Database is set up so that it can be either mouse-driven (the user moves the mouse around and clicks on functions or options to select them) or menu-driven (the user selects different functions or highlighted options on the screen using the arrow keys and the Enter key or by entering the underlined letters associated with the functions or options shown on the screen).

The database title, version number, contact person, and contact phone number are shown on the introductory screen. To begin using the EDQL Reference Database, use either the mouse or the menu-driven keys to select the "Start" option at the lower right of the introductory screen.

The first screen that appears in the database has pull-down menus along the top. The menus can be accessed by moving the cursor with the mouse or by using the arrow keys to scroll along the top and using the Enter key. When a menu has been selected, a subcategory listed in that menu can be chosen using the mouse, using the arrow key and the Enter key, or by typing in the underlined letter associated with the subcategory. The different menus and subcategories are presented below.

SYSTEM
CHEMICAL SUBSET
REINDEX
CALCULATE
PASSWORD
QUIT

GENERAL
VIEW
PRINT

AIR
VIEW
PRINT

SOIL
VIEW
PRINT

SEDIMENT
VIEW
PRINT

SURFACE [WATER]
VIEW
PRINT

PRINT
PRINT

5.0 SYSTEM MENU

On the System menu, five subcategories exist: Chemical Subset, Reindex, Calculate, Password, and Quit. These subcategories are described below.

The Chemical Subset subcategory allows you to create a customized list of chemicals and then save this list as a subset file for future use. After you have created and saved subset files, you can activate a subset file to access information about a specific chemical, modify a chemical list within a subset file, or delete an entire subset file.

The first screen within the Chemical Subset subcategory has a window on the left that presents all the subset file names, and functions are listed on the right. These functions are described below.

- New - allows you to create a new list of chemicals and then save this list as a subset file
- Select - allows you to activate a subset file
- Edit - allows you to modify a highlighted subset file
- Rename - allows you to change a subset file name
- Delete - allows you to delete a highlighted subset file
- Cancel - allows you to deactivate the subset file being used and return to the first screen listing all the main category menus

To create a new list of chemicals, first use either the mouse or the menu-driven keys (see Section 4.0) to select the New function at the right of the screen. Next, enter a name for the new chemical subset file (up to eight characters in length), and then select the "Ok" option at the bottom of the screen. To return to the first screen listing all the main category menus, use the Escape (Esc) key or click on the "Cancel" option at the bottom of the screen. After entering a subset file name and selecting the "Ok" option, you will see a screen consisting of two windows. The window on top entitled "Chemical List" presents all the chemical names in alphanumeric order and offers three options ("Move," "Remove," and "Clear All") below. The window at the bottom entitled "Subset Members" is blank and offers two options ("Ok" and "Cancel") at the right. To search for a specific chemical, (1) use the mouse to click inside the "Chemical List" window and type the first one or two letters of the name of the chemical of interest, or (2) use the mouse to click on the scroll bar at the right. When you find the chemical name you want, either (1) use the mouse to click on and highlight the chemical name or (2) move the cursor to the chemical name using the arrow keys and select the "Move" option. Selecting the "Move" option will move a chemical name from the "Chemical List" window to the "Subset Members" window at the bottom of the screen. If you want to remove a chemical from a subset file, highlight the name of the chemical inside the "Subset Members" window and then select the "Remove" option. To remove all the chemicals from a subset file, select the "Clear All"

option. After you have selected all the chemicals for your new subset file, select the "Ok" option to save the file. If you do not wish to use your new chemical list immediately after saving the file, then reselect the Chemical Subset subcategory on the System menu and select the "Cancel" option.

To activate a subset file, first use either the mouse or the menu-driven keys (see Section 4.0) to choose the Select function at the right of the screen. To scroll through the list of subset file names, use the mouse or menu-driven keys. When you find the subset file you want, either use the mouse to double-click on the highlighted subset file name or move the cursor to the subset file name and use the Enter key. After you select a chemical subset file, a customized list of chemical names will appear on the screen. The customized list will appear on the View subcategory selection screen (see Section 6.1) of each category menu that you choose until the "Cancel" option is selected. If a subset file is active, the name of the file will appear in the lower, right corner of the View subcategory selection screen; when a subset file is not active, an "All Chemicals" message will be present in the lower, right corner of the screen. Using the functions at the right of the screen, you can access information about a specific chemical (see Sections 8.0 and 9.0), add a chemical to a list, delete a chemical from a list, or delete an entire subset file. When you are finished using a subset file, return to the System menu, select the Chemical Subset subcategory, and then select the "Cancel" option.

If changes are made to any of the EDQL Reference Database files, the Reindex subcategory, the Calculate subcategory, or both should be selected. For example, if records in any of the database files are modified or deleted or if records are added to any of the database files, the Reindex subcategory should be selected. The Reindex subcategory will then properly order the database file records for proper retrieval. Furthermore, if any of the records that have been added or modified relate to database calculations, such as those for toxicity reference values (TRV), uncertainty factors, or body weights, the Calculate subcategory should be selected. The Calculate subcategory will then recalculate all the calculated database fields using the most recent database file records. If error messages (see Section 11.0) repeatedly appear on the screen for one or more chemicals, the database files should be first reindexed and then recalculated.

The Password subcategory is not currently in use. The Quit subcategory is used to exit the database.

6.0 CATEGORY MENUS

Five category menus exist: General, Air, Soil, Sediment, and Surface Water. On each of the category menus, two subcategories exist: the View subcategory is discussed in Section 6.1, and the Print subcategory is discussed in Section 6.2.

6.1 VIEW SUBCATEGORY

The View subcategory is the same for each of the five categories: General. Air, Soil, Sediment, and Surface Water. By selecting the View subcategory, you can choose the chemical for which you want information.

The View subcategory selection screen consists of two windows: except when a chemical subset file is active, the window on the left presents all the chemical names in alphanumeric order, and the window on the right presents the Chemical Abstract Service (CAS) number for each chemical. If a subset file is active, the selected customized list of chemicals will appear on the View subcategory selection screen of each category menu that you choose until the "Cancel" option (see Section 5.0) is selected. In the lower, right corner of the screen, an "All Chemicals" message will be present when a subset file is not being used. If a subset file is active, the subset file name will appear in place of the "All Chemicals" message.

To search for a specific chemical, first select either the "Name" or "CAS No." option at the right of the screen. You can scroll through either the chemical name or the CAS number list using the mouse or the menu-driven keys, or to search for a specific chemical by name or CAS number, just use the mouse to click in or press the "Shift" and "Tab" keys simultaneously to move the cursor in the "Search text" box at the bottom of the screen and type the name or CAS number of the chemical to be located and use the Enter key. You may also search for a specific chemical by using the mouse to click inside the window listing either the chemical names or CAS numbers and then typing the first letter or number of the chemical name or CAS number of interest. When you find the chemical name or CAS number you want, either use the mouse to click on the "Ok" option at the bottom right of the screen, or move the cursor to the chemical name or CAS number and use the Enter key. After you select a chemical name or CAS number, certain information about the chemical will appear on the screen, depending on the category menu chosen (see

Sections 8.0 and 9.0). To return to the first screen, use the Escape (Esc) key or click on the Exit function at the bottom of the screen.

6.2 PRINT SUBCATEGORY

The Print subcategory is the same for the General, Air, Soil, Sediment, and Surface Water categories except that the General Print subcategory menu does not include an "EDQL Report" option (as described below). This is the case because the General chemical screens do not include EDQLs.

The Print subcategory gives you two options: (1) "One without notes" and (2) "EDQL Report." Selecting the "One without notes" option allows you to print all the screen information for one particular chemical without notes (that is, without footnotes, references, equations, notes, or summaries of studies used to derive TRVs) on any of the five category menus. Selecting the "EDQL Report" option prints two reports: the first report presents the EDQLs and method reporting limits (MRL) for all Appendix IX constituents on the menu selected (unless a subset file is active), and the second report presents the chronic criteria for all Appendix IX constituents on the menu selected (unless a subset file is active). When a subset file is active, selecting the "EDQL Report" option prints two reports as described above, but the EDQLs, MRLs, and chronic criteria are presented only for the chemicals listed in the active subset file.

For example, to print general chemical information for acetone, including the chemical name, CAS number, synonyms, and chemical constants, you would open the General menu, select the Print subcategory, select the "One without notes" option, and select "acetone."

7.0 FUNCTIONS

Screens within the subcategories have the functions listed at the top right of the screens. These functions are described below.

- Exit - allows you to return to the first screen with all the main window options
- Next Screen - allows you to move forward to the next screen when more than one screen lists information for a chemical

- Previous Screen - allows you to return to the last screen when more than one screen lists information for a chemical

- New Chemical - allows you to select a new chemical

- New Medium - allows you to return to the first screen and then select a new medium for the same chemical

- Print - allows you to print the current screen; also allows you to print reference, TRV, footnote, or note screens

8.0 GENERAL CATEGORY MENU

If you select the General category menu and view a specific chemical, the following information will appear on the screen:

- Chemical name

- CAS number

- Synonyms

- Medium EDQLs

  - Air EDQL
  - Soil EDQL
  - Sediment EDQL
  - Surface water EDQL

- Chemical Constants

  - Average background level for surface soil for inorganic chemicals only
  - Octanol-water partitioning coefficient (Log K_{ow})
  - Aquatic bioconcentration factor (BCF)
  - Soil to earthworm BCF
  - Soil to plant BCF

References for the different chemical constants can be viewed by selecting the highlighted "Ref" option. To return to the main screen from the reference screen, either use the Escape (Esc) key or use the mouse to click on the Exit function.

9.0 AIR, SOIL, SEDIMENT, AND SURFACE WATER CATEGORY MENUS

If you select the Air, Soil, Sediment, or Surface Water category menu and view a particular chemical, the following information will appear:

- Final medium EDQL
- Medium criteria and receptor-specific EDQLs
- Established chronic criteria (except for air)
- TRVs for different species
- Uncertainty factors
- MRL

You can retrieve additional information by selecting the highlighted options shown on the screen. For example, you can view references by selecting the highlighted "Ref" option. You can also view equations, footnotes, notes, and summaries of studies used to establish the TRVs by selecting the highlighted options. On a highlighted TRV, you can view up to three sequential screens showing study summaries by selecting the "Next Screen" option. Because the number of screens is not indicated on this option, be sure to select the "Next Screen" option until you reach the last screen. At the last screen, choosing the "Next Screen" option will cause a "No further records" message to appear.

10.0 PRINT MENU

The Print menu gives you two options: (1) "Total EDQL Report" and (2) "One chemical all media." Selecting the "Total EDQL Report" option prints two reports: the first report presents the EDQLs and MRLs for all Appendix IX constituents on the Air, Soil, Sediment, and Surface Water category menus (unless a subset file is active); and the second report presents the chronic criteria for all Appendix IX constituents on these four category menus (unless a subset file is active). When a subset file is active, selecting the "Total EDQL Report" option prints two reports as described above, but the EDQLs, MRLs, and chronic criteria are presented only for the chemicals listed in the active subset file. Selecting the "One chemical all media" option allows you to print all the screen information for one particular chemical

without notes (that is, without footnotes, references, equations, notes, or summaries of studies used to derive TRVs) on all five category menus.

11.0 ERROR TRAP

An error trap has been built into the EDQL Reference Database in an attempt to capture any error conditions that might prevent the database from operating smoothly. The error trap message is most likely to appear if the printer is not on line when a printing job has been requested or if an unanticipated series of keystrokes has been entered. The error message will look similar to the following text:

ERROR TRAP

SYSTEM REPORTS ERROR NUMBER XXXX:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

THE PROBLEM WAS CAUSED BY:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CALLED BY THE PROGRAM:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

PRESS 0 AND THEN ENTER TO CONTINUE

If the cause of the problem can be identified as a simple error, you should be able to continue using the database by typing the number "0" and then pressing the Enter key. However, if the cause of the problem cannot be identified or if the error message continues to appear, you will need to quit the system and start again. Once you are back in the system, you should repeat the process that caused the problem, and any error messages that appear should be recorded for further diagnosis of the problem.

If error messages repeatedly appear on the screen for one or more chemicals, the database files should be first reindexed and then recalculated to verify the database's integrity (see Section 5.0). If this does not solve the problem, please contact your computer system manager or an experienced database programmer for assistance.

APPENDIX C-2

ECOLOGICAL DATA QUALITY LEVELS REFERENCE DATABASE DATA DICTIONARY

(13 Pages)

ECOLOGICAL DATA QUALITY LEVELS REFERENCE DATABASE
DATA DICTIONARY

Codes:

- R - Required - Record will not be accessible without a value in this field.
- O - Optional - Completed only if applicable, primarily for references.
- C - Calculated - Field is calculated from values in other fields. The field is updated by running the CALCULATE menu option.
- N - Not currently in use
- K - Key field - Used for index or pointing to another database.

AIR.DBF

Index File: AIR_ID.IDX Key: UPPER (TRIM (CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	chemical abstract service (CAS) number
2	UOM	Character	15		unit of measurement
3	MINK_TRV	Character	16		mink (MK) toxicity reference value (TRV)
4	MINK_REF	Character	5	O,K	pointer to TRV reference
5	MINK_UF1	Character	5		uncertainty factor 1
6	MINK_UF2	Character	5		uncertainty factor 2
7	MINK_UF3	Character	5		uncertainty factor 3
8	MINK_EDQL	Character	16	C	MK ecological data quality level (EDQL) value
9	MINK_EDQLR	Character	5	N	equation pointer
10	MINK_EDQLF	Character	5	O,K	pointer to EDQL footnote
11	BIRD_TRV	Character	16		bird TRV
12	BIRD_REF	Character	5	O,K	pointer to reference
13	BIRD_UF1	Character	5		uncertainty factor 1
14	BIRD_UF2	Character	5		uncertainty factor 2
15	BIRD_UF3	Character	5		uncertainty factor 3
16	BIRD_EDQL	Character	16	C	bird EDQL value
17	BIRD_EDQLR	Character	5	N	equation pointer
18	BIRD_EDQLF	Character	5	O,K	pointer to EDQL footnote

AIR.DBF

Index File: AIR_ID.IDX

Key: UPPER (TRIM (CASNO))

Field	Field Name	Type	Width	Codes	Description
19	FINAL_EDQL	Character	16	C	final EDQL value
20	FINAL_EDQF	Character	5	O,K	final EDQL footnote
21	PRACT_QL	Character	16		method reporting limit (MRL)
22	PRACT_QLR	Character	5	O,K	pointer to MRL reference
23	HHDQL	Character	16	O	human health data quality level (DQL) value

CAS_MAST.DBF

Index File: MAST_ID.IDX

Key: UPPER (TRIM (CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	CHEM	Character	50	O	chemical name
3	SYNONYM1	Character	50	O	other name for chemical
4	SYNONYM2	Character	50	O	other name for chemical
5	SYNONYM3	Character	50	O	other name for chemical
6	GROUP	Character	1	O	chemical group

CASNO.DBF

Index File: CHEM_NAM.IDX

Key: UPPER (TRIM (SYNONYM))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R	CAS number
2	CHEM	Character	50		chemical name
3	SYNONYM	Character	50	R,K	other name for chemical

GENERAL.DBF

Index File: GEN_ID.IDX Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	KOC	Character	16	N	sorption coefficient normalized for organic carbon (K_{oc}) value
3	KOC_REF	Character	5	N	pointer to K_{oc} reference
4	KOW	Character	16	R	log octanol-water partioning coefficient (K_{ow}) value
5	KOW_REF	Character	5	O,K	pointer to log K_{ow} reference
6	AQ_BCF	Character	16		aquatic biocoencentration factor (BCF) value
7	AQ_REF	Character	5	O,K	pointer to BCF reference
8	WORM_BAF	Character	16		soil to earthworm bioaccumulation factor (BAF) value
9	WORM_REF	Character	5	O,K	pointer to worm BAF reference
10	PLNT_BAF	Character	16		soil to plant BAF value
11	PLNT_REF	Character	5	O,K	pointer to plant BAF reference
12	CHEM_CF	Character	16	N	log K_{ow} value for equilibrium partitioning (EQP) equations
13	CHEM_B	Character	16		background concentration for inorganic equation
14	CHEM_REF	Character	5		pointer to background concentration reference
15	INORGANIC	Character	1		Y if inorganic, else blank

RECEPTER.DBF

No index file required for this database.

Field	Field Name	Type	Width	Codes	Description
1	MK_IRPREY	Character	16		MK ingestion rate (IR) of prey per day
2	MK_P_REF	Character	5	N	pointer to IR of prey reference
3	MK_IRH2O	Character	16		MK IR of water per day

RECEPTER.DBF

No index file required for this database.

Field	Field Name	Type	Width	Codes	Description
4	MK_H_REF	Character	5	N	pointer to MK IR of water reference
5	MK_WEIGHT	Character	16		MK body weight
6	MK_WT_REF	Character	5	N	pointer to MK weight reference
7	MK_FI	Character	16		ingestion factor (percent of prey in MK diet) for equation
8	MK_FI_REF	Character	5	N	pointer to ingestion factor reference
9	MK_BCF	Character	16		MK BCF for calculations
10	MK_BCF_REF	Character	5	N	pointer to MK BCF reference
11	KF_IRPREY	Character	16		kingfisher (KF) IR of prey
12	KF_P_REF	Character	5	N	pointer to KF IR of prey reference
13	KF_IRH2O	Character	16		KF IR of water
14	KF_H_REF	Character	5	N	pointer to KF water reference
15	KF_WEIGHT	Character	16		KF body weight
16	KF_WT_REF	Character	5	N	pointer to KF weight reference
17	KF_FI	Character	16		ingestion factor (percent of prey in KF diet) for equation
18	KF_FI_REF	Character	5	N	pointer to KF factor reference
19	KF_BCF	Character	16		KF BCF for calculations
20	KF_BCF_REF	Character	5	N	pointer to KF BCF reference
21	MV_IRSOIL	Character	16		meadow vole (MV) IR of soil
22	MV_S_REF	Character	5	N	pointer to MV IR of soil reference
23	MV_IRPLNT	Character	16		MV IR of plant
24	MV_P_REF	Character	5	N	pointer to MV IR of plant reference
25	MV_WEIGHT	Character	16		MV body weight
26	MV_WT_REF	Character	5	N	pointer to MV weight reference
27	MV_BCF	Character	16		MV BAF for calculations
28	MV_BCF_REF	Character	5	N	pointer to MV BAF reference

RECEPTER.DBF

No index file required for this database.

Field	Field Name	Type	Width	Codes	Description
29	MS_IRPREY	Character	16		masked shrew (MS) IR of prey
30	MS_P_REF	Character	5	N	pointer to MS IR of prey reference
31	MS_IRSOIL	Character	16		MS IR of soil
32	MS_S_REF	Character	5	N	pointer to MS IR of soil reference
33	MS_WEIGHT	Character	16		MS body weight
34	MS_WT_REF	Character	5	N	pointer to MS weight reference
35	MS_BCF	Character	16		MS BAF for calculations
36	MS_BCF_REF	Character	5	N	pointer to MS BAF reference

REF_TEXT.DBF (also holds footnotes)

Index File: REF_TEXT.IDX

Key: PADL(ALLTRIM(REFNO),5,"0")+" "+PADL(ALLTRIM(SEQ),3,"0")

Field	Field Name	Type	Width	Codes	Description
1	REFNO	Character	5	R,K	pointer from other tables
2	SEQ	Character	3	R,K	sequence number of line of text
3	REF_TEXT	Character	65		one line of reference

SEDIMENT.DBF

Index File: SED_ID.IDX

Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	UOM	Character	15		unit of measurement
3	EPA_CRIT	Character	16		U.S. Environmental Protection Agency (EPA) criteria value
4	EPA_REF	Character	5	O,K	pointer to U.S. EPA crit. reference
5	WDNR_CRIT	Character	16		Wisconsin criteria value

SEDIMENT.DBF

Index File: SED_ID.IDX

Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
6	WDNR_REF	Character	5	O,K	pointer to Wisconsin reference
7	ONTAR_CRIT	Character	16		Ontario criteria value
8	ONTAR_REF	Character	5	O,K	pointer to Ontario reference
9	CANAD_CRIT	Character	16		Environment Canada (EC) criteria value
10	CANAD_REF	Character	5	O,K	pointer to EC reference
11	SEDQ_CRIT	Character	16	N	extra line, not used
12	SEDQ_REF	Character	5	N	extra line, not used
13	LCC_VAL	Character	10	C	lowest criteria value
14	EQP_EDQL	Character	16	C	EQP-based EDQL value
15	EQP_EDQLR	Character	5	N	pointer to EQP EDQL formula
16	EQP_EDQLF	Character	5	O,K	pointer to EQP EDQL footnote
17	BCF_EDQL	Character	16	C	BCF adjusted EDQL value
18	BCF_EDQLR	Character	5	N	pointer to BCF formula
19	BCF_EDQLF	Character	5	O,K	pointer to BCF EDQL footnote
20	INVT_TRV	Character	16		invertebrate (INV)TRV
21	INVT_REF	Character	5	O,K	pointer to TRV reference
22	INVT_UF1	Character	5		uncertainty factor 1
23	INVT_UF2	Character	5		uncertainty factor 2
24	INVT_UF3	Character	5		uncertainty factor 3
25	INVT_EDQL	Character	16	C	INV EDQL value
26	INVT_EDQLR	Character	5	N	pointer to EDQL formula
27	INVT_EDQLF	Character	5	O,K	pointer to EDQL footnote
28	FINAL_EDQL	Character	16	C	final EDQL value
29	FINAL_EDQF	Character	5	O,K	final EDQL footnote
30	PRACT_QL	Character	16		MRL

SEDIMENT.DBF

Index File: SED_ID.IDX Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
31	PRACT_QLR	Character	5	O,K	pointer to MRL reference
32	HHDQL	Characer	16	O	DQL value

SETMEM.DBF (program initialization data)

No index file is required for this database.

Field	Field Name	Type	Width	Codes	Description
1	SDEFPATH	Character	2		device driver
2	SPRGPATH	Character	30		program files path name
3	SDBFPATH	Character	30		database files path name
4	SIDXPATH	Character	30		index files path name
5	SFDRIVE	Character	3	N	disk format drive
6	SFCOMMAND	Character	10	N	command for formatting disk
7	SCOMMAND	Character	10	N	command for backup
8	SFNAME1	Character	29	N	directory1 path for backup
9	SFNAME2	Character	29	N	directory2 path for backup
10	SFNAME3	Character	29	N	directory3 path for backup
11	SBDRIVE	Character	3	N	device for backup destination
12	SDTYPE	Character	7	N	disk type (size)
13	SFORMBYTE	Character	7	N	diskette capacity
14	SBLOCK	Character	7	N	blocking factor
15	SPASSWD	Character	10		system password (encrypted)
16	SPRINTER	Character	30	N	printer name
17	SCITY	Character	2	N	city

SOIL.DBF

Index File: SOIL_ID.IDX

Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	UOM	Character	1		unit of measurement code
3	NTHLD_CRIT	Character	16		Netherlands criteria value
4	NTHLD_REF	Character	5	O,K	pointer to Netherlands reference
5	GBR_CRIT	Character	16		Great Britian (GB) criteria value
6	GBR_REF	Character	5	O,K	pointer to GB reference
7	CA_CRIT	Character	16		California criteria value
8	CA_REF	Character	5	O,K	pointer to California reference
9	OR_CRIT	Character	16		Oregon criteria value
10	OR_REF	Character	5	O,K	pointer to Oregon reference
11	QUEBC_CRIT	Character	16		Quebec criteria value
12	QUEBC_REF	Character	5	O,K	pointer to Quebec reference
13	AMEG_CRIT	Character	16		ambient multimedia goal (AMEG) criteria value
14	AMEG_REF	Character	5	O,K	pointer to AMEG reference
15	LCC_VAL	Character	10	C	lowest criteria value
16	PLT_TRV	Character	16		plant TRV
17	PLT_REF	Character	5	O,K	pointer to plant TRV reference
18	PLT_UF1	Character	5		plant uncertainty factor 1
19	PLT_UF2	Character	5		plant uncertainty factor 2
20	PLT_UF3	Character	5		plant uncertainty factor 3
21	PLT_EDQL	Character	16	C	plant EDQL value
22	PLT_EDQLR	Character	5	N	pointer to plant EDQL formula
23	PLT_EDQLF	Character	5	O,K	pointer to plant EDQL footnote
24	INV_TRV	Character	16		INV TRV
25	INV_REF	Character	5	O,K	pointer to INV TRV reference

SOIL.DBF

Index File: SOIL_ID.IDX Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
26	INV_UF1	Character	5		INV uncertainty factor 1
27	INV_UF2	Character	5		INV uncertainty factor 2
28	INV_UF3	Character	5		INV uncertainty factor 3
29	INV_EDQL	Character	16	C	INV EDQL value
30	INV_EDQLR	Character	5	N	pointer to INV EDQL formula
31	INV_EDQLF	Character	5	O,K	pointer to INV EDQL footnote
32	MV_TRV	Character	16		MV TRV
33	MV_REF	Character	5	O,K	pointer to MV reference
34	MV_UF1	Character	5		MV uncertainty factor 1
35	MV_UF2	Character	5		MV uncertainty factor 2
36	MV_UF3	Character	5		MV uncertainty factor 3
37	MV_TRVA	Character	16		MV adjusted TRV (TRVa) value
38	MV_TRVARF	Character	5	N	pointer to MV TRVa formula
39	MV_EDQL	Character	16	O,K	MV EDQL value
40	MV_EDQLR	Character	5	N	pointer to MV EDQL formula
41	MV_EDQLF	Character	5	O,K	pointer to MV EDQL footnote
42	MS_TRV	Character	16		MS TRV
43	MS_REF	Character	5	O,K	pointer to MS TRV reference
44	MS_UF1	Character	5		MS uncertainty factor 1
45	MS_UF2	Character	5		MS uncertainty factor 2
46	MS_UF3	Character	5		MS uncertainty factor 3
47	MS_TRVA	Character	16	C	MS TRVa
48	MS_TRVARF	Character	5	N	pointer to MS TRVa formula
49	MS_EDQL	Character	16	C	MS EDQL value
50	MS_EDQLR	Character	5	N	pointer to MS EDQL formula
51	MS_EDQLF	Character	5	O,K	pointer to MS EDQL footnote

SOIL.DBF

Index File: SOIL_ID.IDX Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
52	FINAL_EDQL	Character	16	C	final EDQL value
53	FINAL_EDQF	Character	5	O,K	final EDQL footnote
54	PRACT_QL	Character	16		MRL
55	PRACT_QLR	Character	5	O,K	pointer to MRL reference
56	HHDQL	Characer	16	O	DQL value

SRFWATER.DBF

Index File: SRF_ID.IDX Key: UPPER(TRIM(CASNO))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	UOM	Character	15		unit of measurement
3	FED_CRIT	Character	16		Federal criteria value
4	FED_REF	Character	5	O,K	pointer to Federal reference
5	IL_CRIT	Character	16		Illinois criteria value
6	IL_REF	Character	5	O,K	pointer to Illinois reference
7	IN_CRIT	Character	16		Indiana criteria value
8	IN_REF	Character	5	O,K	pointer to Indiana reference
9	OH_CRIT	Character	16		Ohio criteria value
10	OH_REF	Character	5	O,K	pointer to Ohio reference
11	WI_CRIT	Character	16		Wisconsin criteria value
12	WI_REF	Character	5	O,K	pointer to Wisconsin reference
13	MN_CRIT	Character	16		Minnesota criteria value
14	MN_REF	Character	5	O,K	pointer to Minnesota reference
15	MI_CRIT	Character	16		Michigan criteria value
16	MI_REF	Character	5	O,K	pointer to Michigan reference
17	LCC_VAL	Character	10	C	lowest chronic criteria value

Field	Field Name	Type	Width	Codes	Description
18	IWQC_VAL	Character	16		interim water quality crtieria (IWQC) value
19	IWQC_REF	Character	5	O,K	pointer to IWQC footnote
20	MINK_TRV	Character	16		MK TRV
21	MINK_REF	Character	5	O,K	pointer to MK TRV reference
22	MINK_UF1	Character	5		MK uncertainty factor 1
23	MINK_UF2	Character	5		MK uncertainty factor 2
24	MINK_UF3	Character	5		MK uncertainty factor 3
25	MINK_TRVA	Character	16	C	MK TRVa
26	MINK_TRVAR	Character	5	N	pointer to TRVa formula
27	MINK_EDQL	Character	16	C	MK EDQL value
28	MINK_EDQLR	Character	5	N	pointer to MK EDQL formula
29	MINK_EDQLF	Character	5	O,K	pointer to MK EDQL footnote
30	KF_TRV	Character	16		Belted KF TRV
31	KF_REF	Character	5	O,K	pointer to KF TRV reference
32	KF_UF1	Character	50		KF uncertainty factor 1
33	KF_UF2	Character	50		KF uncertainty factor 2
34	KF_UF3	Character	50		KF uncertainty factor 3
35	KF_TRVA	Character	16	C	KF TRVa
36	KF_TRVARF	Character	5	N	pointer to KF TRVa formula
37	KF_EDQL	Character	16	C	KF EDQL value
38	KF_EDQLR	Character	5	N	pointer to KF EDQL formula
39	KF_EDQLF	Character	5	O,K	pointer to KF EDQL footnote
40	FINAL_EDQL	Character	16	C	final EDQL value
41	FINAL_EDQF	Character	5	O,K	final EDQL footnote
42	PRACT_QL	Character	16		MRL
43	PRACT_QLR	Character	5	O,K	pointer to MRL reference

Field	Field Name	Type	Width	Codes	Description
44	HHDQL	Characer	16	O	DQL value

SUBSETS.DBF

Index File: SUBSETS.IDX

Key: UPPER(TRIM(SUBSET))

Field	Field Name	Type	Width	Codes	Description
1	SUBSET	Character	9	R, K	Chemical subset filename identifier

TRV.DBF

(Multiple study summaries from this database display under each medium.)

Index File: TRV.IDX

Key: UPPER(TRIM(CASNO))+" "+UPPER(TRIM(SCREEN))+" "+UPPER(TRIM(CLASS))

Field	Field Name	Type	Width	Codes	Description
1	CASNO	Character	15	R,K	CAS number
2	CLASS	Character	30		class of organism
3	ORGANISM	Character	30		name of organism
4	EXP_ROUTE	Character	15		exposure route
5	DURATION1	Character	60		duration and monitored effects
6	DURATION2	Character	60		extra line
7	DURATION3	Character	60		extra line
8	ENDPOINT	Character	15		endpoint
9	VALUE	Character	16		concentration tested
10	UNITS	Character	15		unit of measurement
11	REFNO	Character	5	R,K	sequence number for display
12	EFFECT_REF	Character	5	O,K	pointer to reference
13	SCREEN	Character	4	R,K	medium screen to be displayed on

The following files are temporary working files and should not be modified without appropriate changes to the program. They are temporary extract files used to build screen layouts and reports.

AIR_TEMP.DBF	Used for creating the AIR EDQL & CRITERIA reports
EDQ_TEMP.DBF	Used for creating the EDQL report across media
SED_TEMP.DBF	Used for creating SEDIMENT EDQL & CRITERIA reports
SOIL_TEMP.DBF	Used for creating the SOIL EDQL & CRITERIA reports
SRF_TEMP.DBF	Used for creating the SURFACE WATER EDQL & CRITERIA reports
TRV_TEMP.DBF	Used for creating the TRV popup windows

APPENDIX D

WATER AND SOIL HUMAN HEALTH DATA QUALITY LEVELS, ECOLOGICAL DATA QUALITY LEVELS, AND METHOD REPORTING LIMITS FOR APPENDIX IX CONSTITUENTS

(12 Pages)

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a]

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
83-32-9	Acenaphthene	370	0.0099	10	360,000	10,000	660
208-96-8	Acenaphthylene	--[i]	242	10	--	10,000	660
67-64-1	Acetone	610	122,000	100	2,000,000	10,000,000	100
75-05-8	Acetonitrile	220	3,000	10	390,000	10,000,000	100
98-86-2	Acetophenone	3,700	687.89	10	5,600,000	100,000	--
53-96-3	Acetylaminofluorene[2-]	--	15	20	--	2	--
107-02-8	Acrolein	730	22.5	11[j]	1,300,000	10,000	7
107-13-1	Acrylonitrile	3.7	73	5	130	100	5
309-00-2	Aldrin	0.004	0.000772	0.34	26	40	22.8
107-05-1	Allyl chloride	1,800	230,000	100	3,300,000	100	5
92-67-1	Aminobiphenyl[4-]	--	--	20	--	0.0166	--
62-53-3	Aniline	11	0.44	10	--	100,000	--
120-12-7	Anthracene	1,800	0.029	10	19,000	100	660
7440-36-0	Antimony (Total)	15	0.03	30	31,000	4.5	300
140-57-8	Aramite	27	0.67	10	18,000	1,060	--
7440-38-2	Arsenic (Total)	0.038	0.053	10	320	0.4	100
60-11-7	Azobenzene[p-(dimethylamino)]	--	0.0458	10	--	0.113	--
7440-39-3	Barium (Total)	2,600	--	20	5,300,000	100	200
71-43-2	Benzene	0.39	114	0.09	1,400	10	0.09
56-55-3	Benzo[a]anthracene	0.092	0.0233	0.13	610	100	8.7
50-32-8	Benzo[a]pyrene	0.0092	0.078	0.23	61	20	15.4
205-99-2	Benzo[b]fluoranthene	0.092	0.252	0.18	610	100	12.1

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
191-24-2	Benzo[g,h,i]perylene	--	0.212	0.76	--	1,000	51
207-08-9	Benzo[k]fluoranthene	0.92	0.0056	0.17	6,100	100	11.4
100-51-6	Benzyl alcohol	11,000	281.24	20	20,000,000	1,000,000	1,300
7440-41-7	Beryllium (Total)	0.016	0.0053	2	140	0.1	20
319-84-6	BHC[alpha-]	0.011	0.344	0.35	71	100	23.4
319-85-7	BHC[beta-]	0.037	0.344	0.23	250	100	15.4
319-86-8	BHC[delta-]	--	34	0.24	--	100	16.1
58-89-9	BHC[gamma-]	0.052	0.01	0.25	340	0.8	16.8
75-27-4	Bromodichloromethane	0.18	6,400	0.2	1,400	100	5
75-25-2	Bromoform	0.18	466	2	56,000	80,000	5
101-55-3	Bromophenyl phenyl ether[4-]	--	1.63	10	--	--	660
924-16-3	Butylamine[N-nitrosodi-n-]	0.012	1,000	10	82	4	--
85-68-7	Butylbenzyl phthalate	7,300	3	0.42	13,000,000	10,000,000	660
7440-43-9	Cadmium (Total)	18	0.0000216	1	38,000	0.08	10
75-15-0	Carbon disulfide	21	84.1	1	16,000	0.42	5
56-23-5	Carbon tetrachloride	0.17	5.9	1	470	100	5
57-74-9	Chlordane	0.052	0.000058	0.37	340	100	24.8
106-47-8	Chloroaniline[p-]	150	231.97	20	260,000	9	1,300
108-90-7	Chlorobenzene	39	10	0.03	160,000	50	0.3
510-15-6	Chlorobenzilate	0.25	7	10	1,600	100	--
75-00-3	Chloroethane	710	230,000	1	1,100,000	100	5.2
67-66-3	Chloroform	[illegible]	79	0.2	530	100	[illegible]

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a]

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
83-32-9	Acenaphthene	370	0.0099	10	360,000	10,000	660
208-96-8	Acenaphthylene	--[i]	242	10	--	10,000	660
67-64-1	Acetone	610	122,000	100	2,000,000	10,000,000	100
75-05-8	Acetonitrile	220	3,000	10	390,000	10,000,000	100
98-86-2	Acetophenone	3,700	687.89	10	5,600,000	100,000	--
53-96-3	Acetylaminofluorene[2-]	--	15	20	--	2	--
107-02-8	Acrolein	730	22.5	11[j]	1,300,000	10,000	7
107-13-1	Acrylonitrile	3.7	73	5	130	100	5
309-00-2	Aldrin	0.004	0.000772	0.34	26	40	22.8
107-05-1	Allyl chloride	1,800	230,000	100	3,300,000	100	5
92-67-1	Aminobiphenyl[4-]	--	--	20	--	0.0166	--
62-53-3	Aniline	11	0.44	10	--	100,000	--
120-12-7	Anthracene	1,800	0.029	10	19,000	100	660
7440-36-0	Antimony (Total)	15	0.03	30	31,000	4.5	300
140-57-8	Aramite	27	0.67	10	18,000	1,060	--
7440-38-2	Arsenic (Total)	0.038	0.053	10	320	0.4	100
60-11-7	Azobenzene[p-(dimethylamino)]	--	0.0458	10	--	0.113	--
7440-39-3	Barium (Total)	2,600	--	20	5,300,000	100	200
71-43-2	Benzene	0.39	114	0.09	1,400	10	0.09
56-55-3	Benzo[a]anthracene	0.092	0.0233	0.13	610	100	8.7
50-32-8	Benzo[a]pyrene	0.0092	0.078	0.23	61	20	15.4
205-99-2	Benzo[b]fluoranthene	0.092	0.252	0.18	610	100	12.1

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
191-24-2	Benzo[g,h,i]perylene	--	0.212	0.76	--	1,000	51
207-08-9	Benzo[k]fluoranthene	0.92	0.0056	0.17	6,100	100	11.4
100-51-6	Benzyl alcohol	11,000	281.24	20	20,000,000	1,000,000	1,300
7440-41-7	Beryllium (Total)	0.016	0.0053	2	140	0.1	20
319-84-6	BHC[alpha-]	0.011	0.344	0.35	71	100	23.4
319-85-7	BHC[beta-]	0.037	0.344	0.23	250	100	15.4
319-86-8	BHC[delta-]	--	34	0.24	--	100	16.1
58-89-9	BHC[gamma-]	0.052	0.01	0.25	340	0.8	16.8
75-27-4	Bromodichloromethane	0.18	6,400	0.2	1,400	100	5
75-25-2	Bromoform	0.18	466	2	56,000	80,000	5
101-55-3	Bromophenyl phenyl ether[4-]	--	1.63	10	--	--	660
924-16-3	Butylamine[N-nitrosodi-n-]	0.012	1,000	10	82	4	--
85-68-7	Butylbenzyl phthalate	7,300	3	0.42	13,000,000	10,000,000	660
7440-43-9	Cadmium (Total)	18	0.0000216	1	38,000	0.08	10
75-15-0	Carbon disulfide	21	84.1	1	16,000	0.42	5
56-23-5	Carbon tetrachloride	0.17	5.9	1	470	100	5
57-74-9	Chlordane	0.052	0.000058	0.37	340	100	24.8
106-47-8	Chloroaniline[p-]	150	231.97	20	260,000	9	1,300
108-90-7	Chlorobenzene	39	10	0.03	160,000	50	0.3
510-15-6	Chlorobenzilate	0.25	7	10	1,600	100	--
75-00-3	Chloroethane	710	230,000	1	1,100,000	100	5.2
67-66-3	Chloroform	0.[illegible]	79	0.2	530	100	0[illegible]

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (µg/L)[d,e]	Final EDQL[f] (µg/L)	MRL[g] (µg/L)	DQL (µg/kg)[h,e]	Final EDQL[f] (µg/kg)	MRL[g] (µg/kg)
91-58-7	Chloronaphthalene[2-]	2,900	0.00174	10	5,200,000	0.000165	630
95-57-8	Chlorophenol[2-]	180	0.544	5	330,000	10	660
7005-72-3	Chlorophenyl phenyl ether[4-]	--	--	10	--	--	660
126-99-8	Chloroprene	--	--	5	--	100	5
7440-47-3	Chromium (Total)	180	0.011	10	210,000	0.05	100
218-01-9	Chrysene	9.2	0.0274	1.5	24,000	100	100
7440-48-4	Cobalt (Total)	--	0.005	10	--	10	100
7440-50-8	Copper (Total)	1,400	0.00214	60	2,800,000	2	600
534-52-1	Cresol[4,6-dinitro-o-]	--	2.3	50	--	1,000	--
108-39-4	Cresol[m-]	1,800	--	10	3,300,000	1,000	--
95-48-7	Cresol[o-]	1,800	--	10	3,300,000	1,000	660
106-44-5	Cresol[p-]	180	--	10	330,000	1,000	660
59-50-7	Cresol[p-chloro-m-]	--	2	5	--	60	240
57-12-5	Cyanide	6.2	0.00496	40	380,000	5	--
72-54-8	DDD[4,4'-][k]	0.28	0.00454	0.5	1,900	100	33.5
72-55-9	DDE[4,4'-][k]	0.2	1.13e-10	0.6	1,300	100	38.9
50-29-3	DDT[4,4'-][k]	0.2	0.0000794	0.8	1,300	100	54.3
94-75-7	D[2,4-][k]	370	--	0.2[l]	650,000	100	1.2[m]
84-74-2	Di-n-butyl phthalate	3,700	3	3.3	--	60	221
117-84-0	Di-n-octyl phthalate	730	30	0.5	1,300,000	3,670	32.8
2303-16-4	Diallate	1.1	0.0274	10	7,300	100	--
53-70-3	Dibenz[a,h]anthracene	0.0092	0.0016	0.3	61	100	20.1

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
132-64-9	Dibenzofuran	150	13.58	10	260,000	--	660
96-12-8	Dibromo-3-chloropropane[1,2-]	0.048	11.2	1	320	100	5
124-48-1	Dibromochloromethane	1	6,400	0.3	5,300	100	0.3
106-93-4	Dibromoethane[1,2-]	0.00076	22.5	1	5.1	2	5
110-57-6	Dichloro-2-butene[trans-1,4-]	0.0012	--	1	7.6	100	5
541-73-1	Dichlorobenzene[m-]	--	87	0.2	2,800,000	50	0.2
95-50-1	Dichlorobenzene[o-]	370	11	0.5	2,300,000	50	0.5
106-46-7	Dichlorobenzene[p-]	0.47	43	0.07	7,400	50	0.07
91-94-1	Dichlorobenzidine[3,3'-]	0.15	3	20	990	1,000	1,300
75-71-8	Dichlorodifluoromethane	390	--	1	110,000	100	5
75-34-3	Dichloroethane[1,1-]	810	--	1	840,000	100	5
107-06-2	Dichloroethane[1,2-]	0.12	190	1	440	100	5
75-35-4	Dichloroethene[1,1-]	--	78	--	--	10	--
156-60-5	Dichloroethylene[trans-1,2-]	120	310	1	170,000	100	5
120-83-2	Dichlorophenol[2,4-]	110	18	5	200,000	10	260
87-65-0	Dichlorophenol[2,6-]	--	--	10	--	10	--
78-87-5	Dichloropropane[1,2-]	0.16	380	0.06	680	100	5
10061-01-5	Dichloropropene[cis-1,3-]	0.081	7.9	1	510	--	5
10061-02-6	Dichloropropene[trans-1,3-]	0.081	7.9	1	510	100	5
60-57-1	Dieldrin	0.0042	0.000026	0.44	28	40	29.5
297-97-2	Diethyl O-2-pyrazinyl	--	--	20	--	0.148	--
84-66-2	Diethyl phthalate	29,000	3	2.5	52,000,000	60	168

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
91-58-7	Chloronaphthalene[2-]	2,900	0.00174	10	5,200,000	0.000165	630
95-57-8	Chlorophenol[2-]	180	0.544	5	330,000	10	660
7005-72-3	Chlorophenyl phenyl ether[4-]	--	--	10	--	--	660
126-99-8	Chloroprene	--	--	5	--	100	5
7440-47-3	Chromium (Total)	180	0.011	10	210,000	0.05	100
218-01-9	Chrysene	9.2	0.0274	1.5	24,000	100	100
7440-48-4	Cobalt (Total)	--	0.005	10	--	10	100
7440-50-8	Copper (Total)	1,400	0.00214	60	2,800,000	2	600
534-52-1	Cresol[4,6-dinitro-o-]	--	2.3	50	--	1,000	--
108-39-4	Cresol[m-]	1,800	--	10	3,300,000	1,000	--
95-48-7	Cresol[o-]	1,800	--	10	3,300,000	1,000	660
106-44-5	Cresol[p-]	180	--	10	330,000	1,000	660
59-50-7	Cresol[p-chloro-m-]	--	2	5	--	60	240
57-12-5	Cyanide	6.2	0.00496	40	380,000	5	--
72-54-8	DDD[4,4'-][k]	0.28	0.00454	0.5	1,900	100	33.5
72-55-9	DDE[4,4'-][k]	0.2	1.13e-10	0.6	1,300	100	38.9
50-29-3	DDT[4,4'-][k]	0.2	0.0000794	0.8	1,300	100	54.3
94-75-7	D[2,4-][k]	370	--	0.2[l]	650,000	100	1.2[m]
84-74-2	Di-n-butyl phthalate	3,700	3	3.3	--	60	221
117-84-0	Di-n-octyl phthalate	730	30	0.5	1,300,000	3,670	32.8
2303-16-4	Diallate	1.1	0.0274	10	7,300	100	--
53-70-3	Dibenz[a,h]anthracene	0.0092	0.0016	0.3	61	100	20.1

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
132-64-9	Dibenzofuran	150	13.58	10	260,000	--	660
96-12-8	Dibromo-3-chloropropane[1,2-]	0.048	11.2	1	320	100	5
124-48-1	Dibromochloromethane	1	6,400	0.3	5,300	100	0.3
106-93-4	Dibromoethane[1,2-]	0.00076	22.5	1	5.1	2	5
110-57-6	Dichloro-2-butene[trans-1,4-]	0.0012	--	1	7.6	100	5
541-73-1	Dichlorobenzene[m-]	--	87	0.2	2,800,000	50	0.2
95-50-1	Dichlorobenzene[o-]	370	11	0.5	2,300,000	50	0.5
106-46-7	Dichlorobenzene[p-]	0.47	43	0.07	7,400	50	0.07
91-94-1	Dichlorobenzidine[3,3'-]	0.15	3	20	990	1,000	1,300
75-71-8	Dichlorodifluoromethane	390	--	1	110,000	100	5
75-34-3	Dichloroethane[1,1-]	810	--	1	840,000	100	5
107-06-2	Dichloroethane[1,2-]	0.12	190	1	440	100	5
75-35-4	Dichloroethene[1,1-]	--	78	--	--	10	--
156-60-5	Dichloroethylene[trans-1,2-]	120	310	1	170,000	100	5
120-83-2	Dichlorophenol[2,4-]	110	18	5	200,000	10	260
87-65-0	Dichlorophenol[2,6-]	--	--	10	--	10	--
78-87-5	Dichloropropane[1,2-]	0.16	380	0.06	680	100	5
10061-01-5	Dichloropropene[cis-1,3-]	0.081	7.9	1	510	--	5
10061-02-6	Dichloropropene[trans-1,3-]	0.081	7.9	1	510	100	5
60-57-1	Dieldrin	0.0042	0.000026	0.44	28	40	29.5
297-97-2	Diethyl O-2-pyrazinyl	--	--	20	--	0.148	--
84-66-2	Diethyl phthalate	29,000	3	2.5	52,000,000	60	168

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
60-51-5	Dimethoate	7.3	41.2	2.6	13,000	300	130
131-11-3	Dimethyl phthalate	370,000	73	6.4	>100,000,000	60	429
119-93-7	Dimethylbenzidine[3,3'-]	0.0073	--	10	48	0.909	--
57-97-6	Dimethylbenz[a]anthracene[7,12-]	--	0.0152	10	--	1,000	--
122-09-8	Dimethylphenethylamine[alpha,alpha-]	--	--	10	--	100,000	--
105-67-9	Dimethylphenol[2,4-]	730	5	5	1,300,000	20	660
99-65-0	Dinitrobenzene[m-]	3.7	2.36	0.11	6,500	5	0.25
51-28-5	Dinitrophenol[2,4-]	73	4.07	50	130,000	20	3,300
121-14-2	Dinitrotoluene[2,4-]	72	230	0.02	130,000	100,000	0.25
606-20-2	Dinitrotoluene[2,6-]	37	42	0.1	65,000	1,000	0.26
88-85-7	Dinoseb	37	13.5	1	65,000	0.113	47
123-91-1	Dioxane[1,4-]	1	--	12[j]	14,000	1,000,000	--
122-39-4	Diphenylamine	910	11	10	1,600,000	0.328	--
298-04-4	Disulfoton	1.5	3.62	0.7	2,600	0.056	35
959-98-8	Endosulfan I	1.8	0.003	0.3	3,300	100	20.1
33213-65-9	Endosulfan II	1.8	0.003	0.4	3,300	100	26.8
1031-07-8	Endosulfan sulfate	--	0.0618	0.35	--	100	23.4
72-20-8	Endrin	11	0.00008	0.39	20,000	100	26.1
7421-93-4	Endrin aldehyde	--	0.00394	0.5	--	100	33.5
111-44-4	Ether [bis(2-chloroethyl)]	0.0098	1,140	10	74	100	660

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
62-50-0	Ethyl methane sulfonate	--	--	20	--	--	--
100-41-4	Ethylbenzene	1,300	17.2	0.05	2,900,000	50	0.05
52-85-7	Famphur	--	--	20	--	0.389	--
206-44-0	Fluoranthene	1,500	6	2.1	2,600,000	100	660
86-73-7	Fluorene	240	8	2.1	300,000	10,000	660
76-44-8	Heptachlor	0.015	0.000265	0.4	99	50	26.8
1024-57-3	Heptachlor epoxide	0.0074	0.00048	0.32	49	70	21.4
118-74-1	Hexachlorobenzene	0.042	0.00000023	0.056	280	50	3.8
87-68-3	Hexachlorobutadiene	0.86	0.00559	0.014	5,700	100	0.9
77-47-4	Hexachlorocyclopentadiene	26	2	2.4	450,000	100	161
67-72-1	Hexachloroethane	4.8	3.05	0.016	32,000	300,000	1.1
70-30-4	Hexachlorophene	11	3.05	50	20,000	100	--
1888-71-7	Hexachloropropene	--	20	50	--	100	--
591-78-6	Hexanone[2-]	--	1,710	50	--	102	50
193-39-5	Indeno(1,2,3-cd)pyrene	0.092	0.12	0.43	610	100	29
78-83-1	Isobutyl alcohol	11,000	34,800	50	20,000,000	1,000,000	7[j]
465-73-6	Isodrin	--	0.386	20	--	100	--
78-59-1	Isophorone	71	900	10	470,000	1,120	3,800
120-58-1	Isosafrole	--	--	10	--	38	--
143-50-0	Kepone	0.00037	0.67	20	25	100	--
7439-92-1	Lead (Total)	4	0.0013	10	400,000	10	100
7439-97-6	Mercury (Total)	11	0.00000097	2	23,000	0.002	100

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
60-51-5	Dimethoate	7.3	41.2	2.6	13,000	300	130
131-11-3	Dimethyl phthalate	370,000	73	6.4	>100,000,000	60	429
119-93-7	Dimethylbenzidine[3,3'-]	0.0073	--	10	48	0.909	--
57-97-6	Dimethylbenz[a]anthracene[7,12-]	--	0.0152	10	--	1,000	--
122-09-8	Dimethylphenethylamine[alpha,alpha-]	--	--	10	--	100,000	--
105-67-9	Dimethylphenol[2,4-]	730	5	5	1,300,000	20	660
99-65-0	Dinitrobenzene[m-]	3.7	2.36	0.11	6,500	5	0.25
51-28-5	Dinitrophenol[2,4-]	73	4.07	50	130,000	20	3,300
121-14-2	Dinitrotoluene[2,4-]	72	230	0.02	130,000	100,000	0.25
606-20-2	Dinitrotoluene[2,6-]	37	42	0.1	65,000	1,000	0.26
88-85-7	Dinoseb	37	13.5	1	65,000	0.113	47
123-91-1	Dioxane[1,4-]	1	--	12[j]	14,000	1,000,000	--
122-39-4	Diphenylamine	910	11	10	1,600,000	0.328	--
298-04-4	Disulfoton	1.5	3.62	0.7	2,600	0.056	35
959-98-8	Endosulfan I	1.8	0.003	0.3	3,300	100	20.1
33213-65-9	Endosulfan II	1.8	0.003	0.4	3,300	100	26.8
1031-07-8	Endosulfan sulfate	--	0.0618	0.35	--	100	23.4
72-20-8	Endrin	11	0.00008	0.39	20,000	100	26.1
7421-93-4	Endrin aldehyde	--	0.00394	0.5	--	100	33.5
111-44-4	Ether [bis(2-chloroethyl)]	0.0098	1,140	10	74	100	660

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
62-50-0	Ethyl methane sulfonate	--	--	20	--	--	--
100-41-4	Ethylbenzene	1,300	17.2	0.05	2,900,000	50	0.05
52-85-7	Famphur	--	--	20	--	0.389	--
206-44-0	Fluoranthene	1,500	6	2.1	2,600,000	100	660
86-73-7	Fluorene	240	8	2.1	300,000	10,000	660
76-44-8	Heptachlor	0.015	0.000265	0.4	99	50	26.8
1024-57-3	Heptachlor epoxide	0.0074	0.00048	0.32	49	70	21.4
118-74-1	Hexachlorobenzene	0.042	0.00000023	0.056	280	50	3.8
87-68-3	Hexachlorobutadiene	0.86	0.00559	0.014	5,700	100	0.9
77-47-4	Hexachlorocyclopentadiene	26	2	2.4	450,000	100	161
67-72-1	Hexachloroethane	4.8	3.05	0.016	32,000	300,000	1.1
70-30-4	Hexachlorophene	11	3.05	50	20,000	100	--
1888-71-7	Hexachloropropene	--	20	50	--	100	--
591-78-6	Hexanone[2-]	--	1,710	50	--	102	50
193-39-5	Indeno(1,2,3-cd)pyrene	0.092	0.12	0.43	610	100	29
78-83-1	Isobutyl alcohol	11,000	34,800	50	20,000,000	1,000,000	7[i]
465-73-6	Isodrin	--	0.386	20	--	100	--
78-59-1	Isophorone	71	900	10	470,000	1,120	3,800
120-58-1	Isosafrole	--	--	10	--	38	--
143-50-0	Kepone	0.00037	0.67	20	25	100	--
7439-92-1	Lead (Total)	4	0.0013	10	400,000	10	100
7439-97-6	Mercury (Total)		0.00000097	2	23,000	0.002	[illegible]

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
126-98-7	Methacrylonitrile	1	--	5	1,300	2	100
111-91-1	Methane[bis(2-chloroethoxy)]	--	6,400	10	--	100	660
91-80-5	Methapyrilene	--	--	100	--	77	--
72-43-5	Methoxychlor	180	0.005	0.86	330,000	100	57.6
74-83-9	Methyl bromide	8.7	6,400	1	15,000	400,000	10
74-87-3	Methyl chloride	1.5	1,380	1	2,000	100	0.8
78-93-3	Methyl ethyl ketone	1,900	26,000	10	8,700,000	10,000,000	100
74-88-4	Methyl iodide	--	--	5	--	10	5
80-62-6	Methyl methacrylate	2,900	2,800	2	5,200,000	1,000,000	50
66-27-3	Methyl methanesulfanate	--	--	10	--	35	--
298-00-0	Methyl parathion	9.1	--	0.5	16,000	0.00235	20
108-10-1	Methyl-2-pentanone[4-]	2,900	3,680	5	5,200,000	6,520	50
56-49-5	Methylcholanthrene[3-]	--	0.0045	10	--	1,000	--
74-95-3	Methylene bromide	370	--	1	650,000	508	5
75-09-2	Methylene chloride	4.3	45	1	11,000	100	5
91-57-6	Methylnaphthalene[2-]	--	9	10	--	1,000	660
91-20-3	Naphthalene	240	2	10	800,000	5,000	660
130-15-4	Naphthoquinone[1,4-]	--	0.044	10	--	13	--
134-32-7	Naphthylamine[1-]	--	0.67	10	--	37	--
91-59-8	Naphthylamine[2-]	--	--	10	--	12	--
7440-02-0	Nickel (Total)	730	0.0368	50	1,500,000	0.04	1,500
99-09-2	Nitroaniline[m-]	--	--	33	--	25	2,211

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
88-74-4	Nitroaniline[o-]	2.2	--	10	3,900	294	670
100-01-6	Nitroaniline[p-]	--	--	20	--	177	7,370
98-95-3	Nitrobenzene	18	740	6.4	33,000	100,000	0.26
88-75-5	Nitrophenol[o-]	--	13.5	5	--	20	300
100-02-7	Nitrophenol[p-]	--	35	10	--	20	470
56-57-5	Nitroquinoline-1-oxide[4-]	--	--	40	--	100,000	--
55-18-5	Nitrosodiethylamine[N-]	0.00045	767.94	20	3	0.263	--
62-75-9	Nitrosodimethylamine[N-]	0.0013	--	1.5	8.7	0.00356	--
86-30-6	Nitrosodiphenylamine[N-]	14	13	8.1	91,000	5	660
10595-95-6	Nitrosomethylethylamine[N-]	0.0031	--	10	20	0.0462	--
59-89-2	Nitrosomorpholine[N-]	--	--	10	--	2	--
100-75-4	Nitrosopiperidine[N-]	--	--	20	--	0.185	--
930-55-2	Nitrosopyrrolidine[N-]	0.032	--	40	210	0.349	--
56-38-2	Parathion	220	0.008	10	390,000	0.0316	--
608-93-5	Pentachlorobenzene	29	0.49	10	52,000	50	--
76-01-7	Pentachloroethane	--	56	5	--	100	10
82-68-8	Pentachloronitrobenzene	0.26	13	20	1,700	100	--
87-86-5	Pentachlorophenol	0.56	0.229	0.076[i]	2,500	10	400
62-44-2	Phenacetin	--	6.3	20	--	57	--
85-01-8	Phenanthrene	--	1	10	--	100	660
108-95-2	Phenol	2,200	100	1	39,000,000	20	94
06-50-3	Phenylenediamine[p-]	6,[illegible]	--	10	12,000,000	171	[illegible]

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
126-98-7	Methacrylonitrile	1	--	5	1,300	2	100
111-91-1	Methane[bis(2-chloroethoxy)]	--	6,400	10	--	100	660
91-80-5	Methapyrilene	--	--	100	--	77	--
72-43-5	Methoxychlor	180	0.005	0.86	330,000	100	57.6
74-83-9	Methyl bromide	8.7	6,400	1	15,000	400,000	10
74-87-3	Methyl chloride	1.5	1,380	1	2,000	100	0.8
78-93-3	Methyl ethyl ketone	1,900	26,000	10	8,700,000	10,000,000	100
74-88-4	Methyl iodide	--	--	5	--	10	5
80-62-6	Methyl methacrylate	2,900	2,800	2	5,200,000	1,000,000	50
66-27-3	Methyl methanesulfanate	--	--	10	--	35	--
298-00-0	Methyl parathion	9.1	--	0.5	16,000	0.00235	20
108-10-1	Methyl-2-pentanone[4-]	2,900	3,680	5	5,200,000	6,520	50
56-49-5	Methylcholanthrene[3-]	--	0.0045	10	--	1,000	--
74-95-3	Methylene bromide	370	--	1	650,000	508	5
75-09-2	Methylene chloride	4.3	45	1	11,000	100	5
91-57-6	Methylnaphthalene[2-]	--	9	10	--	1,000	660
91-20-3	Naphthalene	240	2	10	800,000	5,000	660
130-15-4	Naphthoquinone[1,4-]	--	0.044	10	--	13	--
134-32-7	Naphthylamine[1-]	--	0.67	10	--	37	--
91-59-8	Naphthylamine[2-]	--	--	10	--	12	--
7440-02-0	Nickel (Total)	730	0.0368	50	1,500,000	0.04	1,500
99-09-2	Nitroaniline[m-]	--	--	33	--	25	2,211

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
88-74-4	Nitroaniline[o-]	2.2	--	10	3,900	294	670
100-01-6	Nitroaniline[p-]	--	--	20	--	177	7,370
98-95-3	Nitrobenzene	18	740	6.4	33,000	100,000	0.26
88-75-5	Nitrophenol[o-]	--	13.5	5	--	20	300
100-02-7	Nitrophenol[p-]	--	35	10	--	20	470
56-57-5	Nitroquinoline-1-oxide[4-]	--	--	40	--	100,000	--
55-18-5	Nitrosodiethylamine[N-]	0.00045	767.94	20	3	0.263	--
62-75-9	Nitrosodimethylamine[N-]	0.0013	--	1.5	8.7	0.00356	--
86-30-6	Nitrosodiphenylamine[N-]	14	13	8.1	91,000	5	660
10595-95-6	Nitrosomethylethylamine[N-]	0.0031	--	10	20	0.0462	--
59-89-2	Nitrosomorpholine[N-]	--	--	10	--	2	--
100-75-4	Nitrosopiperidine[N-]	--	--	20	--	0.185	--
930-55-2	Nitrosopyrrolidine[N-]	0.032	--	40	210	0.349	--
56-38-2	Parathion	220	0.008	10	390,000	0.0316	--
608-93-5	Pentachlorobenzene	29	0.49	10	52,000	50	--
76-01-7	Pentachloroethane	--	56	5	--	100	10
82-68-8	Pentachloronitrobenzene	0.26	13	20	1,700	100	--
87-86-5	Pentachlorophenol	0.56	0.229	0.076[i]	2,500	10	400
62-44-2	Phenacetin	--	6.3	20	--	57	--
85-01-8	Phenanthrene	--	1	10	--	100	660
108-95-2	Phenol	2,200	100	1	39,000,000	20	94
06-50-3	Phenylenediamine[p-]	6,9	--	10	12,000,000	171	

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
298-02-2	Phorate	7.3	3.62	0.4	13,000	0.00197	20
117-81-7	Phthalate[bis(2-ethylhexyl)]	4.8	3	2.7	32,000	50,000	181
109-06-8	Picoline[2-]	--	3,790	5	--	87	--
1336-36-3	Polychlorinated biphenyls	0.0087	0.000029	5.4	66	50	36.2 to 603
PCDD-S	Polychlorinated dibenzo-p-dioxins	--	7.72e-09	0.01	--	0.000015	--
51207-31-9	Polychlorinated dibenzofurans	--	0.00129	0.01	--	0.000015	--
23950-58-5	Pronamide	2,700	160	10	4,900,000	14	--
107-12-0	Propionitrile	--	6,080	5	--	1	100
621-64-7	Propylamine[N-nitrosodi-n-]	0.0096	--	4.6	63	4	660
129-00-0	Pyrene	1,100	0.3	2.7	2,000,000	100	660
110-86-1	Pyridine	37	2,380	5	65,000	100	--
94-59-7	Safrole	--	40	10	--	0.767	--
7782-49-2	Selenium (Total)	180	0.005	20	380,000	3	200
7440-22-4	Silver (Total)	180	0.00006	70	380,000	20	700
93-72-1	Silvex	290	11	0.75[i]	--	100	0.28[i]
100-42-5	Styrene	1,600	56	1	2,200,000	100	5
18496-25-8	Sulfide	--	0.002	10,000	--	0.0244	--
95-94-3	Tetrachlorobenzene[1,2,4,5-]	11	0.691	10	20,000	50	--
1746-01-6	Tetrachloro-dibenzo-p-dioxin[2,3,7,8-]	0.00000045	0.00000008	0.01	0.0038	0.000015	0.8
630-20-6	Tetrachloroethane[1,1,1,2-]	0.43	90.25	1	4,800	100	5
79-34-5	Tetrachloroethane[1,1,2,2-]	0.055	13	1	900	100	5
127-18-4	Tetrachloroethene	1.1	8.9	0.4	7,000	100	0.4

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
58-90-2	Tetrachlorophenol[2,3,4,6-]	1,100	2	10	2,000,000	10	--
3689-24-5	Tetraethyl dithiopyrophosphate	18	0.386	0.7	33,000	2	35
7440-28-0	Thallium (Total)	2.9	0.00028	10	6,100	700	100
7440-31-5	Tin (Total)	22,000	--	8,000	46,000	20	2,000
108-88-3	Toluene	720	253	1	1,900,000	50	2
99-55-8	Toluidine[5-nitro-o-]	--	--	10	--	70	--
95-53-4	Toluidine[o-]	--	--	10	--	27	--
8001-35-2	Toxaphene	0.061	0.0002	0.86	400	100	57.6
120-82-1	Trichlorobenzene[1,2,4-]	190	8	1	620,000	50	34
71-55-6	Trichloroethane[1,1,1-]	1,300	88	1	3,200,000	100	5
79-00-5	Trichloroethane[1,1,2-]	0.2	650	1	1,400	100	0.2
79-01-6	Trichloroethylene	1.6	75	0.1	7,100	100	0.1
75-69-4	Trichlorofluoromethane	1,300	6,400	0.3	710,000	100	0.3
95-95-4	Trichlorophenol[2,4,5-]	3,700	63	10	6,500,000	10	660
88-06-2	Trichlorophenol[2,4,6-]	6.1	2	5	40,000	10	390
96-18-4	Trichloropropane[1,2,3-]	31	12.11	1	6.6	100	4
93-76-5	Trichlorphenoxyacetic acid[2,4,5-]	370	63	0.8[i]	6,500,000	100	130
126-68-1	Triethyl phosphorothioate[O,O,O-]	--	3	10	--	4	--
99-35-4	Trinitrobenzene[Sym-]	1.8	--	0.26	3,300	7	250
7440-62-2	Vanadium (Total)	260	--	40	540,000	15	--
108-05-4	Vinyl acetate	37,000	248.03	5	65,000,000	352	50
75-01-4	Vinyl chloride	0.[illegible]	9.2	0.2	5.2	30	0.[illegible]

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
298-02-2	Phorate	7.3	3.62	0.4	13,000	0.00197	20
117-81-7	Phthalate[bis(2-ethylhexyl)]	4.8	3	2.7	32,000	50,000	181
109-06-8	Picoline[2-]	--	3,790	5	--	87	--
1336-36-3	Polychlorinated biphenyls	0.0087	0.000029	5.4	66	50	36.2 to 603
PCDD-S	Polychlorinated dibenzo-p-dioxins	--	7.72e-09	0.01	--	0.000015	--
51207-31-9	Polychlorinated dibenzofurans	--	0.00129	0.01	--	0.000015	--
23950-58-5	Pronamide	2,700	160	10	4,900,000	14	--
107-12-0	Propionitrile	--	6,080	5	--	1	100
621-64-7	Propylamine[N-nitrosodi-n-]	0.0096	--	4.6	63	4	660
129-00-0	Pyrene	1,100	0.3	2.7	2,000,000	100	660
110-86-1	Pyridine	37	2,380	5	65,000	100	--
94-59-7	Safrole	--	40	10	--	0.767	--
7782-49-2	Selenium (Total)	180	0.005	20	380,000	3	200
7440-22-4	Silver (Total)	180	0.00006	70	380,000	20	700
93-72-1	Silvex	290	11	0.75[i]	--	100	0.28[i]
100-42-5	Styrene	1,600	56	1	2,200,000	100	5
18496-25-8	Sulfide	--	0.002	10,000	--	0.0244	--
95-94-3	Tetrachlorobenzene[1,2,4,5-]	11	0.691	10	20,000	50	--
1746-01-6	Tetrachloro-dibenzo-p-dioxin[2,3,7,8-]	0.00000045	0.00000008	0.01	0.0038	0.000015	0.8
630-20-6	Tetrachloroethane[1,1,1,2-]	0.43	90.25	1	4,800	100	5
79-34-5	Tetrachloroethane[1,1,2,2-]	0.055	13	1	900	100	5
127-18-4	Tetrachloroethene	1.1	8.9	0.4	7,000	100	0.4

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
58-90-2	Tetrachlorophenol[2,3,4,6-]	1,100	2	10	2,000,000	10	--
3689-24-5	Tetraethyl dithiopyrophosphate	18	0.386	0.7	33,000	2	35
7440-28-0	Thallium (Total)	2.9	0.00028	10	6,100	700	100
7440-31-5	Tin (Total)	22,000	--	8,000	46,000	20	2,000
108-88-3	Toluene	720	253	1	1,900,000	50	2
99-55-8	Toluidine[5-nitro-o-]	--	--	10	--	70	--
95-53-4	Toluidine[o-]	--	--	10	--	27	--
8001-35-2	Toxaphene	0.061	0.0002	0.86	400	100	57.6
120-82-1	Trichlorobenzene[1,2,4-]	190	8	1	620,000	50	34
71-55-6	Trichloroethane[1,1,1-]	1,300	88	1	3,200,000	100	5
79-00-5	Trichloroethane[1,1,2-]	0.2	650	1	1,400	100	0.2
79-01-6	Trichloroethylene	1.6	75	0.1	7,100	100	0.1
75-69-4	Trichlorofluoromethane	1,300	6,400	0.3	710,000	100	0.3
95-95-4	Trichlorophenol[2,4,5-]	3,700	63	10	6,500,000	10	660
88-06-2	Trichlorophenol[2,4,6-]	6.1	2	5	40,000	10	390
96-18-4	Trichloropropane[1,2,3-]	31	12.11	1	6.6	100	4
93-76-5	Trichlorphenoxyacetic acid[2,4,5-]	370	63	0.8[i]	6,500,000	100	130
126-68-1	Triethyl phosphorothioate[O,O,O-]	--	3	10	--	4	--
99-35-4	Trinitrobenzene[Sym-]	1.8	--	0.26	3,300	7	250
7440-62-2	Vanadium (Total)	260	--	40	540,000	15	--
108-05-4	Vinyl acetate	37,000	248.03	5	65,000,000	352	50
75-01-4	Vinyl chloride		9.2	0.2	5.2	30	

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

Chemical Abstract Service No.	Chemical Name	Water[b]			Soil		
		DQL[c] (μg/L)[d,e]	Final EDQL[f] (μg/L)	MRL[g] (μg/L)	DQL (μg/kg)[h,e]	Final EDQL[f] (μg/kg)	MRL[g] (μg/kg)
1330-20-7	Xylenes (total)	1,400	117	0.1	980,000	50	0.1
7440-66-6	Zinc (Total)	11,000	0.0276	20	23,000,000	4	200

Notes:

a Human health data quality levels (DQL) are available only for groundwater and soil. Therefore, only water (surface) and soil ecological data quality levels (EDQL) are presented for comparison purposes. EDQLs and method reporting limits (MRL) for air and sediment are presented in Appendix A.

b "Water" represents groundwater for DQL purposes and represents surface water for EDQL purposes.

c U.S. Environmental Protection Agency (EPA). 1995. Memorandum Regarding Resource Conservation and Recovery Act [RCRA] Corrective Action Guidance, DQLs for RCRA Facility Investigation (RFI) Projects, Update 1. From Karl E. Bremer, Chief, RCRA Permitting Branch. To RCRA Permitting Section Chiefs. DQLs Attached. December 14.

d μg/L = Micrograms per liter

e All DQLs are presented in micrograms except those for inorganics, which are in milligrams.

f EPA. 1996. EDQL Database for Region 5 Office of RCRA. Waste, Pesticides, and Toxics Division.

g MRL is derived from EPA SW 846 methods that may allow detection of the hazardous constituent at a level near or below the DQL in a particular matrix. Each reporting limit is represented by a practical quantitation limit (PQL), which corresponds to the description in footnote 6 of Appendix IX to 40 *Code of Federal Regulations* (CFR) Part 264 unless otherwise noted (EPA 1995).

h μg/kg = Micrograms per kilogram

i -- = The DQL, EDQL, or MRL is not available because toxicological data for the compound is limited or unavailable (EPA 1995).

Water and Soil Human Health Data Quality Levels, Ecological Data Quality Levels, and Method Reporting Limits for Appendix IX Constitutents[a] (Continued)

j MDL = Minimum detection limit, which corresponds to the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and which is determined from analysis of a sample from a given matrix containing the analyte (EPA 1995)

k DDD[4,4'-] = 1,1'-(2,2-dichloroethylidene)bis[4-chlorobenzene]; DDE[4,4'-] = 1,1'-(2,2-dicloroethenylidene)bis[4-chlorobenzene]; DDT[4,4'-] = 1,1'-(2,2,2-trichloroethylidene)bis[4-chlorobenzene]; and D[2,4-] = 2,4-dichlorophenoxyacetic acid (EPA. 1991. 40 CFR Part 264. Appendix IX. July 1.)

l EDL = Estimated detection limit, which is defined as the MDL or the concentration of analyte in a sample yielding a peak in the final extract with a signal-to-noise ratio of about 5, whichever is higher (EPA 1995)

m EIL = Estimated identification limit, which is the minimum amount of analyte that will produce a spectrum that is an acceptable match with a 50-nanogram standard using standard Fourier transform software (EPA. 1986. SW 846 Method 8151. *Test Methods for Evaluating Solid Waste*. Volume 1B. Third Edition. Office of Solid Waste and Emergency Response. Washington, DC. November.)

APPENDIX E

DATABASE REFERENCE LIST

(48 Pages)

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