GROUND WATER
GUIDANCE CONCENTRATIONS

FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER FACILITIES

Bureau of Drinking Water and Ground Water Resources
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INTRODUCTION

In 1986, the Department of Environmental Regulation (DER) published a table listing the current primary and secondary ground water standards and 127 guidance concentrations for parameters lacking a numeric standard. The guidance concentrations were compiled from various public health based data sources to alert DER District office personnel to concentrations of synthetic organics and inorganics in effluent and ground water that warranted further inquiry. The guidance concentrations were to be used as screening tools and interim guidelines for ground water minimum criteria until precise numeric standards could be developed.

This table was updated and printed as a booklet titled, Ground Water Guidance Concentrations in 1989. The table had been expanded to include 220 different guidance concentrations.

This **1993 edition** updates the 1989 document and now lists 267 different guidance concentrations as well as incorporating newly adopted Maximum Contaminant Levels (MCLs). **The primary and secondary MCLs are enforceable standards**. The guidance concentrations are not standards but can be designated as site specific minimum criteria by the Department.

The Integrated Risk Information System (IRIS) and the Health Effects Assessment Summary Tables (HEAST), toxicological databases maintained by the Environmental Protection Agency (EPA), served as the primary (and nearly exclusive) sources for this document. Both sources list the chronic oral reference doses (Oral RfDs) and cancer potency slope factors from which the guidance concentrations are derived. Some parameters are calculated from information provided by the EPA Environmental Criteria and Assessment Office (ECAP) in Cincinnati. Guidance Concentrations listed in the 1989 booklet and not currently found in IRIS or HEAST remain unchanged in this edition.

Practical Quantitation Levels (PQLs) listed in this booklet are an estimate of the lowest concentration routinely quantifiable by most analytical laboratories. Two sources of information were consulted for PQL information; The Department of Environmental Protection (DEP) Chemistry Laboratory, and the Environmental Monitoring Methods Index (EMMI) - an EPA database. PQLs listed in the 1989 booklet and not currently listed by the DEP lab or EMMI remain unchanged in this edition.

For those parameters where the health based guidance concentration is lower than what can reasonably be measured in a laboratory, the PQL has been designated as the guidance concentration. The calculated health based limit is also reported as a reference. As measurement techniques improve and PQLs are lowered the guidance concentration in these cases will also be lowered.

This 1993 edition is organized into five different chapters; Primary Standards, Secondary Standards, Carcinogens, Organoleptics, and Systemic Toxicants. This arrangement reflects the categories regulated by Rule 17-520, Florida Administrative Code, (F.A.C.). These governing regulations are expanded upon at the beginning of each chapter. An alphabetical listing of all the parameters are listed in the index. This booklet has been three-hole punched to allow the user to rearrange the chapters into the sequence which proves most useful.

This booklet will be available as ASCII text file and will be posted to the Ground Water Quality Background Monitoring Electronic Bulletin Board. Access to the bulletin board is described on the final page of this booklet.

We would like to thank Andy Reich with the Department of Health and Rehabilitative Services Environmental Epidemiology section for contributing the Toxicological Perspective text. We would also like to thank Ligia Mora-Applegate with the FDEP Division of Waste Management for her comments and review throughout the preparation of this document.

Requests for asistance in the interpretation and application of this Ground Water Guidance Concentrations booklet should be directed to either Bryan Baker or Jim McNeal with the Bureau of Drinking Water and Ground Water Resources (904/488-3601, SC 278-3601).

GUIDANCE CONCENTRATIONS: A TOXICOLOGICAL PERSPECTIVE

When evaluating the health threat from exposure to environmental contaminants, there are no "magic bullet" media values appropriate in all circumstances. Most documents listing guidance, or action concentrations, do not consider the appropriateness or limitations of the toxicological assumptions and health risk assessment procedures and by necessity must list a generic value. However, there is still a great need for environmental professionals to have at their disposal a reference listing these values, to give a reasonable perspective on the threshold of health concern from contaminants found in ground and drinking water.

There are established methods of assessing risk that are essential in the proper evaluation of potential adverse health impacts. The Agency for Toxic Substances (ASTDR) within the Public Health Service has been instrumental, along with the EPA, in identifying these basic points. These include:

a) the intrinsic toxicity of the compound(s);
b) a susceptible receptor (population at risk - people);
c) an adequate dose; and,
d) a complete exposure pathway.

Chemicals may express a toxic response due to a wide variety of mechanisms and endpoints. Animal studies have identified carcinogenic and non-carcinogenic compounds. Carcinogens have futher been classified as those being genetic and epigenetic in nature. The genetic agents act directly on the DNA or related material and are thought to not have a threshold. This means that at very low doses, even one molecule, a compound of this type may increase the cancer risk. Epigenetic carcinogens act through mechanisms not affecting the genetic material such as by overwhelming cellular repair or augmenting normal hormonal responses. If these epigenetic agents are not present in sufficient quantities to produce the toxic response, the carcinogenic risk factor is zero.

Non-carcinogenic compounds are even more varied in their intrinsic toxicity. Some act directly on cellular functions such as changing the permeability of cell membranes; others affect the normal performance of enzyme systems; still others act to block transport of essential nutrients or other needed metabolic compounds.

In order for the toxic agents to elicit an effect, the exposed animal needs to be susceptible to the agent, i.e.

the physiological characteristic that can be affected needs to be present in the animal. Some animals possess metabolic pathways and enzyme systems that others do not; some metabolic characteristics are present during certain periods in the normal life span of an organism; developmental phase of the fetus also affects the response. The ability for the compound to cause a toxic response is therefore dependent on which species is exposed and at what phase of the life span.

There is an old adage in Toxicology that the dose determines the poison. In order for a certain compound to provoke a toxic response, it needs to be present at a certain minimum concentration, or threshold (adequate dose). Animals, humans included, are not passive organisms, and are subjected to a constant onslaught of these toxic agents, some exceeding the adequate dose. When this occurs, there are a multitude of metabolic and physical mechanisms available to actively protect the organism from toxic agents. These include detoxifying enzyme systems present in many organs of the body including the blood, lungs, and of course, the liver. Physical system responses include cough reflex, chemotactic response of the stomach and esophagus resulting in vomiting, mucocilliary escalator, etc.

The following are assumptions and important points to remember when utilizing the guidance concentrations. These need to be considered when determining the appropriateness of the values in assessing the potential for health impact from exposure to environmental contaminants.

- Users are encouraged to consult with the Toxicology and Hazard Assessment Section of Florida Department of Health and Rehabilitative Services (HRS), at (904) 488-3385, **before utilizing these guidance concentrations for purposes other than initial screening for potential public health threats.**

- The guidance concentrations are based on continuous exposure to a 70 kilogram healthy adult male ingesting 2 liters of water per day.

- The guidance concentrations were developed to set levels that would be below those known or anticipated to produce adverse heatlth effects.

- Some guidance concentrations are based on effects to high risk populations such as infants less than 6 months old (nitrate/nitrite toxicity).

- Intermittent exposures may result in significantly different guidance concentrations.

- The health of the receptor (human) may change the sensitivity to toxic compounds. These include

nutritional deficiencies, life styles factors, age, sex, or pre-existing disease.

- For non-carcinogens, guidance concentrations are based on the assumption of 20% exposure via drinking water and 80% exposure via other routes such as inhalation, ingestion of food residues, dermal uptake.

- Cancer risk is based on lifetime (70 years) exposure.

- Past exposures may have lead to storage of toxic compounds and could be released during metabolic changes such as pregnancy, diet, illness, etc. Additional exposures may result in adverse impacts due to exceedances of threshold level (lead, chlorinated pesticides, chlorinesterase inhibitors).

- Routes of exposure dramatically alter the toxicological impact of certain compounds. Some toxic agents act exclusively through specific routes, some compounds need to be biotransformed for toxic action to be evident.

- Some compounds when mixed could have deleterious effects significantly below the guidance concentrations.

- The intrinsic validity of the guidance concentration varies with the strength of the supporting documentation. When comparing compounds, there maybe significant differences in the quality of the data used to derive the guidance concentrations, including the availability of human epidemiological studies, animal models used, exposure does and duration, pathology reported, interpretation of results, etc.

- Identifying contaminants of concern requires the examination of contaminant concentrations at the site, the quality of environmental sampling data, and the potential for human exposure.

Common abbreviations, definitions, and symbols used in this booklet:

*	PQL derived from Environmental Monitoring Methods Index database.
**	PQL reprinted from 1989 Ground Water Guidance Concentrations document.
A	Human carcinogen
B1	Probable human carcinogen
B2	Probable human carcinogen
C	Possible human carcinogen
CAS #	American Chemical Society's Chemical Abstract Services number
E	Environmental Criteria and Assessment Office - EPA Cincinnati
F	1989 Florida Ground Water Guidance Concentrations booklet
H	Health Affects Assessment Summary Tables (HEAST)
HBL	Health Based Level; the calculated guidance concentration, listed when the guidance concentration is less than the listed PQL.
I	Integrated Risk Information System (IRIS)
MCL	Maximum Contaminant Level
Organoleptic	Taste and odor
Organoleptic Detection Level	Concentration at which taste and odor can be detected, but is less than the PQL.
pCi/L	Picocuries per liter
PQL	Practical Quantitation Levels (PQLs) listed in this booklet are an estimate of the lowest concentration routinely quantifiable by most analytical laboratories. The Practical Quantitation Level can be estimated to be five times the Method Detection Limit.
ug/L	Micrograms per Liter

CHAPTER 1

PRIMARY STANDARDS

Rule 17-520.420(1), F.A.C., Ground Water Classes, Standards, and Exemptions, designates the primary and secondary drinking water standards, found in Rules 17-550.310 and .320, as enforceable ground water standards. This designation is made to ensure and protect the quality of Florida's Class G-I and G-II (<10,000 mg/l Total Dissolved Solids) ground water resources as potential drinking water supplies. Ground water supplies 90% of Florida's drinking water needs. **These are enforceable standards.**

Notes on this chapter:

Fluoride, ethylbenzene, toluene, and xylenes also have associated (and enforceable) secondary standards and are also listed in Chapter 2.

Total trihalomethanes equals the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform).

The MCL for man-made radionuclides in ground water is the average annual concentration of beta particles and photon radioactivity from man-made radionuclides which does not produce a total annual exposure greater than 4 millirem per year.

The MCL for Total Coliform Bacteria in ground water is 4 per 100 milliliters.

The drinking water standard for asbestos does not apply to ground water.

PRIMARY STANDARDS

CAS #	PARAMETER	MCL ug/L	PQL ug/L
A			
15972-60-8	Alachlor	**2**	1.5
7440-36-0	Antimony	**6**	5
7440-38-2	Arsenic	**50**	5
1912-24-9	Atrazine	**3**	0.25
B			
7440-39-3	Barium	**2,000**	2
71-43-2	Benzene	**1**	1
50-32-8	Benzo(a)pyrene	**0.2**	4
7440-41-7	Beryllium	**4**	2
C			
7440-43-9	Cadmium	**5**	0.4
1563-66-2	Carbofuran	**40**	5
56-23-5	Carbon Tetrachloride (Tetrachloromethane)	**3**	1
57-74-9	Chlordane	**2**	0.05
75-01-4	Chloroethylene (Vinyl Chloride)	**1**	1
16065-83-1	Chromium	**100**	50
	Coliforms, Total	**see text**	
57-12-5	Cyanide	**200**	10
D			
94-75-7	2,4-D (2,4-Dichlorophenoxyacetic acid)	**70**	4
75-99-0	Dalapon (2,2-Dichloropropionic acid)	**200**	29*
96-12-8	Dibromochloropropane (DBCP)	**0.2**	0.02
106-93-4	1,2-Dibromoethane (EDB, Ethylene Dibromide)	**0.02**	0.02
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	**600**	4
106-46-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	**75**	4
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	**3**	1
75-35-4	1,1-Dichloroethylene (Vinylidene chloride)	**7**	1
156-59-2	cis-1,2-Dichloroethylene	**70**	4
156-60-5	trans-1,2-Dichloroethylene	**100**	4
75-09-2	Dichloromethane (Methylene chloride)	**5**	1
78-87-5	1,2-Dichloropropane	**5**	0.5
103-23-1	Di(2-ethylhexyl) adipate	**400**	60*
117-81-7	Di(2-ethylhexyl) phthalate	**6**	10
88-85-7	Dinoseb	**7**	60
1746-01-6	Dioxin (2,3,7,8-TCDD)	**3x10-5**	
88-00-7	Diquat	**20**	5
E			
106-93-4	EDB (Ethylene dibromide, 1,2-Dibromoethane)	**0.02**	0.02
145-73-3	Endothall	**100**	30*

PRIMARY STANDARDS

CAS #	PARAMETER	MCL ug/L	PQL ug/L
72-20-8	Endrin	**2**	0.1
100-41-4	Ethylbenzene	**700**	4
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	**3**	1
F			
7782-41-4	Fluoride	**4,000**	100
G			
1071-83-6	Glyphosate (Roundup)	**700**	40
14127-62-9	Gross Alpha	**15 pCi/L**	1.25*
H			
76-44-8	Heptachlor	**0.4**	0.05
1024-57-3	Heptachlor Epoxide	**0.2**	0.1
118-74-1	Hexachlorobenzene (HCB)	**1**	4
58-89-9	gamma-Hexachlorocyclohexane (Lindane)	**0.2**	0.05
77-47-4	Hexachlorocyclopentadiene	**50**	10
L			
7439-92-1	Lead	**15**	2
58-89-9	Lindane (gamma-Hexachlorocyclohexane)	**0.2**	0.05
M			
7439-97-6	Mercury	**2**	0.2
72-43-5	Methoxychlor	**40**	0.4
75-09-2	Methylene chloride (Dichloromethane)	**5**	1
108-90-7	Monochlorobenzene	**100**	
N			
7440-02-0	Nickel	**100**	10
14797-55-8	Nitrate (as N)	**10,000**	60
14797-65-0	Nitrite (as N)	**1,000**	60
	Total Nitrate + Nitrite (as N)	**10,000**	60
O			
23135-22-0	Oxamyl	**200**	5
P			
87-86-5	Pentachlorophenol	**1**	15
127-18-4	Perchloroethylene (Tetrachloroethylene)	**3**	1
1918-02-1	Picloram	**500**	200
1336-36-3	Polychlorinated biphenyl (PCB)	**0.5**	0.5
R			
7440-14-4	Radium	**5 pCi/L**	0.5*

PRIMARY STANDARDS

CAS #	PARAMETER	MCL ug/L	PQL ug/L
1071-83-6	Roundup (Glyphosate)	**700**	40
S			
7782-49-2	Selenium	**50**	5
93-72-1	Silvex (2,4,5-TP)	**50**	4
122-34-9	Simazine	**4**	0.25
7440-23-5	Sodium	**160,000**	200
100-42-5	Styrene (Vinyl benzene)	**100**	50
T			
127-18-4	Tetrachloroethylene (Perchloroethylene)	**3**	1
56-23-5	Tetrachloromethane (Carbon Tetrachloride)	**3**	1
7440-28-0	Thallium	**2**	5
108-88-3	Toluene	**1,000**	4
8001-35-2	Toxaphene	**3**	1
93-72-1	2,4,5-TP (Silvex)	**50**	4
120-82-1	1,2,4-Trichlorobenzene	**70**	4
71-55-6	1,1,1-Trichloroethane	**200**	4
79-00-5	1,1,2-Trichloroethane	**5**	1
79-01-6	Trichloroethylene (Trichloroethene, TCE)	**3**	1
	Trihalomethanes, Total	**100**	
V			
75-01-4	Vinyl Chloride (Chloroethylene)	**1**	1
X			
1330-20-7	Xylenes (total)	**10,000**	4

CHAPTER 2

SECONDARY STANDARDS

Rule 17-520.420(1), F.A.C., Ground Water Classes, Standards, and Exemptions, designates the primary and secondary drinking water standards, found in Rules 17-550.310 and .320, as enforceable ground water standards. This designation is made to ensure and protect the quality of Florida's ground water resources as potential drinking water supplies. Ground water supplies 90% of Florida's drinking water needs. The Secondary Standards relate to the organoleptic or other undesirable properties of ground water. **These are enforceable standards** except as exempted under Rule 17-520.520, F.A.C.

Notes on this chapter:

Fluoride, ethylbenzene, toluene, and xylenes also have public health related primary standards.

The secondary MCL for Color is 15 color units.

The secondary MCL for Foaming Agents is 0.5 mg/L.

The secondary MCL for Odor is 3 (odor theshold number).

The secondary MCL for Total Dissolved Solids is 500 mg/L. This standard may be exceeded if no other MCL is exceeded.

SECONDARY STANDARDS

CAS #	PARAMETER	MCL ug/L	PQL ug/L
7429-90-5	Aluminum	**200**	100
16887-00-6	Chloride	**250,000**	2,000
7440-50-8	Copper	**1,000**	25
100-41-4	Ethylbenzene	**30**	4
7782-41-4	Fluoride	**2,000**	100
7439-89-6	Iron	**300**	10
7439-96-5	Manganese	**50**	10
C-006	pH	**6.5 - 8.5**	
7440-22-4	Silver	**100**	10
14808-79-8	Sulfate	**250,000**	5,000
108-88-3	Toluene	**40**	4
C-010	Total Dissolved Solids (TDS)	**500,000**	50
1330-20-7	Xylenes	**20**	4
7440-66-6	Zinc	**5,000**	10

CHAPTER 3

CARCINOGENS

Rule 17-520.400, F.A.C., Ground Water Classes, Standards, and Exemptions, addresses protective minimum criteria for ground water.

> 17-520.400(1) - All ground water shall at all places and at all times be free from domestic, industrial, agricultural, or other man-induced non-thermal components of discharges in concentrations which, alone or in combination with other substances, or components or discharges (whether thermal or non-thermal):
>
> (b) - Are carcinogenic, mutagenic, teratogenic, or toxic to human beings, unless specific criteria are established for such components in Rule 17-520.420, F.A.C. (see chapters 1 and 2).

This chapter lists guidance concentrations for carcinogens categorized into four classes. **These concentrations are not listed numeric standards** but can be implemented as site specific minimum criteria under Rule 17-520.400(1)(b), F.A.C., through procedures established in Rule 17-520.400(3), F.A.C.

> Class A - Human carcinogen, sufficient evidence of carcinogenicity in humans.
>
> Class B1 - Probable human carcinogen, limited evidence of carcinogenicity in humans.
>
> Class B2 - Probable human carcinogen, sufficient evidence of carcinogenicity in animals, but inadequate or lack of evidence in humans.
>
> Class C - Possible human carcinogen, limited evidence of carcinogenicity in animals and inadequate or lack of human data.

Carcinogens are non-threshold agents, where only zero exposure carries no cancer risk. Since zero exposure is usually impossible or unreasonable to achieve Florida's guidance concentrations for carcinogens in water have been developed corresponding to an upper-bound increased lifetime risk of 1 X 10-6. This is the risk that one person in a population of one million **may** develop cancer during a

lifetime. This number is within the range of lifetime risk levels (10-4 to 10-6) recommended by the EPA.

The guidance concentration is calculated assuming an average body weight of 70 kilograms and an average water consumption of 2 liters per day and uses the cancer potency slope factor found in IRIS or HEAST. The slope factor is projected from a dose-response model for each carcinogen.

The formula for calculation is:

$$\text{ug/L} = \frac{1 \times 10^{-6} \text{ (Lifetime Risk Level)} \times 70 \text{ kg} \times 1000 \text{ ug/mg}}{\text{(slope factor) in (mg/kg/day)}^{-1} \times 2 \text{ L/day}}$$

For those parameters where the health based guidance concentration is lower than what can reasonably be measured in a laboratory, the PQL has been designated as the guidance concentration. The calculated health based limit is reported in the Cancer Class / HBL column for reference purposes. As measurement techniques improve and PQLs are lowered the guidance concentration in these cases will also be lowered.

CARCINOGENS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	CANCER CLASS / HBL ug/L	BASIS
A					
30560-19-1	Acephate	**7.5**	7.5	C / 4	I
5094-66-6	Acifluorfen (Blazer)	**4**	4	1	F
79-06-1	Acrylamide (2-Propeneamide)	**1**	1	B2 / 0.008	I
107-13-1	Acrylonitrile	**8**	8	B1 / 0.06	I
309-00-2	Aldrin	**0.05**	0.05	B2 / 0.002	I
62-53-3	Aniline	**6**	4	B2	I
103-33-3	Azobenzene	**4**	4	B2 / 0.3	I
B					
92-87-5	Benzidine	**250**	250	A / 0.0002	I
56-55-3	Benzo(a)anthracene	**4**	4	B2 / 0.05	E
205-99-2	Benzo(b)fluoranthene	**4**	4	B2 / 0.05	E
207-08-9	Benzo(k)fluoranthene	**4**	4	B2 / 0.5	E
100-44-7	Benzyl Chloride	**0.5**	0.5*	B2 / 0.2	I
319-84-6	BHC (alpha-Hexachlorocyclohexane)	**0.05**	0.05	B2/0.006	I
319-85-7	BHC (beta-Hexachlorocyclohexane)	**0.1**	0.1	C/0.02	I
111-44-4	Bis(chloroethyl) ether (BCEE)	**1.5**	1.5*	B2 / 0.03	I
39638-32-9	Bis(2-chloroisopropyl) ether	**7.5**	7.5	C / 0.5	H
542-88-1	Bis(chloromethyl) ether (Dichloromethyl ether, BCME)	**10**	10**	A / 0.00016	I
5094-66-6	Blazer (Acifluorfen)	**4**	4	1	F
1897-45-6	Bravo (Chlorothalonil)	**3.18**	0.2	B2	H
75-27-4	Bromodichloromethane	**0.6**	0.5*	B2	I
75-25-2	Bromoform	**4**	0.5*	B2	I
C					
2425-06-1	Captafol	**100**	100*	C / 4.1	H
133-06-2	Captan	**250**	250*	B2 / 10	H
86-74-8	Carbazole	**7.5**	7.5	B2 / 1.75	H
510-15-6	Chlorobenzilate	**0.13**	0.1	B2	H

CARCINOGENS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	CANCER CLASS / HBL ug/L	BASIS
106-89-8	1-Chloro-2,3-epoxypropane (Epichlorohydrin)	**3**	0.04*	B2	I
67-66-3	Chloroform	**6**	1	B2	I
74-87-3	Chloromethane (Methyl chloride)	**2.7**	1	C	H
100-00-5	p-Chloronitrobenzene	**250**	250*	B2 / 1.94	H
1897-45-6	Chlorothalonil (Bravo)	**3.18**	0.2	B2	H
218-01-9	Chrysene	**5**	4	B2	E
D					
72-54-8	DDD (p,p'-Dichlorodiphenyl dichloroethane)	**0.1**	0.05	B2	I
72-55-9	DDE (p,p'-Dichlorodiphenyl dichloroethylene)	**0.1**	0.1	B2	I
50-29-3	DDT (p,p'-Dichlorodiphenyl trichloroethane)	**0.1**	0.1	B2	I
2303-16-4	Diallate	**0.57**	0.025*	B2	H
53-70-3	Dibenzo(a,h)anthracene	**7.5**	7.5	B2 / 0.005	E
124-48-1	Dibromochloromethane	**1**	1	C / 0.4	I
91-94-1	3,3'-Dichlorobenzidine	**7.5**	7.5	B2 / 0.08	I
542-88-1	Dichloromethyl ether [Bis(chloromethyl) ether, BCME]	**10**	10**	A / 0.00016	I
542-75-6	1,3-Dichloropropene (DCP, Telone)	**1**	1	B2 / 0.19	H
62-73-7	Dichlorvos	**0.1**	0.02*	B2	I
60-57-1	Dieldrin	**0.1**	0.1	B2 / 0.002	I
56-53-1	Diethylstilbesterol	**100**	100*	A / 7E-6	H
119-90-4	3,3'-Dimethoxybenzidine	**250**	250*	B2 / 2.5	H
119-93-7	3,3'-Dimethylbenzidine	**250**	250	B2 / 0.004	H
	Dinitrotoluene mixture 2,4- + 2,6-	**0.2**	0.2	B2 / 0.05	I
123-91-1	1,4-Dioxane	**5**	5*	B2 / 3	I
1746-01-6	Dioxin (2,3,7,8-TCDD)	**0.000003**	0.000003	B2/2E-7	H
122-66-7	1,2-Diphenylhydrazine	**10**	10	B2 / 0.05	I
E					
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	**3**	0.04*	B2	I
75-21-8	Ethylene oxide (1,2-Epoxyethane)	**10**	10**	B2 / 0.03	H

CARCINOGENS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	CANCER CLASS / HBL ug/L	BASIS
96-45-7	Ethylene thiourea (2-Imadazoli-dinethione)	**15**	15	B2 / 0.06	H
H					
87-68-3	Hexachlorobutadiene	**15**	15	C / 0.5	I
319-84-6	alpha-Hexachlorocyclohexane (BHC)	**0.05**	0.05	B2/0.006	I
319-85-7	beta-Hexachlorocyclohexane (BHC)	**0.1**	0.1	C / 0.02	I
19408-74-3	Hexachlorodibenzo-p-dioxin	**0.00025**	0.00025*	B2 / 6E-6	I
67-72-1	Hexachloroethane	**10**	10	C / 3.0	I
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	**10**	10*	C / 0.3	I
I					
96-45-7	2-Imadazoli-dinethione (Ethylene thiourea)	**15**	15	B2/0.06	H
193-39-5	Indeno(1,2,3-cd)pyrene	**7.5**	7.5	B2 / 0.05	E
78-59-1	Isophorone	**40**	4	C	I
M					
99-59-2	2-Methoxy-5-nitroaniline	**50**	50*	B2 / 0.76	H
95-53-4	2-Methylaniline (o-Toluidine)	**50**	50*	B2 / 0.15	H
74-87-3	Methyl chloride (Chloromethane)	**2.7**	1	C	H
101-14-4	4,4'-Methylene-bis(2-chloroaniline)	**50**	50*	B2 / 0.27	H
60-34-4	Methyl hydrazine	**10**	10**	0.03	H
2385-85-5	Mirex	**0.1**	0.1	B2 / 0.02	H
N					
55-18-5	n-Nitrosodiethylamine	**4**	4	B2 / 0.0002	I
62-75-9	n-Nitrosodimethylamine	**7.5**	7.5	B2 / 0.0007	I
924-16-3	n-Nitroso-di-n-butylamine	**4**	4	B2 / 0.006	I
621-64-7	n-Nitrosodi-n-propylamine	**4**	4	B2 / 0.005	I
86-30-6	N-Nitrosodiphenylamine	**7**	4	B2	I
10595-95-6	n-Nitroso-n-methylethylamine	**7.5**	7.5	B2 / 0.002	I
930-55-2	n-Nitrosopyrrolidine	**4**	4	B2 / 0.02	I

CARCINOGENS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	CANCER CLASS / HBL ug/L	BASIS
P					
82-68-8	Pentachloronitrobenzene	**15**	15	C / 0.13	H
90-43-7	2-Phenylphenol	**18**	0.05*	C	H
79-06-1	2-Propeneamide (Acrylamide)	**1**	1	B2 / 0.008	I
75-56-9	Propylene oxide	**5,000**	5,000*	B2 / 0.1	I
R					
121-82-4	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	**10**	10*	C / 0.3	I
T					
1746-01-6	2,3,7,8-TCDD (Dioxin)	**0.000003**	0.000003*	B2 / 2E-7	H
542-75-6	Telone (DCP, 1,3-Dichloropropene)	**1**	1	B2 / 0.19	H
630-20-6	1,1,1,2-Tetrachloroethane	**1**	0.25	C	I
79-34-5	1,1,2,2-Tetrachloroethane	**0.2**	0.05	C	I
95-80-7	Toluene-2,4-diamine	**100**	100*	B2 / 0.01	H
95-53-4	o-Toluidine (2-Methylaniline)	**50**	50*	B2/0.15	H
106-49-0	p-Toluidine	**150**	150*	C / 0.18	H
88-06-2	2,4,6-Trichlorophenol	**10**	10	B2 / 3	I
1582-09-8	Trifluralin	**5**	0.1	C	I
512-56-1	Trimethyl phosphate	**50**	50*	B2 / 0.95	H
118-96-7	2,4,6-Trinitrotoluene	**10**	10*	C / 1	I

CHAPTER 4

ORGANOLEPTICS

Rule 17-520.400, F.A.C., Ground Water Classes, Standards, and Exemptions, addresses protective minimum criteria for ground water.

> 17-520.400(1) - All ground water shall at all places and at all times be free from domestic, industrial, agricultural, or other man-induced non-thermal components of discharges in concentrations which, alone or in combination with other substances, or components or discharges (whether thermal or non-thermal):
>
> (e) - Create or constitute a nuisance; or
>
> (f) - Impair the reasonable and beneficial use of adjacent waters.

This chapter lists guidance concentrations for parameters where organoleptic (taste and odor) and other deleterious thresholds are lower, sometimes significantly, than a health based guidance concentration. In these cases public health is not the only issue, but impairment of the use of the resource is the main concern. **These concentrations are not listed numeric standards** but can be designated as site specific minimum criteria by the Department.

For those parameters where the organoleptic threshold is lower than what can reasonably be measured in a laboratory, the PQL has been designated as the guidance concentration. The concentration at which the organoleptic threshold is exceeded is reported in the Detection Level column. As measurement techniques improve and PQLs are lowered the guidance concentration in these cases will also be lowered.

ORGANOLEPTICS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	ORGANOLEPTIC DETECTION LEVEL ug/L
83-32-9	Acenaphthene	**20**	4	
107-02-8	Acrolein (Propenal)	**110**	20	
92-52-4	1,1-Biphenyl	**0.5**	0.2*	
123-86-4	n-Butyl acetate	**2,500**	2,500*	43
108-95-2	Carbolic acid (Phenol)	**10**	4	
59-50-7	4-chloro-3-methyl phenol	**3,000**	4	
108-43-0	3-Chlorophenol	**10**	10	0.1
106-48-9	4-Chlorophenol	**5.5**	5.5*	0.1
76-06-2	Chloropicrin	**7.3**	0.02	
98-82-8	Cumene (Isopropyl benzene)	**0.8**	0.25*	
541-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	**10**	4	
576-24-9	2,3-Dichlorophenol	**10**	10	0.04
120-83-2	2,4-Dichlorophenol	**4**	4	0.3
583-78-8	2,5-Dichlorophenol	**10**	10	0.5
87-65-0	2,6-Dichlorophenol	**4**	4	0.2
95-77-2	3,4-Dichlorophenol	**10**	10	0.3
105-67-9	2,4-Dimethyl phenol (m-Xylenol)	**400**	15	
140-88-5	Ethyl acrylate	**5,000**	5,000*	0.4
60-29-7	Ethyl ether	**750**	250*	
50-00-0	Formaldehyde	**600**	15	
110-54-3	n-Hexane	**10**	10**	6.4
98-82-8	Isopropyl benzene (Cumene)	**0.8**	0.25*	
79-20-9	Methyl acetate	**5,000**	5,000*	3,000
80-62-6	Methyl methacrylate	**25**	25*	
1634-04-4	MTBE (Methyl tertiary-butyl ether)	**50**	10	
91-20-3	Napthalene	**6.8**	4	
108-95-2	Phenol (Carbolic acid)	**10**	4	
107-02-8	Propenal (Acrolein)	**110**	20	

ORGANOLEPTICS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/L	ORGANOLEPTIC DETECTION LEVEL ug/L
95-95-4	2,4,5-Trichlorophenol	**4**	4	1
	Trimethyl benzenes	**10**	10**	0.24
108-05-4	Vinyl acetate	**250**	250*	88
105-67-9	m-Xylenol (2,4-Dimethyl phenol)	**400**	15	

CHAPTER FIVE

SYSTEMIC TOXICANTS

Rule 17-520.400, F.A.C., Ground Water Classes, Standards, and Exemptions, addresses protective minimum criteria for ground water.

> 17-520.400(1) - All ground water shall at all places and at all times be free from domestic, industrial, agricultural, or other man-induced non-thermal components of discharges in concentrations which, alone or in combination with other substances, or components or discharges (whether thermal or non-thermal):
>
> (d) - Pose a serious danger to the public health, safety, or welfare.

This chapter lists guidance concentrations for parameters where an appreciable risk for deleterious effects exists to a human population with daily exposure. **These concentrations are not listed numeric standards** but can be designated as site specific minimum criteria by the Department.

Guidance concentrations for systemic toxicants in water have been derived similarly to the EPA Drinking Water Lifetime Health Advisory Level (HAL) for theshold contaminants. The guidance concentration assumes an average body weight of 70 kilograms, and an average water consumption of 2 liters per day, and is calculated using the chronic oral reference dose found in IRIS or HEAST. The chronic oral reference dose is a provisional estimate of the daily exposure to the human population that is likely to be without appreciable risk of deleterious effects during a lifetime. The calculation uses a 20% Relative Source Contribution factor which adjusts for the likelihood that exposure to the chemical also comes from non-drinking water sources such as food or air. In the absence of chemical specific data it is assumed that 20% of exposure comes from drinking water.

The formula for calculation is:

$$\text{ug/L} = \frac{\text{RfD (mg/kg/day) x 70 kg x 20\% x 1000 ug/mg}}{\text{2 L/day}}$$

For those parameters where the health based guidance concentration is lower than what can reasonably be measured in a laboratory, the PQL has been designated as the guidance concentration. The calculated health based limit is reported in the HBL column for reference purposes. As measurement techniques improve and PQLs are lowered the guidance concentration in these cases will also be lowered.

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
A						
208-96-8		Acenaphthylene	**10**	4	F	
67-64-1		Acetone	**700**	100	I	
75-05-8		Acetonitrile	**500**	500*	I	42
98-86-2		Acetophenone	**700**	4	I	
116-06-3		Aldicarb (Temik)	**7**	5	I	
1646-88-4		Aldicarb sulfone	**7**	5	F	
1646-87-3		Aldicarb sulfoxide	**10**	10	F	
107-18-6		Allyl alcohol	**250**	250*	I	35
834-12-8		Ametryn	**63**	7.5	I	
120-12-7		Anthracene	**2,100**	4	I	
B						
114-26-1		Baygon (Propoxur)	**28**	10	I	
17804-35-2		Benomyl	**350**	120	I	
25057-89-0		Bentazon	**17.5**	4	I	
100-52-7		Benzaldehyde	**700**	50*	I	
191-24-2		Benzo(g,h,i)perylene	**10**	7.5	F	
65-85-0		Benzoic acid	**28,000**	250*	I	
100-51-6		Benzyl alcohol	**2,100**	7.5	H	
319-86-8		BHC (delta-Hexachlorocyclohexane)	**0.05**	0.05	F	
141-66-2		Bidrin	**1**	1*	I	0.7
111-91-1		Bis (2-chloroethoxy) methane	**10**	4	F	
80-05-7		Bisphenol A	**350**	200*	I	
7440-42-8		Boron (and Borates)	**630**	500*	I	
314-40-9		Bromacil	**90**	45	F	

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
101-55-3		p-Bromodiphenyl ether	**10**	4	F	
74-83-9		Bromomethane (Methyl bromide)	**10**	4	I	
1689-84-5		Bromoxynil	**140**	50*	I	
71-36-3		n-Butanol (1-Butanol)	**700**	500*	I	
78-93-3		2-Butanone (Methyl ethyl ketone)	**4,200**	100	I	
2008-41-5		Butylate	**350**	7.5	I	
85-68-7		Butyl benzyl phthalate	**1,400**	850	I	
85-70-1		Butylphthalyl butylglycolate	**7,000**	10**	I	
C						
63-25-2		Carbaryl (Sevin)	**700**	10	I	
75-15-0		Carbon disulfide	**700**	5	I	
5234-68-4		Carboxin	**700**	10**	I	
75-69-4		CFC 11 (Trichlorofluoromethane)	**2,100**	4	I	
75-71-8		CFC 12 (Dichlorodifluoromethane)	**1400**	25*	I	
133-90-4		Chloramben	**105**	10**	I	
506-77-4		Chlorine cyanide	**350**	25*	I	
79-11-8		Chloroacetic acid	**14**	0.25*	H	
106-47-8		p-Chloroaniline	**28**	4	I	
75-00-3		Chloroethane (Ethyl chloride)	**140**	4	E	
110-75-8		2-Chloroethyl vinyl ether (Vinyl 2-chloroethyl ether)	**1**	1	F	
94-74-6		4-Chloro-2-methylphenoxy acetic acid (MCPA)	**1,000**	1,000**	F	4
91-58-7		2-Chloronaphthalene	**560**	4	I	
95-57-8		2-Chlorophenol	**35**	4	I	
7005-72-3		4-Chlorophenylphenyl ether	**10**	4	F	
95-49-8		o-Chlorotoluene	**140**	4	I	
2921-88-2		Chlorpyrifos	**21**	15	I	
5598-13-0		Chlorpyriphos methyl	**70**	15	H	

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
108-39-4		m-Cresol (3-Methylphenol)	**350**	4	I	
95-48-7		o-Cresol (2-Methylphenol)	**350**	4	I	
106-44-5		p-Cresol (4-Methylphenol)	**35**	4	H	
21725-46-2		Cyanazine	**14**	0.5	H	
460-19-5		Cyanogen	**10,000**	10,000*	I	280
108-94-1		Cyclohexanone	**35,000**	5,000*	I	
108-91-8		Cyclohexylamine	**5,000**	5,000*	I	1,400
52315-07-8		Cypermethrin	**70**	7	I	
D						
1861-32-1		Dacthal (DCPA)	**3,500**	1	I	
333-41-5		Diazinon	**6.3**	0.25	H	
84-74-2		Dibutyl phthalate (Di-n-butyl phthalate)	**700**	13	I	
1918-00-9		Dicamba	**210**	200	I	
75-71-8		Dichlorodifluoromethane (CFC 12)	**1400**	25*	I	
75-34-3		1,1-Dichloroethane	**700**	4	H	
84-66-2		Diethyl phthalate	**5,600**	13	I	
60-51-5		Dimethoate	**5**	5	I	1.4
70-38-2		Dimethrin	**2,000**	10**	F	
121-69-7		N-N-Dimethylaniline	**12,500**	12,500*	I	14
68-12-2		N-N-Dimethylformamide	**700**	50*	H	
131-11-3		Dimethyl phthalate	**70,000**	850	H	
84-74-2		Di-n-butyl phthalate (Dibutyl phthalate)	**700**	13	I	
99-65-0		m-Dinitrobenzene (3-Dinitrobenzene)	**50**	50*	I	0.7
528-29-0		o-Dinitrobenzene (2-Dinitrobenzene)	**200**	200*	H	2.8
100-25-4		p-Dinitrobenzene (4-Dinitrobenzene)	**50**	50*	H	2.8
131-89-5		4,6-Dinitro-o-cyclohexyl phenol	**500**	500*	I	14

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
51-28-5		2,4-Dinitrophenol	**30**	30	I	14
117-84-0		Di-n-octyl phthalate	**140**	4	H	
957-51-7		Diphenamid	**210**	10**	I	
122-39-4		Diphenylamine	**175**	4	I	
298-04-4		Disulfoton	**0.5**	0.5	I	0.28
330-54-1		Diuron	**14**	13	I	
E						
115-29-7		Endosulfan	**0.35**	0.05	H	
1031-07-8		Endosulfan sulfate	**0.3**	0.1	F	
7421-93-4		Endrin aldehyde	**0.1**	0.1	F	
563-12-2		Ethion	**3.5**	0.25	I	
110-80-5		2-Ethoxyethanol	**25,000**	25,000*	H	2,800
75-00-3		Ethyl chloride (Chloroethane)	**140**	4	E	
107-15-3		Ethylene diamine	**10,000**	10,000*	H	140
107-21-1		Ethylene glycol	**14,000**	5,000*	I	
97-63-2		Ethyl methacrylate	**630**	250*	H	
84-72-0		Ethylphthalyl ethylglycolate	**21,000**	10**	I	
2104-64-5		Ethyl p-nitrophenyl phenylphosphorothioate (EPN)	**0.2**	0.2*	I	0.07
F						
22224-92-6		Fenamiphos	**1.75**	1.5	I	
2164-17-2		Fluometuron	**91**	13	I	
206-44-0		Fluoranthene (Idryl)	**280**	4	I	
86-73-7		Fluorene	**280**	4	I	
944-22-9		Fonofos	**14**	7.5	I	

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
64-18-6		Formic acid	**14,000**	5,000*	H	
H						
319-86-8		delta-Hexachlorocyclohexane (BHC)	**0.05**	0.05	F	
70-30-4		Hexachlorophene	**6**	6*	I	2.1
51235-04-2		Hexazinone (Velpar)	**231**	30	I	
74-90-8		Hydrogen cyanide	**10,000**	10,000*	I	140
123-31-9		Hydroquinone	**280**	125*	H	
I						
206-44-0		Idryl (Fluoranthene)	**280**	4	I	
36734-19-7		Iprodione	**280**	75	I	
78-83-1		Isobutyl alcohol	**2,100**	500*	I	
33820-53-0		Isopropalin	**105**	12.5*	I	
L						
330-55-2		Linuron	**14**	13	I	
M						
121-75-5		Malathion	**140**	15	I	
12427-38-2		Maneb	**75**	75*	I	35
94-74-6		MCPA (4-Chloro-2-methylphenoxy acetic acid)	**1,000**	1,000**	F	4
57837-19-1		Metalaxyl	**420**	90	I	
126-98-7		Methacrylonitrile	**50**	50*	I	0.7
10265-92-6		Methamidophos	**5**	5	I	0.35
67-56-1		Methanol	**5,000**	5,000*	I	3,500

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
16752-77-5		Methomyl	**175**	10	I	
74-83-9		Methyl bromide (Bromomethane)	**10**	4	F	
78-93-3		Methyl ethyl ketone (2-Butanone)	**4,200**	100	I	
108-10-1		Methyl isobutyl ketone (4-Methyl-2-pentanone)	**350**	10	H	
298-00-0		Methyl parathion	**10**	10**	I	1.75
95-48-7		2-Methylphenol (o-Cresol)	**350**	4	I	
108-39-4		3-Methylphenol (m-Cresol)	**350**	4	I	
106-44-5		4-Methylphenol (p-Cresol)	**35**	4	I	
51218-45-2		Metolachlor	**1,050**	45	I	
21087-64-9		Metribuzin	**175**	30	I	
7439-98-7		Molybdenum	**35**	5	I	
N						
300-76-5		Naled	**14**	1.5	I	
10102-43-9		Nitric oxide	**10,000**	10,000*	I	700
88-74-4		o-Nitroaniline (2-Nitroaniline)	**7.5**	7.5	H	0.42
98-95-3		Nitrobenzene	**9.5**	9.5*	I	3.5
10102-44-0		Nitrogen dioxide	**7,000**	2,500*	I	
88-75-5		o-Nitrophenol (2-Nitrophenol)	**20**	7.5	F	
100-02-7		p-Nitrophenol (4-Nitrophenol)	**15**	15	F	10
27314-13-2		Norflurazon	**280**	45	I	
O						
152-16-9		Octomethylpyrophosphoramide	**1,000**	1,000*	H	14
19044-88-3		Oryzalin	**350**	0.8	I	
19666-30-9		Oxadiazon	**35**	3.3	I	

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
P						
1910-42-5		Paraquat	**31.5**	5	I	
56-38-2		Parathion	**42**	15	H	
40487-42-1		Pendimethalin	**280**	200	I	
608-93-5		Pentachlorobenzene	**5.6**	4	I	
52645-53-1		Permethrin	**350**	200	I	
85-01-8		Phenanthrene	**10**	4	F	
106-50-3		p-Phenylenediamine	**1,330**	50*	H	
298-02-2		Phorate	**1.4**	0.25	H	
732-11-6		Phosmet	**140**	5*	I	
7803-51-2		Phosphine	**125**	125*	I	2.1
85-44-9		Phthalic anhydride	**14,000**	500*	I	
1610-18-0		Prometon	**105**	1.5*	I	
7287-19-6		Prometryn	**28**	15	I	
23950-58-5		Pronamide	**525**	45	I	
1918-16-7		Propachlor	**91**	10**	I	
139-40-2		Propazine	**140**	10**	I	
122-42-9		Propham	**140**	10**	I	
114-26-1		Propoxur (Baygon)	**28**	10	I	
129-00-0		Pyrene	**210**	4	I	
100-86-1		Pyridine	**7**	4	I	
R						
83-79-4		Rotenone	**28**	8*	I	
S						

SYSTEMIC TOXICANTS

CAS #	PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
63-25-2	Sevin (Carbaryl)	**700**	10	I	
7440-24-6	Strontium	**4,200**	10	I	
T					
93-76-5	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	**70**	4	I	
34014-18-1	Tebuthiuron	**490**	10**	I	
116-06-3	Temik (Aldicarb)	**7**	5	I	
5902-51-2	Terbacil	**91**	10**	I	
13071-79-9	Terbufos	**0.18**	0.5	H	
95-94-3	1,2,4,5-Tetrachlorobenzene	**4**	4	I	2.1
58-90-2	2,3,4,6-Tetrachlorophenol	**210**	7.5	I	
3689-24-5	Tetraethyldithiopyrophosphate	**3.5**	0.35*	I	
21564-17-0	2-(Thiocyanomethylthio)-Benzothiazole	**210**	5*	H	
137-26-8	Thiram	**35**	11*	I	
	Tin and compounds	**4,200**	4,000	H	
75-69-4	Trichlorofluoromethane (CFC 11)	**2,100**	4	I	
96-18-4	1,2,3-Trichloropropane	**42**	25*	I	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**500,000**	500,000*	I	210,000
99-35-4	1,3,5-Trinitrobenzene	**60**	60	I	0.35
786-19-6	Trithion	**12**	0.05	F	
V					
7440-62-2	Vanadium	**49**	10	H	
51235-04-2	Velpar (Hexazinone)	**231**	30	I	
110-75-8	Vinyl 2-chloroethyl ether (2-Chloroethyl vinyl ether)	**1**	1	F	
Z					

SYSTEMIC TOXICANTS

CAS #		PARAMETER	GUIDANCE CONCENTRATION ug/L	PQL ug/lL	BASIS	HBL ug/L
12122-67-7		Zineb	**350**	20.5*	I	

CHAPTER 6

GUIDANCE CONCENTRATIONS INDEX

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
A			
83-32-9	Acenaphthene	**20**	Organoleptic
208-96-8	Acenaphthylene	**10**	Systemic Toxicant
30560-19-1	Acephate	**7.5**	Carcinogen
67-64-1	Acetone	**700**	Systemic Toxicant
75-05-8	Acetonitrile	**500**	Systemic Toxicant
98-86-2	Acetophenone	**700**	Systemic Toxicant
5094-66-6	Acifluorfen (Blazer)	**4**	Carcinogen
107-02-8	Acrolein (Propenal)	**110**	Organoleptic
79-06-1	Acrylamide (2-Propeneamide)	**1**	Carcinogen
107-13-1	Acrylonitrile	**8**	Carcinogen
15972-60-8	**Alachlor**	**2**	**Primary Standard**
116-06-3	Aldicarb (Temik)	**7**	Systemic Toxicant
1646-88-4	Aldicarb sulfone	**7**	Systemic Toxicant
1646-87-3	Aldicarb sulfoxide	**10**	Systemic Toxicant
309-00-2	Aldrin	**0.05**	Carcinogen
107-18-6	Allyl alcohol	**250**	Systemic Toxicant
7429-90-5	**Aluminum**	**200**	**Secondary Standard**
834-12-8	Ametryn	**63**	Systemic Toxicant
62-53-3	Aniline	**6**	Carcinogen
120-12-7	Anthracene	**2,100**	Systemic Toxicant
7440-36-0	**Antimony**	**6**	**Primary Standard**
7440-38-2	**Arsenic**	**50**	**Primary Standard**
1912-24-9	**Atrazine**	**3**	**Primary Standard**
103-33-3	Azobenzene	**4**	Carcinogen
B			
7440-39-3	**Barium**	**2,000**	**Primary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
114-26-1	Baygon (Propoxur)	**28**	Systemic Toxicant
17804-35-2	Benomyl	**350**	Systemic Toxicant
25057-89-0	Bentazon	**17.5**	Systemic Toxicant
100-52-7	Benzaldehyde	**700**	Systemic Toxicant
71-43-2	**Benzene**	**1**	**Primary Standard**
92-87-5	Benzidine	**250**	Carcinogen
56-55-3	Benzo(a)anthracene	**4**	Carcinogen
50-32-8	**Benzo(a)pyrene**	**0.2**	**Primary Standard**
205-99-2	Benzo(b)fluoranthene	**4**	Carcinogen
191-24-2	Benzo(g,h,i)perylene	**10**	Systemic Toxicant
65-85-0	Benzoic acid	**28,000**	Systemic Toxicant
207-08-9	Benzo(k)fluoranthene	**4**	Carcinogen
100-51-6	Benzyl alcohol	**2,100**	Systemic Toxicant
100-44-7	Benzyl chloride	**0.5**	Carcinogen
7440-41-7	**Beryllium**	**4**	**Primary Standard**
319-84-6	BHC (alpha-Hexachlorocyclohexane)	**0.05**	Carcinogen
319-85-7	BHC (beta-Hexachlorocyclohexane)	**0.1**	Carcinogen
319-86-8	BHC (delta-Hexachlorocyclohexane)	**0.05**	Systemic Toxicant
141-66-2	Bidrin	**1**	Systemic Toxicant
92-52-4	1,1-Biphenyl	**0.5**	Organoleptic
111-91-1	Bis (2-Chloroethoxy) methane	**10**	Systemic Toxicant
111-44-4	Bis(chloroethyl) ether (BCEE)	**1.5**	Carcinogen
39638-32-9	Bis(2-Chloroisopropyl) ether	**7.5**	Carcinogen
542-88-1	Bis(chloromethyl) ether (Dichloromethyl ether, BCME)	**10**	Carcinogen
80-05-7	Bisphenol A	**350**	Systemic Toxicant
5094-66-6	Blazer (Acifluorfen)	**4**	Carcinogen
7440-42-8	Boron (and Borates)	**630**	Systemic Toxicant
1897-45-6	Bravo (Chlorthalonil)	**3.18**	Carcinogen
314-40-9	Bromacil	**90**	Systemic Toxicant
75-27-4	Bromodichloromethane	**0.6**	Carcinogen

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
75-25-2	Bromoform	**4**	Carcinogen
101-55-3	p-Bromodiphenyl ether	**10**	Systemic Toxicant
74-83-9	Bromomethane (Methyl bromide)	**10**	Systemic Toxicant
1689-84-5	Bromoxynil	**140**	Systemic Toxicant
71-36-3	n-Butanol (1-Butanol)	**700**	Systemic Toxicant
78-93-3	2-Butanone (Methyl ethyl ketone)	**4,200**	Systemic Toxicant
123-86-4	n-Butyl acetate	**2,500**	Organoleptic
2008-41-5	Butylate	**350**	Systemic Toxicant
85-68-7	Butyl benzyl phthalate	**1,400**	Systemic Toxicant
85-70-1	Butylphthayl butylglycolate	**7,000**	Systemic Toxicant
C			
7440-43-9	**Cadmium**	**5**	**Primary Standard**
2425-06-1	Captafol	**100**	Carcinogen
133-06-2	Captan	**250**	Carcinogen
63-25-2	Carbaryl (Sevin)	**700**	Systemic Toxicant
86-74-8	Carbazole	**7.5**	Carcinogen
1563-66-2	**Carbofuran**	**40**	**Primary Standard**
108-95-2	Carbolic acid (Phenol)	**10**	Organoleptic
75-15-0	Carbon disulfide	**700**	Systemic Toxicant
56-23-5	**Carbon tetrachloride (Tetrachloromethane)**	**3**	**Primary Standard**
5234-68-4	Carboxin	**700**	Systemic Toxicant
75-69-4	CFC 11 (Trichlorofluoromethane)	**2,100**	Systemic Toxicant
75-71-8	CFC 12 (Dichlorodifluoromethane)	**1400**	Systemic Toxicant
133-90-4	Chloramben	**105**	Systemic Toxicant
57-74-9	**Chlordane**	**2**	**Primary Standard**
16887-00-6	**Chloride**	**250,000**	**Secondary Standard**
506-77-4	Chlorine cyanide	**350**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
79-11-8	Chloroacetic acid	**14**	Systemic Toxicant
106-47-8	p-Chloroaniline	**28**	Systemic Toxicant
510-15-6	Chlorobenzilate	**0.13**	Carcinogen
106-89-8	1-Chloro-2,3-epoxypropane (Epichlorohydrin)	**3**	Carcinogen
75-00-3	Chloroethane (Ethyl chloride)	**140**	Systemic Toxicant
75-01-4	**Chloroethylene (Vinyl Chloride)**	**1**	**Primary Standard**
110-75-8	2-Chloroethyl vinyl ether (Vinyl 2-chloroethyl ether)	**1**	Systemic Toxicant
67-66-3	Chloroform	**6**	Carcinogen
74-87-3	Chloromethane (Methyl chloride)	**2.7**	Carcinogen
59-50-7	4-chloro-3-methyl phenol	**3,000**	Organoleptic
94-74-6	4-Chloro-2-methylphenoxy acetic acid (MCPA)	**1,000**	Systemic Toxicant
91-58-7	2-Chloronaphthalene	**560**	Systemic Toxicant
100-00-5	p-Chloronitrobenzene	**250**	Carcinogen
95-57-8	2-Chlorophenol	**35**	Systemic Toxicant
108-43-0	3-Chlorophenol	**10**	Organoleptic
106-48-9	4-Chlorophenol	**5.5**	Organoleptic
7005-72-3	4-Chlorophenylphenyl ether	**10**	Systemic Toxicant
76-06-2	Chloropicrin	**7.3**	Organoleptic
95-49-8	o-Chlorotoluene	**140**	Systemic Toxicant
2921-88-2	Chlorpyrifos	**21**	Systemic Toxicant
5598-13-0	Chlorpyriphos-methyl	**70**	Systemic Toxicant
1897-45-6	Chlorthalonil (Bravo)	**3.18**	Carcinogen
16065-83-1	**Chromium**	**100**	**Primary Standard**
218-01-9	Chrysene	**5**	Carcinogen
7440-50-8	**Copper**	**1,000**	**Secondary Standard**
108-39-4	m-Cresol	**350**	Systemic Toxicant
95-48-7	o-Cresol	**350**	Systemic Toxicant
106-44-5	p-Cresol	**35**	Systemic Toxicant
98-82-8	Cumene (Isopropyl benzene)	**0.8**	Organoleptic
21725-46-2	Cyanazine	**14**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
57-12-5	**Cyanide**	**200**	**Primary Standard**
460-19-5	Cyanogen	**10,000**	Systemic Toxicant
108-94-1	Cyclohexanone	**35,000**	Systemic Toxicant
108-91-8	Cyclohexylamine	**5,000**	Systemic Toxicant
52315-07-8	Cypermethrin	**70**	Systemic Toxicant
D			
94-75-7	**2,4-D (2,4-Dichlorophenoxyacetic acid)**	**70**	**Primary Standard**
1861-32-1	Dacthal (DCPA)	**3,500**	Systemic Toxicant
75-99-0	**Dalapon (2,2-Dichloropropionic acid)**	**200**	**Primary Standard**
72-54-8	DDD (p,p'-Dichlorodiphenyl dichlorethane)	**0.1**	Carcinogen
72-55-9	DDE (p,p'-Dichlorodiphenyl dichloroethylene)	**0.1**	Carcinogen
50-29-3	DDT (p,p'-Dichlorodiphenyl trichloroethane)	**0.1**	Carcinogen
2303-16-4	Diallate	**0.57**	Carcinogen
333-41-5	Diazinon	**6.3**	Systemic Toxicant
53-70-3	Dibenzo(a,h)anthracene	**7.5**	Carcinogen
124-48-1	Dibromochloromethane	**1**	Carcinogen
96-12-8	**Dibromochloropropane (DBCP)**	**0.2**	**Primary Standard**
106-93-4	**1,2-Dibromoethane (EDB, Ethylene Dibromide)**	**0.02**	**Primary Standard**
84-74-2	Dibutyl phthalate (Di-n-butyl phthalate)	**700**	Systemic Toxicant
1918-00-9	Dicamba	**210**	Systemic Toxicant
95-50-1	**1,2-Dichlorobenzene (o-Dichlorobenzene)**	**600**	**Primary Standard**
541-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	**10**	Organoleptic
106-46-7	**1,4-Dichlorobenzene (p-Dichlorobenzene)**	**75**	**Primary Standard**
91-94-1	3,3'-Dichlorobenzidine	**7.5**	Carcinogen
75-71-8	Dichlorodifluoromethane (CFC 12)	**1400**	Systemic Toxicant
75-34-3	1,1-Dichloroethane	**700**	Systemic Toxicant
107-06-2	**1,2-Dichloroethane (Ethylene dichloride)**	**3**	**Primary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
75-35-4	**1,1-Dichloroethylene (Vinylidene chloride)**	**7**	**Primary Standard**
156-59-2	**cis-1,2-Dichloroethylene**	**70**	**Primary Standard**
156-60-5	**trans-1,2-Dichloroethylene**	**100**	**Primary Standard**
75-09-2	**Dichloromethane (Methylene chloride)**	**5**	**Primary Standard**
542-88-1	Dichloromethyl ether (Bis(chloromethyl)ether, BCME)	**10**	Carcinogen
576-24-9	2,3-Dichlorophenol	**10**	Organoleptic
120-83-2	2,4-Dichlorophenol	**4**	Organoleptic
583-78-8	2,5-Dichlorophenol	**10**	Organoleptic
87-65-0	2,6-Dichlorophenol	**4**	Organoleptic
95-77-2	3,4-Dichlorophenol	**10**	Organoleptic
78-87-5	**1,2-Dichloropropane**	**5**	**Primary Standard**
542-75-6	1,3-Dichloropropene (DCP, Telone)	**1**	Carcinogen
62-73-7	Dichlorvos	**0.1**	Carcinogen
60-57-1	Dieldrin	**0.1**	Carcinogen
103-23-1	**Di(2-ethylhexyl) adipate**	**400**	**Primary Standard**
117-81-7	**Di(2-ethylhexyl) phthalate**	**6**	**Primary Standard**
84-66-2	Diethyl phthalate	**5,600**	Systemic Toxicant
56-53-1	Diethylstilbesterol	**100**	Carcinogen
60-51-5	Dimethoate	**5**	Systemic Toxicant
119-90-4	3,3'-Dimethoxybenzidine	**250**	Carcinogen
70-38-2	Dimethrin	**2,000**	Systemic Toxicant
121-69-7	N-N-Dimethylaniline	**12,500**	Systemic Toxicant
119-93-7	3,3'-Dimethylbenzidine	**250**	Carcinogen
68-12-2	N-N-Dimethylformamide	**700**	Systemic Toxicant
105-67-9	2,4-Dimethylphenol (m-Xylenol)	**400**	Organoleptic
131-11-3	Dimethyl phthalate	**70,000**	Systemic Toxicant
84-74-2	Di-n-butyl phthalate (Dibutyl phthalate)	**700**	Systemic Toxicant
99-65-0	m-Dinitrobenzene (3-Dinitrobenzene)	**50**	Systemic Toxicant
528-29-0	o-Dinitrobenzene	**200**	Systemic Toxicant
100-25-4	p-Dinitrobenzene	**50**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
131-89-5	4,6-Dinitro-o-cyclohexyl phenol	**500**	Systemic Toxicant
51-28-5	2,4-Dinitrophenol	**30**	Systemic Toxicant
	Dinitrotoluene mixture 2,4- + 2,6-	**0.2**	Carcinogen
117-84-0	Di-n-octyl phthalate	**140**	Systemic Toxicant
88-85-7	**Dinoseb**	**7**	**Primary Standard**
123-91-1	1,4-Dioxane	**5**	Carcinogen
1746-01-6	Dioxin (2,3,7,8-TCDD)	**0.000003**	Carcinogen
957-51-7	Diphenamid	**210**	Systemic Toxicant
122-39-4	Diphenylamine	**175**	Systemic Toxicant
122-66-7	1,2-Diphenylhydrazine	**10**	Carcinogen
85-00-7	**Diquat**	**20**	**Primary Standard**
298-04-4	Disulfoton	**0.5**	Systemic Toxicant
330-54-1	Diuron	**14**	Systemic Toxicant
E			
166-93-4	**EDB (Ethylene dibromide, 1,2-Dibromoethane)**	**0.02**	**Primary Standard**
115-29-7	Endosulfan	**0.35**	Systemic Toxicant
1031-07-8	Endosulfan sulfate	**0.3**	Systemic Toxicant
145-73-3	**Endothall**	**100**	**Primary Standard**
72-20-8	**Endrin**	**2**	**Primary Standard**
7421-93-4	Endrin aldehyde	**0.1**	Systemic Toxicant
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	**3**	Carcinogen
563-12-2	Ethion	**3.5**	Systemic Toxicant
110-80-5	2-Ethoxyethanol	**25,000**	Systemic Toxicant
140-88-5	Ethyl acrylate	**5,000**	Organoleptic
100-41-4	**Ethylbenzene**	**700**	**Primary Standard**
100-41-4	**Ethylbenzene**	**30**	**Secondary Standard**
75-00-3	Ethyl chloride (Chloroethane)	**140**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
107-15-3	Ethylene diamine	**10,000**	Systemic Toxicant
107-06-2	**Ethylene dichloride (1,2-Dichloroethane)**	**3**	**Primary Standard**
107-21-1	Ethylene glycol	**14,000**	Systemic Toxicant
75-21-8	Ethylene oxide (1,2-Epoxyethane)	**10**	Carcinogen
96-45-7	Ethylene thiourea (2-Imadazoli-dinethione)	**15**	Carcinogen
60-29-7	Ethyl ether	**750**	Organoleptic
97-63-2	Ethyl methacrylate	**630**	Systemic Toxicant
84-72-0	Ethylphthalyl ethylglycolate	**21,000**	Systemic Toxicant
2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate (EPN)	**0.2**	Systemic Toxicant
F			
22224-92-6	Fenamiphos	**1.75**	Systemic Toxicant
2164-17-2	Fluometuron	**91**	Systemic Toxicant
206-44-0	Fluoranthene (Idryl)	**280**	Systemic Toxicant
86-73-7	Fluorene	**280**	Systemic Toxicant
7782-41-4	**Fluoride**	**4,000**	**Primary Standard**
7782-41-4	**Fluoride**	**2,000**	**Secondary Standard**
944-22-9	Fonofos	**14**	Systemic Toxicant
50-00-0	Formaldehyde	**600**	Organoleptic
64-18-6	Formic acid	**14,000**	Systemic Toxicant
G			
1071-83-6	**Glyphosate (Roundup)**	**700**	**Primary Standard**
14127-62-9	**Gross Alpha**	**15 pCi/L**	**Primary Standard**
H			
76-44-8	**Heptachlor**	**0.4**	**Primary Standard**
1024-57-3	**Heptachlor Epoxide**	**0.2**	**Primary Standard**
118-74-1	**Hexachlorobenzene (HCB)**	**1**	**Primary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
87-68-3	Hexachlorobutadiene	**15**	Carcinogen
319-84-6	alpha-Hexachlorocyclohexane (BHC)	**0.05**	Carcinogen
319-85-7	beta-Hexachlorocyclohexane (BHC)	**0.1**	Carcinogen
319-86-8	delta-Hexachlorocyclohexane (BHC)	**0.05**	Systemic Toxicant
58-89-9	**gamma-Hexachlorocyclohexane (Lindane)**	**0.2**	**Primary Standard**
77-47-4	**Hexachlorocyclopentadiene**	**50**	**Primary Standard**
19408-74-3	Hexachlorodibenzo-p-dioxin	**0.00025**	Carcinogen
67-72-1	Hexachloroethane	**10**	Carcinogen
70-30-4	Hexachlorophene	**6**	Systemic Toxicant
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	**10**	Carcinogen
110-54-3	n-Hexane	**10**	Organoleptic
51235-04-2	Hexazinone (Velpar)	**231**	Systemic Toxicant
74-90-8	Hydrogen cyanide	**10,000**	Systemic Toxicant
123-31-9	Hydroquinone	**280**	Systemic Toxicant
I			
206-44-0	Idryl (Fluoranthene)	**280**	Systemic Toxicant
96-45-7	2 Imadazoli-dinethione (Ethylene thiourea)	**15**	Carcinogen
193-39-5	Indeno(1,2,3-cd)pyrene	**7.5**	Carcinogen
36734-19-7	Iprodione	**280**	Systemic Toxicant
7439-89-6	**Iron**	**300**	**Secondary Standard**
78-83-1	Isobutyl alcohol	**2,100**	Systemic Toxicant
78-59-1	Isophorone	**40**	Carcinogen
33820-53-0	Isopropalin	**105**	Systemic Toxicant
98-82-8	Isopropyl benzene (Cumene)	**0.8**	Organoleptic
L			
7439-92-1	**Lead**	**15**	**Primary Standard**
58-89-9	**Lindane (gamma-Hexachlorocyclohexane)**	**0.2**	**Primary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
330-55-2	Linuron	**14**	Systemic Toxicant
M			
121-75-5	Malathion	**140**	Systemic Toxicant
12427-38-2	Maneb	**75**	Systemic Toxicant
7439-96-5	**Manganese**	**50**	**Secondary Standard**
94-74-6	MCPA (4-Chloro-2-methylphenoxy acetic acid)	**1,000**	Systemic Toxicant
7439-97-6	**Mercury**	**2**	**Primary Standard**
57837-19-1	Metalaxyl	**420**	Systemic Toxicant
126-98-7	Methacrylonitrile	**50**	Systemic Toxicant
10265-92-6	Methamidophos	**5**	Systemic Toxicant
67-56-1	Methanol	**5,000**	Systemic Toxicant
16752-77-5	Methomyl	**175**	Systemic Toxicant
72-43-5	**Methoxychlor**	**40**	**Primary Standard**
99-59-2	2-Methoxy-5-nitroaniline	**50**	Carcinogen
79-20-9	Methyl acetate	**5,000**	Organoleptic
95-53-4	2-Methylaniline (o-Toluidine)	**50**	Carcinogen
74-83-9	Methyl bromide (Bromomethane)	**10**	Systemic Toxicant
74-87-3	Methyl chloride (Chloromethane)	**2.7**	Carcinogen
101-14-4	4,4'-Methylene-bis(2-chloroaniline)	**50**	Carcinogen
75-09-2	**Methylene chloride (Dichloromethane)**	**5**	**Primary Standard**
78-93-3	Methyl ethyl ketone (2-Butanone)	**4,200**	Systemic Toxicant
60-34-4	Methyl hydrazine	**10**	Carcinogen
108-10-1	Methyl isobutyl ketone (4-Methyl-2-pentanone)	**350**	Systemic Toxicant
80-62-6	Methyl methacrylate	**25**	Organoleptic
298-00-0	Methyl parathion	**10**	Systemic Toxicant
95-48-7	2-Methylphenol (o-Cresol)	**350**	Systemic Toxicant
108-39-4	3-Methylphenol (m-Cresol)	**350**	Systemic Toxicant
106-44-5	4-Methylphenol (p-Cresol)	**35**	Systemic Toxicant
51218-45-2	Metolachlor	**1,050**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
21087-64-9	Metribuzin	**175**	Systemic Toxicant
2385-85-5	Mirex	**0.1**	Carcinogen
7439-98-7	Molybdenum	**35**	Systemic Toxicant
108-90-7	**Monochlorobenzene**	**100**	**Primary Standard**
1634-04-4	MTBE (Methyl tertiary-butyl ether)	**50**	Organoleptic
N			
300-76-5	Naled	**14**	Systemic Toxicant
91-20-3	Naphthalene	**6.8**	Organoleptic
7440-02-0	**Nickel**	**100**	**Primary Standard**
14797-55-8	**Nitrate (as N)**	**10,000**	**Primary Standard**
	Total Nitrate + Nitrite (as N)	**10,000**	**Primary Standard**
10102-43-9	Nitric oxide	**10,000**	Systemic Toxicant
14797-65-0	**Nitrite (as N)**	**1,000**	**Primary Standard**
88-74-4	o-Nitroaniline (2-Nitroaniline)	**7.5**	Systemic Toxicant
98-95-3	Nitrobenzene	**9.5**	Systemic Toxicant
10102-44-0	Nitrogen dioxide	**7,000**	Systemic Toxicant
88-75-5	o-Nitrophenol (2-Nitrophenol)	**20**	Systemic Toxicant
100-02-7	p-Nitrophenol (4-Nitrophenol)	**15**	Systemic Toxicant
55-18-5	N-Nitrosodiethylamine	**4**	Carcinogen
62-75-9	N-Nitrosodimethylamine	**7.5**	Carcinogen
924-16-3	N-Nitroso-di-n-butylamine	**4**	Carcinogen
621-64-7	N-Nitrosodi-n-propylamine	**4**	Carcinogen
86-30-6	N-Nitrosodiphenylamine	**7**	Carcinogen
10595-95-6	N-Nitroso-n-methylethylamine	**7.5**	Carcinogen
930-55-2	N-Nitrosopyrrolidine	**4**	Carcinogen
27314-13-2	Norflurazon	**280**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
O			
152-16-9	Octomethylpyrophosphoramide	**1,000**	Systemic Toxicant
19044-88-3	Oryzalin	**350**	Systemic Toxicant
23135-22-0	**Oxamyl**	**200**	**Primary Standard**
19666-30-9	Oxadiazon	**35**	Systemic Toxicant
P			
1910-42-5	Paraquat	**31.5**	Systemic Toxicant
56-38-2	Parathion	**42**	Systemic Toxicant
40487-42-1	Pendimethalin	**280**	Systemic Toxicant
608-93-5	Pentachlorobenzene	**5.6**	Systemic Toxicant
82-68-8	Pentachloronitrobenzene	**15**	Carcinogen
87-86-5	**Pentachlorophenol**	**1**	**Primary Standard**
127-18-4	**Perchloroethylene (Tetrachloroethylene)**	**3**	**Primary Standard**
52645-53-1	Permethrin	**350**	Systemic Toxicant
C-006	**pH**	**6.5 - 8.5**	**Secondary Standard**
85-01-8	Phenanthrene	**10**	Systemic Toxicant
108-95-2	Phenol (Carbolic acid)	**10**	Organoleptic
106-50-3	p-Phenylenediamine	**1,330**	Systemic Toxicant
90-43-7	2-Phenylphenol	**18**	Carcinogen
298-02-2	Phorate	**1.4**	Systemic Toxicant
732-11-6	Phosmet	**140**	Systemic Toxicant
7803-51-2	Phosphine	**125**	Systemic Toxicant
85-44-9	Phthalic anhydride	**14,000**	Systemic Toxicant
1918-02-1	**Picloram**	**500**	**Primary Standard**
1336-36-3	**Polychlorinated biphenyl (PCB)**	**0.5**	**Primary Standard**
1610-18-0	Prometon	**105**	Systemic Toxicant
7287-19-6	Prometryn	**28**	Systemic Toxicant

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
23950-58-5	Pronamide	525	Systemic Toxicant
1918-16-7	Propachlor	91	Systemic Toxicant
139-40-2	Propazine	140	Systemic Toxicant
107-02-8	Propenal (Acrolein)	110	Organoleptic
79-06-1	2-Propeneamide (Acrylamide)	1	Carcinogen
122-42-9	Propham	140	Systemic Toxicant
114-26-1	Propoxur (Baygon)	28	Systemic Toxicant
75-56-9	Propylene oxide	5,000	Carcinogen
129-00-0	Pyrene	210	Systemic Toxicant
100-86-1	Pyridine	7	Systemic Toxicant
R			
7440-14-4	**Radium**	**5 pCi/L**	**Primary Standard**
121-82-4	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	10	Carcinogen
83-79-4	Rotenone	28	Systemic Toxicant
1071-83-6	**Roundup (Glyphosphate)**	**700**	**Primary Standard**
S			
7782-49-2	**Selenium**	**50**	**Primary Standard**
63-25-2	Sevin (Carbaryl)	700	Systemic Toxicant
7440-22-4	**Silver**	**100**	**Secondary Standard**
93-72-1	**Silvex (2,4,5-TP)**	**50**	**Primary Standard**
122-34-9	**Simazine**	**4**	**Primary Standard**
7440-28-0	**Sodium**	**160,000**	**Primary Standard**
7440-24-6	Strontium	4,200	Systemic Toxicant
100-42-5	**Styrene (Vinyl benzene)**	**100**	**Primary Standard**
14808-79-8	**Sulfate**	**250,000**	**Secondary Standard**
T			

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
93-76-5	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	**70**	Systemic Toxicant
1746-01-6	2,3,7,8-TCDD (Dioxin)	**0.000003**	Carcinogen
34014-18-1	Tebuthiuron	**490**	Systemic Toxicant
542-75-6	Telone (DCP, 1,3-Dichloropropene)	**1**	Carcinogen
116-06-3	Temik (Aldicarb)	**7**	Systemic Toxicant
5902-51-2	Terbacil	**91**	Systemic Toxicant
13071-79-9	Terbufos	**0.18**	Systemic Toxicant
95-94-3	1,2,4,5-Tetrachlorobenzene	**4**	Systemic Toxicant
630-20-6	1,1,1,2-Tetrachloroethane	**1**	Carcinogen
79-34-5	1,1,2,2-Tetrachloroethane	**0.2**	Carcinogen
127-18-4	**Tetrachloroethylene (Perchloroethylene)**	**3**	**Primary Standard**
56-23-5	**Tetrachloromethane (Carbon tetrachloride)**	**3**	**Primary Standard**
58-90-2	2,3,4,6-Tetrachlorophenol	**210**	Systemic Toxicant
3689-24-5	Tetraethyldithiopyrophosphate	**3.5**	Systemic Toxicant
7440-28-0	**Thallium**	**2**	**Primary Standard**
21564-17-0	2-(Thiocyanomethylthio)-Benzothiazole	**210**	Systemic Toxicant
137-26-8	Thiram	**35**	Systemic Toxicant
	Tin and compounds	**4,200**	Systemic Toxicant
108-88-3	**Toluene**	**1,000**	**Primary Standard**
108-88-3	**Toluene**	**40**	**Secondary Standard**
95-80-7	Toluene-2,4-diamine	**100**	Carcinogen
95-53-4	o-Toluidine (2-Methylaniline)	**50**	Carcinogen
106-49-0	p-Toluidine	**150**	Carcinogen
C-010	**Total Dissolved Solids (TDS)**	**500000**	**Secondary Standard**
8001-35-2	**Toxaphene**	**3**	**Primary Standard**
93-72-1	**2,4,5-TP (Silvex)**	**50**	**Primary Standard**
120-82-1	**1,2,4-Trichlorobenzene**	**70**	**Primary Standard**
71-55-6	**1,1,1-Trichloroethane**	**200**	**Primary Standard**
79-00-5	**1,1,2-Trichloroethane**	**5**	**Primary Standard**
79-01-6	**Trichloroethylene (Trichloroethene, TCE)**	**3**	**Primary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
75-69-4	Trichlorofluoromethane (CFC 11)	**2,100**	Systemic Toxicant
95-95-4	2,4,5-Trichlorophenol	**4**	Organoleptic
88-06-2	2,4,6-Trichlorophenol	**10**	Carcinogen
93-72-1	**(2,4,5-Trichlorophenoxy)propionic acid (2,4,5-TP)**	**50**	**Primary Standard**
96-18-4	1,2,3-Trichloropropane	**42**	Systemic Toxicant
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**500,000**	Systemic Toxicant
1582-09-8	Trifluralin	**5**	Carcinogen
	Trihalomethanes, Total	**100**	**Primary Standard**
	Trimethyl benzenes	**10**	Organoleptic
512-56-1	Trimethyl phosphate	**50**	Carcinogen
99-35-4	1,3,5-Trinitrobenzene	**60**	Systemic Toxicant
118-96-7	2,4,6-Trinitrotoluene	**10**	Carcinogen
786-19-6	Trithion	**12**	Systemic Toxicant
V			
7440-62-2	Vanadium	**49**	Systemic Toxicant
51235-04-2	Velpar (Hexazinone)	**231**	Systemic Toxicant
108-05-4	Vinyl acetate	**250**	Organoleptic
75-01-4	**Vinyl Chloride (Chloroethylene)**	**1**	**Primary Standard**
110-75-8	Vinyl 2-chloroethyl ether (2-Chloroethyl vinyl ether)	**1**	Systemic Toxicant
X			
1330-20-7	**Xylenes (total)**	**10,000**	**Primary Standard**
1330-20-7	**Xylenes (total)**	**20**	**Secondary Standard**
105-67-9	m-Xylenol (2,4-Dimethylphenol)	**400**	Organoleptic
Z			
7440-66-6	**Zinc**	**5,000**	**Secondary Standard**

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	CHAPTER
12122-67-7	Zineb	**350**	Systemic Toxicant