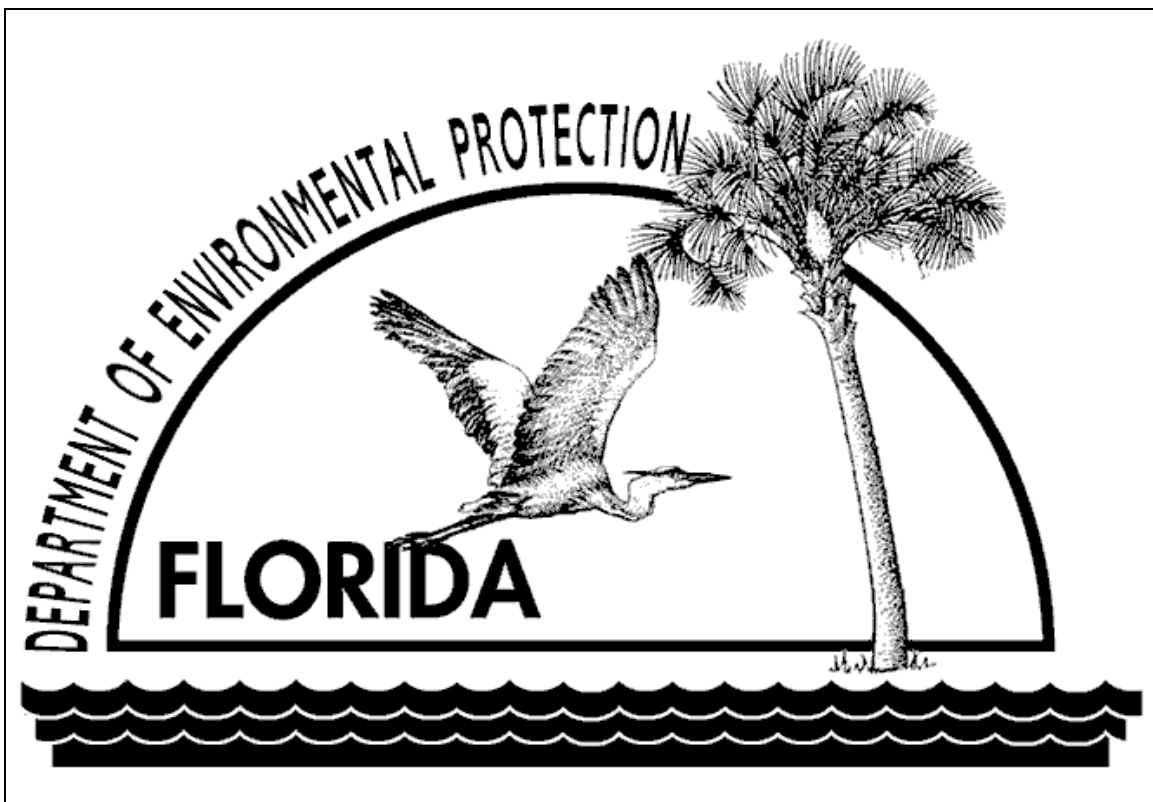


**GUIDELINES FOR OBTAINING APPROVAL TO USE
ALTERNATE INITIAL COVER MATERIALS
AT MUNICIPAL SOLID WASTE LANDFILLS IN FLORIDA**

February 27, 1998



Prepared by:

Department of Environmental Protection
Solid Waste Section
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

I. INTRODUCTION

The Department of Environmental Protection's (Department) Solid Waste Management Facilities Rule, Chapter 62-701, Florida Administrative Code (F.A.C.), contains Florida's requirements for managing solid waste. Included in this rule are requirements for initial cover and alternate initial cover materials (AICMs) at solid waste landfills. Rule 62-701.200(53), F.A.C. states:

"Initial cover" means a 6-inch layer of compacted earth, used to cover an area of solid waste before placement of additional waste, intermediate cover, or final cover. The term also includes other material or thickness, approved by the Department, that minimizes disease vector breeding, animal attraction, and moisture infiltration, minimizes fire potential, prevents blowing litter, controls odors, and improves landfill appearance.

In addition, the Department has specific operation requirements for cover at Class I, Class II and Class III landfills. In the case of initial cover, Rule 62-701.500(7)(e), F.A.C. states:

Initial cover shall be applied and maintained at landfills in order to minimize any adverse environmental, safety, or health effects such as those resulting from birds, unauthorized wastes, blowing litter, odors, disease vectors, or fires. The minimum frequency for applying cover is:

1. For Class I and II landfills, at the end of each working day. However, for those areas where solid waste will be deposited on the working face within 18 hours, initial cover may consist of a temporary cover, such as a tarpaulin, which may be removed prior to deposition of additional waste; and
2. For Class III landfills, at the end of each work week

Initial cover is normally considered to be a 6-inch thick layer of compacted soil. The Department also allows a tarpaulin to be used as a temporary initial cover. Other materials can be used as initial cover at landfills provided the use of these materials is approved by the Department.

II. PURPOSE

The Department is often asked to approve AICMs for use in Florida landfills. In the past, the procedures used to review these materials have not always been clear and may not have been consistently applied. Consequently, the purpose of this document is: (1) to provide general guidance to the public for obtaining approvals to use AICMs at landfills in Florida; and, (2) to standardize the review process so different requests for AICM approvals will be processed in the same manner.¹

III. APPROVAL PROCESS

Approvals for use of AICMs can be obtained in two ways. These procedures are formalized in the Department's guidance memorandum contained in ATTACHMENT 1. First, approvals can be granted by the Department's six District offices on a case-by-case basis for AICMs used at landfills located in their respective districts. The Districts are authorized by Rule 62-701.200(53), F.A.C. to make these determinations provided they have reasonable assurance the proposed AICM will perform adequately as initial cover at landfills. The Districts are also encouraged to coordinate these approvals with the other District offices and the Solid Waste Section in Tallahassee. Solid Waste contacts for the Department's six District offices are contained in ATTACHMENT 2.

If a vendor wishes to obtain statewide approval for their product, then the AICM must first be reviewed by the Solid Waste Section in Tallahassee. Tallahassee will coordinate this review with the District offices. If this review is satisfactory, then the Solid Waste Section in Tallahassee will issue a letter authorizing the field testing of the AICM at Florida landfills. However, final approval for use of the AICM at a landfill is still left to the discretion of the District offices. As a part of field testing, the District offices can also require additional information be provided on the AICM.

IV. INFORMATION REQUIRED FOR STATEWIDE APPROVALS

This section addresses the information typically required by the Solid Waste Section in Tallahassee in order to issue a letter authorizing field testing of AICMs at

¹ The Department may revise this guidance as necessary to reflect new information or requirements for AICMs. Individuals seeking approvals can contact the Department to ensure they have the latest copy of this guidance.

Florida landfills. Other information may also be required on a case-by-case basis depending on the particular characteristics of an AICM.

A. GENERAL PRODUCT DESCRIPTION

- A Material Safety Data Sheet (MSDS) must be provided for the AICM which describes product information such as identification of the main ingredients of the product including hazardous chemicals, physical/chemical characteristics, physical hazards, health hazards, and proper handling, use and control measures. The MSDS must conform to the hazard communication reporting requirements found in 29 CFR 1910.1200.
- Provide a description of how the product is manufactured.
- Provide a description of how the AICM is to be used at landfills. Is the material a solid or liquid? How is it mixed or prepared, and what quantities of materials are needed prior to application? What other materials and equipment are needed to apply this product in the field? Is it easy and safe for landfill operators to use? What will be the thickness of the AICM during application?

B. FLAMMABILITY INFORMATION

- A demonstration that the material is not flammable or is self-extinguishing² must be provided to the Department. This demonstration can be provided by conducting flammability tests on representative samples of the material as it would be expected to exist in actual landfill use. Tests which may be appropriate are: (1) ASTM D4982-89, Standard Test Methods for Flammability Potential Screening Analysis of Waste; (2) ASTM E1354, Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products, Using an Oxygen Consumption Calorimeter; (3) NFPA 701, Fire Tests for Flame Resistant Textiles and Films; and (4) FMVSS 302, Flammability of Interior Materials of Cars, Trucks, Multipurpose Passenger Vehicle Buses.

² A material is considered self-extinguishing if it will not continue to burn when an external source of flame is removed.

- Actual copies of the laboratory flammability test results must be provided with the conclusions of the tests clearly stated. A justification for the flammability test method used to evaluate the AICM must also be provided.

C. CHEMICAL CHARACTERIZATION - A representative sample of the AICM, as it is expected to be used at a landfill, must be collected and analyzed as follows:

- The sample must be prepared using the Toxicity Characteristic Leaching Procedure (TCLP), EPA Method 1311. The resulting extract must be analyzed for the parameters contained in 40 CFR 261.24 and with the resulting concentrations compared to their corresponding EPA regulatory levels. **NOTE:** Should any of the parameter concentrations in the TCLP test exceed EPA's regulatory levels, then the AICM will not be allowed for use at Florida landfills.
- The sample must be subjected to **total analysis** for: (a) the eight RCRA metals, and aluminum, antimony, beryllium, nickel, sodium, and thallium using the appropriate test methods for these metals contained in EPA publication SW-846, latest edition; (b) volatile organic compounds using EPA Method 8260; and (c) semi-volatile organic compounds using EPA Method 8270. All analyses shall be conducted with the best achievable laboratory detection limits. The parameters normally contained in EPA Methods 8260 and 8270 are presented in ATTACHMENT 3.
- Laboratories conducting the analysis must have a Department approved Comprehensive Quality Assurance Plan (CompQAP) in accordance with the requirements of Chapter 62-160, F.A.C. or an equivalent approval from another state. The approved plan must authorize the laboratory to conduct the analyses required in this section.

D. LEACHING POTENTIAL - A representative sample of the AICM, as it is expected to be used at a landfill, must be collected and analyzed as follows:

- To evaluate leaching potential of the AICM, the sample must be prepared using the Synthetic Precipitation Leaching Procedure (SPLP), EPA Method 1312. The extract prepared with this procedure must then be analyzed for: (a) the eight RCRA metals, and aluminum, antimony, beryllium, nickel, sodium, and thallium using the appropriate test methods for these metals contained in EPA publication SW-846,

latest edition; (b) volatile organic compounds using EPA Method 8260; and (c) semi-volatile organic compounds using EPA Method 8270. All analyses shall be conducted with the best achievable laboratory detection limits. The parameters normally contained in EPA Methods 8260 and 8270 are presented in ATTACHMENT 3.

- The Department is normally concerned with the potential for runoff from the use of an AICM to impact the landfill's surface water system. To evaluate this potential impact, the results of the SPLP testing required above must be compared to the Department's surface water standards and criteria. In addition to providing the laboratory analysis sheets, the results of these tests should be summarized in a table and compared to the Department's surface water standards and criteria. For surface water parameters which require the analysis of total hardness to determine the standard, the Department recommends a value of 100 mg/L as CaCO₃ be used if site specific data is not available. A copy of the Department's surface water standards is contained in ATTACHMENT 4.
- If there is a significant potential for runoff from the use of an AICM to adversely impact ground water³, then the results of the SPLP testing required above must be compared to the Department's ground water standards and guidance concentrations. The results of the laboratory tests must be provided as well as a table summarizing the data. A copy of the ground water standards and guidance concentrations is contained in ATTACHMENT 5.
- Laboratories conducting the analysis must have a Department approved Comprehensive Quality Assurance Plan (CompQAP) in accordance with the requirements of Chapter 62-160, F.A.C. or an equivalent approval from another state. The approved plan must authorize the laboratory to conduct the analyses required in this section.

E. PRODUCT PERFORMANCE

³ Since all Class I landfills in Florida have bottom liner systems, it is unlikely that the use of AICMs will adversely affect ground water quality. However, there may be some cases where potential impacts to ground water should be evaluated, such as if surface water runoff is not properly controlled at a landfill. In those cases, the Department may require a

- Provide a list of contacts who have used the AICM. This list should include contact names and phone numbers, where the AICM was used and the approximate length of time the AICM has been used.
- Provide a description of how this AICM will minimize disease vector breeding, animal attraction, and moisture infiltration.
- Provide a description of how this AICM will prevent blowing litter, will control odors and will improve landfill appearance.
- Describe the likelihood that use of this AICM will result in adverse impacts to birds or other wildlife that may come into contact with it at the landfill⁴.

comparison of SPLP leaching results to ground water standards and guidance concentrations.

⁴ For example, incidents have been reported where surfactants in AICMs may have adversely affected birds.

V. INFORMATION SUBMITTAL AND REVIEW

A total of **seven complete copies** of the information described in Section IV (one for each of the six District offices and one for the Solid Waste Section in Tallahassee) must be submitted to the following address:

John Labie, Environmental Specialist
Solid Waste Section
Department of Environmental Protection
MS # 4565
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

The Solid Waste Section will review the submitted information and will also coordinate this review with the District offices. If needed, any requests for additional information will be made in writing. Upon completion of the review, the Department will either approve or deny the request for statewide testing of the AICM.

When approvals are given, individual landfills will need to be contacted by the vendors for on-site testing of the AICM. This testing of the product(s) must be coordinated with the Department's District offices. Modification of a facility's solid waste permit may be required to authorize final use of the AICM at the landfill.



ATTACHMENT 1

**Department Memorandum on
Alternate Initial Cover**





State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

WM/SWM-21.9 4-2-93	
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

Interoffice Memorandum

TO: Waste Program Administrators

FROM: Chris McGuire, Office of General Counsel *cm*
Mary Jean Yon, Solid Waste Section Administrator *MJY*

SUBJECT: Alternate Initial Cover

DATE: April 2, 1993

The definitions of initial cover and intermediate cover in Chapter 17-701, F.A.C., were amended in January of this year, and now contain the provision, "The term also includes other material or thickness, approved by the Department, that" performs the same functions as compacted earth. Hopefully, this new language clarifies our long-standing policy that alternate types of cover do not require approval from Headquarters, either as an Alternate Procedure or through a variance.

The Districts are authorized by rule to approve alternate cover materials and thicknesses as a condition of a permit or permit modification. We encourage the Districts to coordinate with Headquarters and with other Districts prior to such approval in order to promote statewide consistency. We will continue to deal with vendors and others that seek statewide approval for their product. However, our practice in the past has been to encourage these people to find a specific site and deal with the District either through a permit modification or an RD&D permit.

Please do not hesitate to call either of us if you have questions concerning this process. The monthly teleconference may be a useful forum to discuss whatever requests for alternate cover you have pending.

cc: Kathy Anderson



ATTACHMENT 2

List of Department Solid Waste Contacts



**DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOLID WASTE CONTACTS
(Updated May 28, 2003)**

Northwest District: Marshall Seymore, P.E.
Department of Environmental Protection
160 Governmental Center
Pensacola, Florida 32501
850/595-8360 x1246
Marshall.Seymore@dep.state.fl.us

Northeast District: Mary Nogas, P.E.
Department of Environmental Protection
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590
904/807-3300 x3355
Mary.Nogas@dep.state.fl.us

Central District: Jim Bradner, P.E.
Department of Environmental Protection
3319 Maguire Boulevard, Suite 323
Orlando, Florida 32803-3767
407/894-7555 x3329
James.Bradner@dep.state.fl.us

Southwest District: Susan Pelz, P.E.
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619
813/744-6100 x386
Susan.Pelz@dep.state.fl.us

Southeast District: Joe Lurix
Department of Environmental Protection
400 North Congress Avenue
West Palm Beach, Florida 33401
561/681-6600 x6668
Joe.Lurix@dep.state.fl.us

South District: Ghaus Minhaj, P.E.
Department of Environmental Protection
2295 Victoria Avenue
Fort Myers, Florida 33901-3881
941/332-6975 x185
Ghousuddin.Minhaj@dep.state.fl.us



ATTACHMENT 3

Parameters Contained in EPA Methods 8260 and 8270



EPA METHOD 8260B PARAMETERS
VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/
MASS SPECTROMETRY (GC/MS)

Compound	CAS No.	Compound	CAS No.
Acetone	67-64-1	1,4-Dichlorobenzene	106-46-7
Acetonitrile	75-05-8	1,4-Dichlorobenzene-d ₄ (IS)	
Acrolein (Propenal)	107-02-8	cis-1,4-Dichloro-2-butene	1476-11-5
Acrylonitrile	107-13-1	trans-1,4-Dichloro-2-butene	110-57-6
Allyl alcohol	107-18-6	Dichlorodifluoromethane	75-71-8
Allyl chloride	107-05-1	1,1-Dichloroethane	75-34-3
Benzene	71-43-2	1,2-Dichloroethane	107-06-2
Benzyl chloride	100-44-7	1,2-Dichloroethane-d ₄ (surr)	
Bis(2-chloroethyl)sulfide	505-60-2	1,1-Dichloroethene	75-35-4
Bromoacetone	598-31-2	trans-1,2-Dichloroethene	156-60-5
Bromochloromethane	74-97-5	1,2-Dichloropropane	78-87-5
Bromodichloromethane	75-27-4	1,3-Dichloro-2-propanol	96-23-1
4-Bromofluorobenzene (surr)	460-00-4	cis-1,3-Dichloropropene	10061-01-5
Bromoform	75-25-2	trans-1,3-Dichloropropene	10061-02-6
Bromomethane	74-83-9	1,2,3,4-Diepoxybutane	1464-53-5
n-Butanol	71-36-3	Diethyl ether	60-29-7
2-Butanone (MEK)	78-93-3	1,4-Difluorobenzene (IS)	540-36-3
t-Butyl alcohol	75-65-0	1,4-Dioxane	123-91-1
Carbon disulfide	75-15-0	Epichlorohydrin	106-89-8
Carbon tetrachloride	56-23-5	Ethanol	64-17-5
Chloral hydrate	302-17-0	Ethyl acetate	141-78-6
Chlorobenzene	108-90-7	Ethylbenzene	100-41-4
Chlorobenzene-d ₅ (IS)		Ethylene oxide	75-21-8
Chlorodibromomethane	124-48-1	Ethyl methacrylate	97-63-2
Chloroethane	75-00-3	Fluorobenzene (IS)	462-06-6
2-Chloroethanol	107-07-3	Hexachlorobutadiene	87-68-3
2-Chloroethyl vinyl ether	110-75-8	Hexachloroethane	67-72-1
Chloroform	67-66-3	2-Hexanone	591-78-6
Chloromethane	74-87-3	2-Hydroxypropionitrile	78-97-7
Chloroprene	126-99-8	Iodomethane	74-88-4
3-Chloropropionitrile	542-76-7	Isobutyl alcohol	78-83-1
Crotonaldehyde	4170-30-3	Isopropylbenzene	98-82-8
1,2-Dibromo-3-chloropropane	96-12-8	Malononitrile	109-77-3
1,2-Dibromoethane	106-93-4	Methacrylonitrile	126-98-7
Dibromomethane	74-95-3	Methanol	67-56-1
1,2-Dichlorobenzene	95-50-1	Methylene chloride	75-09-2
1,3-Dichlorobenzene	541-73-1	Methyl methacrylate	80-62-6

EPA METHOD 8260B PARAMETERS
VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/
MASS SPECTROMETRY (GC/MS)

Compound	CAS No.
4-Methyl-2-pentanone (MIBK)	108-10-1
Naphthalene	91-20-3
Nitrobenzene	98-95-3
2-Nitropropane	79-46-9
N-Nitroso-di-n-butylamine	924-16-3
Paraldehyde	123-63-7
Pentachloroethane	76-01-7
2-Pentanone	107-87-9
2-Picoline	109-06-8
1-Propanol	71-23-8
2-Propanol	67-63-0
Propargyl alcohol	107-19-7
β -Propiolactone	57-57-8
Propionitrile (ethyl cyanide)	107-12-0
n-Propylamine	107-10-8
Pyridine	110-86-1
Styrene	100-42-5
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
Tetrachloroethene	127-18-4
Toluene	108-88-3
Toluene-d ₈ (surr)	2037-26-5
o-Toluidine	95-53-4
1,2,4-Trichlorobenzene	120-82-1
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethene	79-01-6
Trichlorofluoromethane	75-69-4
1,2,3-Trichloropropane	96-18-4
Vinyl acetate	108-05-4
Vinyl chloride	75-01-4
o-Xylene	95-47-6
m-Xylene	108-38-3
p-Xylene	106-42-3

EPA METHOD 8270C PARAMETERS
SEMIVOLATILE ORGANIC COMPOUNDS
BY GAS CHROMATOGRAPY/MASS SPECTROMETRY (GC/MS)

Compounds	CAS No	Compounds	CAS No
Acenaphthene	83-32-9	γ-BHC (Lindane)	58-89-9
Acenaphthene-d ₁₀ (IS)		Bis(2-chloroethoxy)methane	111-91-1
Acenaphthylene	208-96-8	Bis(2-chloroethyl) ether	111-44-4
Acetophenone	98-86-2	Bis(2-chloroisopropyl) ether	108-60-1
2-Acetylaminofluorene	53-96-3	Bis(2-ethylhexyl) phthalate	117-81-7
1-Acetyl-2-thiourea	591-08-2	4-Bromophenyl phenyl ether	101-55-3
Aldrin	309-00-2	Bromoxynil	1689-84-5
2-Aminoanthraquinone	117-79-3	Butyl benzyl phthalate	85-68-7
Aminoazobenzene	60-09-3	Captafol	2425-06-1
4-Aminobiphenyl	92-67-1	Captan	133-06-2
3-Amino-9-ethylcarbazole	132-32-1	Carbaryl	63-25-2
Anilazine	101-05-3	Carbofuran	1563-66-2
Aniline	62-53-3	Carbophenothion	786-19-6
o-Anisidine	90-04-0	Chlordane (NOS)	57-74-9
Anthracene	120-12-7	Chlorfenvinphos	470-90-6
Aramite	140-57-8	4-Chloroaniline	106-47-8
Aroclor 1016	12674-11-2	Chlorobenzilate	510-15-6
Aroclor 1221	11104-28-2	5-Chloro-2-methylaniline	95-79-4
Aroclor 1232	11141-16-5	4-Chloro-3-methylphenol	59-50-7
Aroclor 1242	53469-21-9	3-(Chloromethyl)pyridine	
Aroclor 1248	12672-29-6	hydrochloride	6959-48-4
Aroclor 1254	11097-69-1	1-Chloronaphthalene	90-13-1
Aroclor 1260	11096-82-5	2-Chloronaphthalene	91-58-7
Azinphos-methyl	86-50-0	2-Chlorophenol	95-57-8
Barban	101-27-9	4-Chloro-1,2-phenylenediamine	95-83-0
Benzidine	92-87-5	4-Chloro-1,3-phenylenediamine	5131-60-2
Benzoic acid	65-85-0	4-Chlorophenyl phenyl ether	7005-72-3
Benz(a)anthracene	56-55-3	Chrysene	218-01-9
Benzo(b)fluoranthene	205-99-2	Chrysene-d ₁₂ (IS)	
Benzo(k)fluoranthene	207-08-9	Coumaphos	56-72-4
Benzo(g,h,i)perlene	191-24-2	p-Cresidine	120-71-8
Benzo(a)pyrene	50-32-8	Crotoxyphos	7700-17-6
p-Benzoquinone	106-51-4	2-Cyclohexyl-4,6-dinitro-phenol	131-89-5
Benzyl alcohol	100-51-6	4,4'-DDD	72-54-8
α-BHC	319-84-6	4,4'-DDE	72-55-9
B-BHC	319-85-7	4,4'-DDT	50-29-3
δ-BHC	319-86-8	Demeton-O	298-03-3

EPA METHOD 8270C PARAMETERS
SEMIVOLATILE ORGANIC COMPOUNDS
BY GAS CHROMATOGRAPY/MASS SPECTROMETRY (GC/MS)

Compounds	CAS No	Compounds	CAS No
Demeton-S	126-75-0	2,4-Dinitrotoluene	121-14-2
Diallate (cis or trans)	2303-16-4	2,6-Dinitrotoluene	606-20-2
2,4-Diaminotoluene	95-80-7	Dinocap	39300-45-3
Dibenz(a,j)acridine	224-42-0	Dinoseb	88-85-7
Dibenz(a,h)anthracene	53-70-3	Dioxathion	78-34-2
Dibenzofuran	132-64-9	Diphenylamine	122-39-4
Dibenzo(a,e)pyrene	192-65-4	5,5-Diphenylhydantoin	57-41-0
1,2-Dibromo-3-chloropropane	96-12-8	1,2-Diphenylhydrazine	122-66-7
Di-n-butyl phthalate	84-74-2	Di-n-octyl phthalate	117-84-0
Dichlone	117-80-6	Disulfoton	298-04-4
1,2-Dichlorobenzene	95-50-1	Endosulfan I	959-98-8
1,3-Dichlorobenzene	541-73-1	Endosulfan II	33213-65-9
1,4-Dichlorobenzene	106-46-7	Endosulfan sulfate	1031-07-8
1,4-Dichlorobenzene-d ₄ (IS)		Endrin	72-20-8
3,3'-Dichlorobenzidine	91-94-1	Endrin aldehyde	7421-93-4
2,4-Dichlorophenol	120-83-2	Endrin ketone	53494-70-5
2,6-Dichlorophenol	87-65-0	EPN	2104-64-5
Dichlorovos	62-73-7	Ethion	563-12-2
Dicrotophos	141-66-2	Ethyl carbamate	51-79-6
Dieldrin	60-57-1	Ethyl methanesulfonate	62-50-0
Diethyl phthalate	84-66-2	Famphur	52-85-7
Diethylstilbestrol	56-53-1	Fensulfothion	115-90-2
Diethyl sulfate	64-67-5	Fenthion	55-38-9
Dihydrosaffrole	56312-13-1	Fluchloralin	33245-39-5
Dimethoate	60-51-5	Fluoranthene	206-44-0
3,3'-Dimethoxybenzidine	119-90-4	Fluorene	86-73-7
Dimethylaminoazobenzene	60-11-7	2-Fluorobiphenyl (surr)	321-60-8
7,12-Dimethylbenz(a)-anthracene	57-97-6	2-Fluorophenol (surr)	367-12-4
3,3'-Dimethylbenzidine	119-93-7	Heptachlor	76-44-8
α,α-Dimethylphenethylamine	122-09-8	Heptachlor epoxide	1024-57-3
2,4-Dimethylphenol	105-67-9	Hexachlorobenzene	118-74-1
Dimethyl phthalate	131-11-3	Hexachlorobutadiene	87-68-3
1,2-Dinitrobenzene	528-29-0	Hexachlorocyclopentadiene	77-47-4
1,3-Dinitrobenzene	99-65-0	Hexachloroethane	67-72-1
1,4-Dinitrobenzene	100-25-4	Hexachlorophene	70-30-4
4,6-Dinitro-2-methylphenol	534-52-1	Hexachloropropene	1888-71-7
2,4-Dinitrophenol	51-28-5	Hexamethylphosphoramide	680-31-9

EPA METHOD 8270C PARAMETERS
SEMIVOLATILE ORGANIC COMPOUNDS
BY GAS CHROMATOGRAPY/MASS SPECTROMETRY (GC/MS)

Compounds	CAS No	Compounds	CAS No
Hydroquinone	123-31-9	5-Nitro-o-anisidine	99-59-2
Indeno(1,2,3-cd)pyrene	193-39-5	Nitrobenzene	98-95-3
Isodrin	465-73-6	Nitrobenzene-d ₅ (surr)	
Isophorone	78-59-1	4-Nitrobiphenyl	92-93-3
Isosafrole	120-58-1	Nitrofen	1836-75-5
Kepone	143-50-0	2-Nitrophenol	88-75-5
Leptophos	21609-90-5	4-Nitrophenol	100-02-7
Malathion	121-75-5	5-Nitro-o-toluidine	99-55-8
Maleic anhydride	108-31-6	Nitroquinoline-1-oxide	56-57-5
Mestranol	72-33-3	N-Nitrosodi-n-butylamine	924-16-3
Methapyrilene	91-80-5	N-Nitrosodiethylamine	55-18-5
Methoxychlor	72-43-5	N-Nitrosodimethylamine	62-75-9
3-Methylcholanthrene	56-49-5	N-Nitrosomethylethylamine	10595-95-6
4,4'-Methylenebis (2-chloroaniline)	101-14-4	N-Nitrosodiphenylamine	86-30-6
4,4'-Methylenebis (N,N-dimethylaniline)	101-61-1	N-Nitrosodi-n-propylamine	621-64-7
Methyl methanesulfonate	66-27-3	N-Nitrosomorpholine	59-89-2
2-Methylnaphthalene	91-57-6	N-Nitrosopiperidine	100-75-4
Methyl parathion	298-00-0	N-Nitrosopyrrolidine	930-55-2
2-Methylphenol	95-48-7	Octamethyl pyrophosphoramidate	152-16-9
3-Methylphenol	108-39-4	4,4'-Oxydianiline	101-80-4
4-Methylphenol	106-44-5	Parathion	56-38-2
Mevinphos	7786-34-7	Pentachlorobenzene	608-93-5
Mexacarbate	315-18-4	Pentachloronitrobenzene	82-68-8
Mirex	2385-85-5	Pentachlorophenol	87-86-5
Monocrotophos	6923-22-4	Perylene-d ₁₂ (IS)	
Naled	300-76-5	Phenacetin	62-44-2
Naphthalene	91-20-3	Phenanthrene	85-01-8
Naphthalene-d ₈ (IS)		Phenanthrene-d ₁₀ (IS)	
1,4-Naphthoquinone	130-15-4	Phenobarbital	50-06-6
1-Naphthylamine	134-32-7	Phenol	108-95-2
2-Naphthylamine	91-59-8	Phenol-d ₆ (surr)	
Nicotine	54-11-5	1,4-Phenylenediamine	106-50-3
5-Nitroacenaphthene	602-87-9	Phorate	298-02-2
2-Nitroaniline	88-74-4	Phosalone	2310-17-0
3-Nitroaniline	99-09-2	Phosmet	732-11-6
4-Nitroaniline	100-01-6	Phosphamidon	13171-21-6

EPA METHOD 8270C PARAMETERS
SEMIVOLATILE ORGANIC COMPOUNDS
BY GAS CHROMATOGRAPY/MASS SPECTROMETRY (GC/MS)

Compounds	CAS No
Phthalic anhydride	85-44-9
2-Picoline (2-Methylpyridine)	109-06-8
Piperonyl sulfoxide	120-62-7
Pronamide	23950-58-5
Propylthiouracil	51-52-5
Pyrene	129-00-0
Pyridine	110-86-1
Resorcinol	108-46-3
Safrole	94-59-7
Strychnine	57-24-9
Sulfallate	95-06-7
Terbufos	13071-79-9
Terphenyl-d ₁₄ (surr)	1718-51-0
1,2,4,5-Tetrachlorobenzene	95-94-3
2,3,4,6-Tetrachlorophenol	58-90-2
Tetrachlorvinphos	961-11-5
Tetraethyl dithiopyrophosphate	3689-24-5
Tetraethyl pyrophosphate	107-49-3
Thionazine	297-97-2
Thiophenol (Benzenethiol)	108-98-5
Toluene diisocyanate	584-84-9
o-Toluidine	95-53-4
Toxaphene	8001-35-2
2,4,6-Tribromophenol (surr)	118-79-6
1,2,4-Trichlorobenzene	120-82-1
2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol	88-06-2
Trifluralin	1582-09-8
2,4,5-Trimethylaniline	137-17-7
Trimethyl phosphate	512-56-1
1,3,5-Trinitrobenzene	99-35-4
Tris(2,3-dibromopropyl) phosphate	126-72-7
Tri-p-tolyl phosphate	78-32-0
O,O,O-Triethyl phosphorothioate	126-68-1



ATTACHMENT 4

Florida Surface Water Standards and Criteria



CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(1) Alkalinity	Milligrams/L as CaCO ₃	Shall not be depressed below 20		Shall not be depressed below 20		≤ 600	
(2) Aluminum	Milligrams/L		≤ 1.5		≤ 1.5		
(3) Ammonia (un-ionized)	Milligrams/L as NH ₃	≤ 0.02		≤ 0.02			
(4) Antimony	Micrograms/L	≤ 14.0	≤ 4,300	≤ 4,300	≤ 4,300		
(5) (a) Arsenic (total)	Micrograms/L	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50
(5) (b) Arsenic (trivalent)	Micrograms/L measured as total recoverable Arsenic		≤ 36		≤ 36		
(6) Bacterio- logical Quality (Fecal Coliform Bacteria)	Number per 100 ml (Most Prob- able Number (MPN) or Membrane Filter (MF))	MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a minimum of 5 samples taken over a 30 day period.	MPN shall not exceed a me- dian value of 14 with not more than 10% of the samples exceeding 43, nor exceed 800 on any one day.	MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period.	MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period.		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(7) Bacterio- logical Quality (Total Coliform Bacteria)	Number per 100 ml (Most Prob- able Number (MPN) or Membrane Filter (MF))	≤ 1,000 as a monthly avg., nor exceed 1,000 in more than 20% of samples examined during any month, nor exceed 2,400 at any time, using either MPN or MF counts.	Median MPN shall not exceed 70, and not more than 10% of the samples shall exceed an MPN of 230.	≤ 1,000 as a monthly average; nor exceed 1,000 in more than 20% of the samples examined during any month; ≤ 2,400 at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period, using either the MPN or MF counts.	≤ 1,000 as a monthly average; nor exceed 1,000 in more than 20% of the samples examined during any month; ≤ 2,400 at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period, using either the MPN or MF counts.		
(8) Barium	Milligrams/L	≤ 1					
(9) Benzene	Micrograms/L	≤ 1.18	≤ 71.28 annual avg.	≤ 71.28 annual avg.	≤ 71.28 annual avg.		
(10) Beryllium	Micrograms/L	≤ 0.0077 annual avg.	≤ 0.13 annual avg.	≤ 0.13 annual avg.	≤ 0.13 annual avg.	≤ 100 in waters with a hardness in mg/L of CaCO ₃ of less than 250 and shall not exceed 500 in harder waters	

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(11) Biological Integrity	Per cent reduction of Shannon-Weaver Diversity Index	The Index for benthic macroinvertebrates shall not be reduced to less than 75% of background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 m ² area each, incubated for a period of four weeks.	The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 cm ² .	The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 m ² area each, incubated for a period of four weeks.	The Index for benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U. S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 cm ² .		
(12) BOD (Biochemical Oxygen Demand)		Shall not be increased to exceed values which would cause dissolved oxygen to be depressed below the limit established for each class and, in no case, shall it be great enough to produce nuisance conditions.					
(13) Boron	Milligrams/L					≤ 0.75	
(14) Bromates	Milligrams/L		≤ 100		≤ 100		
(15) Bromine (free molecular)	Milligrams/L		≤ 0.1		≤ 0.1		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(16) Cadmium	Micrograms/L See Notes (1) and (3).	$Cd \leq e^{(0.7852[\ln H]-3.49)}$	≤ 9.3	$Cd \leq e^{(0.7852[\ln H]-3.49)}$	≤ 9.3		
(17) Carbon tetrachloride	Micrograms/L	≤ 0.25 annual avg.; 3.0 max	≤ 4.42 annual avg.	≤ 4.42 annual avg.	≤ 4.42 annual avg.		
(18) Chlorides	Milligrams/L	≤ 250	Not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained.		Not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained.		In predominantly marine waters, not increased more than 10% above normal background. Normal daily and seasonal fluctuations shall be maintained.
(19) Chlorine (total residual)	Milligrams/L	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.01		
(20) (a) Chromium (trivalent)	Micrograms/L measured as total recoverable Chromium See Notes (1) and (3).	$Cr(III) \leq e^{(0.819[\ln H]+0.6848)}$		$Cr(III) \leq e^{(0.819[\ln H]+0.6848)}$		$Cr(III) \leq e^{(0.819[\ln H]+0.6848)}$	In predominantly fresh waters, $\leq e^{(0.819[\ln H]+0.6848)}$
(20) (b) Chromium (hexavalent)	Micrograms/L See Note (3).	≤ 11	≤ 50	≤ 11	≤ 50	≤ 11	In predominantly fresh waters, ≤ 11 . In predominantly marine waters, ≤ 50

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(21) Chronic Toxicity (see definition in Section 62-302.200(3), F.A.C. and also see below, "Substances in concentrations which...")							
(22) Color, etc. (see also Minimum Criteria, Odor, Phenols, etc.)	Color, odor, and taste producing substances and other deleterious substances, including other chemical compounds attributable to domestic wastes, industrial wastes, and other wastes					Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes, or fish survival.	
(23) Conductance, Specific	Micromhos/cm	Shall not be increased more than 50% above background or to 1275, whichever is greater		Shall not be increased more than 50% above background or to 1275, whichever is greater		Shall not be increased more than 50% above background or to 1275, whichever is greater	Shall not exceed 4,000
(24) Copper	Micrograms/L See Notes (1) and (3).	$Cu \leq e^{(0.8545[\ln H]-1.702)}$	≤ 3.7	$Cu \leq e^{(0.8545[\ln H]-1.702)}$	≤ 3.7	≤ 500	≤ 500
(25) Cyanide	Micrograms/L	≤ 5.2	≤ 1.0	≤ 5.2	≤ 1.0	≤ 5.0	≤ 5.0

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(26) Definitions (see Section 62- 302.200, F.A.C.)							
(27) Detergents	Milligrams/L	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
(28) 1,1- Dichloroethylene (1,1-di-chlo- roethene)	Micrograms/L	≤ 0.057 annual avg.; ≤ 7.0 max	≤ 3.2 annual avg.	≤ 3.2 annual avg.	≤ 3.2 annual avg.		
(29) Dichloromethan e (methylene chloride)	Micrograms/L	≤ 4.65 annual avg.	≤ 1,580 annual avg.	≤ 1,580 annual avg.	≤ 1,580 annual avg.		
(30) 2,4-Dinitro- toluene	Micrograms/L	≤ 0.11 annual avg.	≤ 9.1 annual avg.	≤ 9.1 annual avg.	≤ 9.1 annual avg.		
(31) Dissolved Oxygen	Milligrams/L	Shall not be less than 5.0. Normal daily and seasonal fluctuations above this level shall be maintained.	Shall not average less than 5.0 in a 24- hour period and shall never be less than 4.0. Normal daily and seasonal fluctuations above these levels shall be maintained.	Shall not be less than 5.0. Normal daily and seasonal fluctuations above these levels shall be maintained.	Shall not average less than 5.0 in a 24- hour period and shall never be less than 4.0. Normal daily and seasonal fluctuations above these levels shall be maintained.	Shall not average less than 4.0 in a 24- hour period and shall never be less than 3.0.	Shall not be less than 0.3, fifty percent of the time on an annual basis for flows greater than or equal to 250 cubic feet per second and shall never be less than 0.1. Normal daily and seasonal fluc- tuations above these levels shall be main- tained.
(32) Dissolved Solids	Milligrams/L	≤ 500 as a monthly avg.; ≤ 1,000 max					
(33) Fluorides	Milligrams/L	≤ 1.5	≤ 1.5	≤ 10.0	≤ 5.0	≤ 10.0	≤ 10.0

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(34) "Free Froms" (see Minimum Crite- ria in Section 62- 302.500, F.A.C.)							
(35) "General Criteria" (see Section 62- 302.510, F.A.C. and individual criteria)							
(36) (a) Halomethanes (Total trihalo- methanes) (total of bromoform, chlorodibromo- methane, dichlorobromo- methane, and chloroform). Individual halomethanes shall not exceed (b)1. to (b)5. below.	Micrograms/L	≤ 100					
(36) (b) 1. Halomethanes (individual): Bromoform	Micrograms/L	≤ 4.3 annual avg.	≤ 360 annual avg.	≤ 360 annual avg.	≤ 360 annual avg.		
(36) (b) 2. Halomethanes (individual): Chlorodibromo- methane	Micrograms/L	≤ 0.41 annual avg.	≤ 34 annual avg.	≤ 34 annual avg.	≤ 34 annual avg.		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(36) (b) 3. Halomethanes (individual): Chloroform	Micrograms/L	≤ 5.67 annual avg.	≤ 470.8 annual avg.	≤ 470.8 annual avg.	≤ 470.8 annual avg.		
(36) (b) 4. Halomethanes (individual): Chloromethane (methyl chloride)	Micrograms/L	≤ 5.67 annual avg.	≤ 470.8 annual avg.	≤ 470.8 annual avg.	≤ 470.8 annual avg.		
(36) (b) 5. Halomethanes (individual): Dichlorobromo- methane	Micrograms/L	≤ 0.27 annual avg.	≤ 22 annual avg.	≤ 22 annual avg.	≤ 22 annual avg.		
(37) Hexachlorobuta- diene	Micrograms/L	≤ 0.45 annual avg.	≤ 49.7 annual avg.	≤ 49.7 annual avg.	≤ 49.7 annual avg.		
(38) Imbalance (see Nutrients)							
(39) Iron	Milligrams/L	≤ 0.3	≤ 0.3	≤ 1.0	≤ 0.3	≤ 1.0	
(40) Lead	Micrograms/L See Notes (1) and (3).	$Pb \leq e^{(1.273[\ln H] - 4.705)}$	≤ 8.5	$Pb \leq e^{(1.273 [\ln H] - 4.705)}$	≤ 8.5	≤ 50	≤ 50
(41) Manganese	Milligrams/L		≤ 0.1				
(42) Mercury	Micrograms/L	≤ 0.012	≤ 0.025	≤ 0.012	≤ 0.025	≤ 0.2	≤ 0.2
(43) Minimum Criteria (see Section 62-302. 500, F.A.C.)							
(44) Mixing Zones (See Section 62- 4.246, F.A.C.)							

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(45) Nickel	Micrograms/L See Notes (1) and (3).	$Ni \leq e^{(0.846[\ln H]+0.0584)}$	≤ 8.3	$Ni \leq e^{(0.846[\ln H]+0.0584)}$	≤ 8.3	≤ 100	
(46) Nitrate	Milligrams/L as N	≤ 10 or that concentration that exceeds the nutrient criteria					
(47) Nuisance Species		Substances in concentrations which result in the dominance of nuisance species: none shall be present.					
(48) (a) Nutrients		The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Sections 62-302.300, 62-302.700, and 62-4.242, F.A.C.					
(48) (b) Nutrients		In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.					
(49) Odor (also see Color, Minimum Criteria, Phenolic Compounds, etc.)	Threshold odor number		Shall not exceed 24 at 60 degrees C as a daily average.				Odor producing substances: only in such amounts as will not unreasonably interfere with use of the water for the design- ated purpose of this classifi- cation.
(50) (a) Oils and Greases	Milligrams/L	Dissolved or emulsified oils and greases shall not exceed 5.0	Dissolved or emulsified oils and greases shall not exceed 5.0	Dissolved or emulsified oils and greases shall not exceed 5.0	Dissolved or emulsified oils and greases shall not exceed 5.0	Dissolved or emulsified oils and greases shall not exceed 5.0	Dissolved or emulsified oils and greases shall not exceed 10.0
(50) (b) Oils and Greases		No undissolved oil, or visible oil defined as iridescence, shall be present so as to cause taste or odor, or otherwise interfere with the beneficial use of waters.					

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(51) Pesticides and Herbicides							
(51) (a) 2,4,5-TP	Micrograms/L	≤ 10					
(51) (b) 2-4-D	Micrograms/L	≤ 100					
(51) (c) Aldrin	Micrograms/L	≤ .00013 annual avg.; 3.0 max	≤ .00014 annual avg.; 1.3 max	≤ .00014 annual avg.; 3.0 max	≤ .00014 annual avg.; 1.3 max		
(51) (d) Beta- hexachlorocyclo- hexane (b-BHC)	Micrograms/L	≤ 0.014 annual avg.	≤ 0.046 annual avg.	≤ 0.046 annual avg.	≤ 0.046 annual avg.		
(51) (e) Chlordane	Micrograms/L	≤ 0.00058 annual avg.; 0.0043 max	≤ 0.00059 annual avg.; 0.004 max	≤ 0.00059 annual avg.; 0.0043 max	≤ 0.00059 annual avg.; 0.004 max		
(51) (f) DDT	Micrograms/L	≤ 0.00059 annual avg.; 0.001 max	≤ 0.00059 annual avg.; 0.001 max	≤ 0.00059 annual avg.; 0.001 max	≤ 0.00059 annual avg.; 0.001 max		
(51) (g) Demeton	Micrograms/L	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1		
(51) (h) Dieldrin	Micrograms/L	≤ 0.00014 annual avg.; 0.0019 max	≤ 0.00014 annual avg.; 0.0019 max	≤ 0.00014 annual avg.; 0.0019 max	≤ 0.00014 annual avg.; 0.0019 max		
(51) (i) Endosulfan	Micrograms/L	≤ 0.056	≤ 0.0087	≤ 0.056	≤ 0.0087		
(51) (j) Endrin	Micrograms/L	≤ 0.0023	≤ 0.0023	≤ 0.0023	≤ 0.0023		
(51) (k) Guthion	Micrograms/L	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.01		
(51) (l) Heptachlor	Micrograms/L	≤ 0.00021 annual avg.; 0.0038 max	≤ 0.00021 annual avg.; 0.0036 max	≤ 0.00021 annual avg.; 0.0038 max	≤ 0.00021 annual avg.; 0.0036 max		
(51) (m) Lindane (γ-benzene hexachloride)	Micrograms/L	≤ 0.019 annual avg.; 0.08 max	≤ 0.063 annual avg.; 0.16 max	≤ 0.063 annual avg.; 0.08 max	≤ 0.063. annual avg.; 0.16 max		
(51) (n) Malathion	Micrograms/L	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1		
(51) (o) Methoxychlor	Micrograms/L	≤ 0.03	≤ 0.03	≤ 0.03	≤ 0.03		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(51) (p) Mirex	Micrograms/L	≤ 0.001	≤ 0.001	≤ 0.001	≤ 0.001		
(51) (q) Parathion	Micrograms/L	≤ 0.04	≤ 0.04	≤ 0.04	≤ 0.04		
(51) (r) Toxaphene	Micrograms/L	≤ 0.0002	≤ 0.0002	≤ 0.0002	≤ 0.0002		
(52) (a) pH (Class I and Class IV Waters)	Standard Units	Shall not vary more than one unit above or below natural background provided that the pH is not lowered to less than 6 units or raised above 8.5 units. If natural background is less than 6 units, the pH shall not vary below natural background or vary more than one unit above natural background. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below background.					
(52) (b) pH (Class II Waters)	Standard Units	Shall not vary more than one unit above or below natural background of coastal waters as defined in Section 62-302.520(3)(b), F.A.C., or more than two-tenths unit above or below natural background of open waters as defined in Section 62-302.520(3)(f), F.A.C., provided that the pH is not lowered to less than 6.5 units or raised above 8.5 units. If natural background is less than 6.5 units, the pH shall not vary below natural background or vary more than one unit above natural background for coastal waters or more than two-tenths unit above natural background for open waters. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below natural background of coastal waters or more than two-tenths unit below natural background of open waters.					
(52) (c) pH (Class III Waters)	Standard Units	Shall not vary more than one unit above or below natural background of predominantly fresh waters and coastal waters as defined in Section 62-302.520(3)(b), F.A.C. or more than two-tenths unit above or below natural background of open waters as defined in Section 62-302.520(3)(f), F.A.C., provided that the pH is not lowered to less than 6 units in predominantly fresh waters, or less than 6.5 units in predominantly marine waters, or raised above 8.5 units. If natural background is less than 6 units, in predominantly fresh waters or 6.5 units in predominantly marine waters, the pH shall not vary below natural background or vary more than one unit above natural background of predominantly fresh waters and coastal waters, or more than two-tenths unit above natural background of open waters. If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below natural background of predominantly fresh waters and coastal waters, or more than two-tenths unit below natural background of open waters.					
(52) (d) pH (Class V Wa- ters)	Standard Units	Not lower than 5.0 nor greater than 9.5 except certain swamp waters which may be as low as 4.5.					
(53)(a) Phenolic Compounds: Total		Phenolic compounds other than those produced by the natural decay of plant material, listed or unlisted, shall not taint the flesh of edible fish or shellfish or produce objectionable taste or odor in a drinking water supply.					

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(54) Phosphorus (Elemental)	Micrograms/L		≤ 0.1		≤ 0.1		
(55) Phthalate Esters	Micrograms/L	≤ 3.0		≤ 3.0			
(56) Polychlorinated Biphenyls (PCBs)	Micrograms/L	< 0.000044 annual avg.; 0.014 max	< 0.000045 annual avg.; 0.03 max	≤ 0.000045 annual avg.; 0.014 max	≤ 0.000045 annual avg.; 0.03 max		
(57) (a) Polycyclic Aro- matic Hydrocar- bons (PAHs). Total of: Ace- naphthylene; Ben- zo(a)anthracene ; Benzo(a)pyrene; Benzo(b)fluoran- thene; Benzo- (ghi)perylene; Benzo(k)fluorant hene; Chrysene; Dibenzo- (a,h)anthracene; Indeno(1,2,3- cd)pyrene; and Phenanthrene	Micrograms/L	≤ 0.0028 annual avg.	≤ 0.031 annual avg.	≤ 0.031annual avg.	≤ 0.031 annual avg.		
(57) (b) 1 (Individual PAHs): Acenaphthene	Milligrams/L	< 1.2 See Note (2).	< 2.7 See Note (2).	< 2.7 See Note (2).	< 2.7 See Note (2).		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(57) (b) 2. (Individual PAHs): Anthracene	Milligrams/L	< 9.6 See Note (2).	< 110 See Note (2).	< 110 See Note (2).	< 110 See Note (2).		
(57) (b) 3. (Individual PAHs): Fluoranthene	Milligrams/L	< 0.3 See Note (2).	< 0.370 See Note (2).	< 0.370 See Note (2).	< 0.370 See Note (2).		
(57) (b) 4. (Individual PAHs): Fluorene	Milligrams/L	< 1.3 See Note (2).	< 14 See Note (2).	< 14 See Note (2).	< 14 See Note (2).		
(57) (b) 5. (Individual PAHs): Pyrene	Milligrams/L	< 0.96 See Note (2).	< 11 See Note (2).	< 11 See Note (2).	< 11 See Note (2).		
(58) (a) Radioactive substances (Combined radium 226 and 228)	Picocuries/L	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
(58) (b) Radioactive substances (Gross alpha particle activity including radium 226, but excluding radon and uranium)	Picocuries/L	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15
(59) Selenium	Micrograms/L	≤ 5.0	≤ 71	≤ 5.0	≤ 71		
(60) Silver	Micrograms/L See Note (3).	≤ 0.07	See Minimum criteria in Section 62- 302.500(3)	≤ 0.07	See Minimum criteria in Section 62- 302.500(3)		

CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(61) Specific Conductance (see Conductance, Specific, above)							
(62) Substances in concentrations which injure, are chronically toxic to, or produce adverse physiological or behavioral response in humans, plants, or animals		None shall be present.					
(63) 1,1,2,2-Tetra-chloroethane	Micrograms/L	≤ 0.17 annual avg.	≤ 10.8 annual avg.	≤ 10.8 annual avg.	≤ 10.8 annual avg.		
(64) Tetrachloroethylene (1,1,2,2-tetrachloroethene)	Micrograms/L	≤ 0.8 annual avg., ≤ 3.0 max	≤ 8.85 annual avg.	≤ 8.85 annual avg.	≤ 8.85 annual avg.		
(65) Thallium	Micrograms/L	< 1.7	< 6.3	< 6.3	< 6.3		
(66) Thermal Criteria (See Section 62-302.520)							


CRITERIA FOR SURFACE WATER (RULE 62-302.530, F.A.C.)

Parameter	Units	Class I: Potable Water Supply	Class II: Shellfish Propagation or Harvesting	Class III Predominantly Fresh Waters	Class III Predominantly Marine Waters	Class IV: Agricultural Water Supplies	Class V: Naviga- tion, Utility, and Industrial Use
(67) Total Dissolved Gases	Percent of the saturation value for gases at the existing atmos- pheric and hydrostatic pressures	≤ 110% of saturation value	≤ 110% of saturation value	≤ 110% of saturation value	≤ 110% of saturation value		
(68) Transparency	Depth of the compensation point for photosynthetic activity	Shall not be reduced by more than 10% as compared to the natural background value.	Shall not be reduced by more than 10% as compared to the natural background value.	Shall not be reduced by more than 10% as compared to the natural background value.	Shall not be reduced by more than 10% as compared to the natural background value.		
(69) Trichloroethylen e (trichloroethene)	Micrograms/L	≤ 2.7 annual avg., ≤ 3.0 max	≤ 80.7 annual avg.	≤ 80.7 annual avg.	≤ 80.7 annual avg.		
(70) Turbidity	Nephelometric Turbidity Units (NTU)	≤ 29 above natural background conditions	≤ 29 above natural background conditions	≤ 29 above natural background conditions	≤ 29 above natural background conditions	≤ 29 above natural background conditions	≤ 29 above natural background conditions
(71) Zinc	Micrograms/L See Notes (1) and (3).	$Zn \leq e^{(0.8473[\ln H] + 0.884)}$	≤ 86	$Zn \leq e^{(0.8473[\ln H] + 0.884)}$	≤ 86	≤ 1,000	≤ 1,000



ATTACHMENT 5

**Florida Ground Water Standards
and Guidance Concentrations
(June 1994)**



GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
103-33-3	Azobenzene	4	Carcinogen
B			
7440-39-3	Barium	2,000	Primary Standard
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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	Chlorpyrifos-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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
100-25-4	p-Dinitrobenzene	50	Systemic Toxicant
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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
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 (ldryl)	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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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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

O

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
152-16-9	Octomethylpyrophosphoramidate	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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
7287-19-6	Prometryn	28	Systemic Toxicant
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

GUIDANCE CONCENTRATIONS

CAS #	PARAMETER	CONCENTRATION ug/L	BASIS
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			
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

GUIDANCE CONCENTRATIONS

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