

CALFED Bay-Delta Program - For Internal CALFED Purposes Only
A Compilation of Existing Water Quality Criteria for Proposed Parameters of Concern
for Review by the CALFED Water Quality Program Parameter Assessment Team
January 28, 1998

Existing Water Quality Criteria¹

Proposed Parameter of Concern	Central Valley RWQCB Basin Plan (Region 5) ^{2,3,4,5}	San Francisco Bay RWQCB Basin Plan (Region 2) ^{3,4,5}	National Toxics Rule ^{4,5}	California Department of Health Services (Title 22, CCR) ^{5,6,7}	USEPA Ambient Water Quality Criteria ^{4,5}	Health Based Criteria ⁸	National Academy of Sciences ⁷	California Toxics Rule ^{4,5}
Nitrogen	<p><u>Water:</u> •Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses. Waters shall not contain chemical constituents that adversely affect beneficial uses. •At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. •Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life.</p>	<p><u>Water:</u> Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation.</p> <p><u>Drinking Water:</u> 10 mg/L</p> <p><u>Agriculture:</u> Threshold: 50 mg/L^m Limit: 30 mg/L^{h,m} Limit for Livestock Watering: 100.0mg/L^m</p>	Not Addressed	No MCL for nitrogen; however, a Maximum Contaminant Level for Nitrate + Nitrite (as N) of 10 mg/L ^{1,m}	Not Addressed	<p><u>Drinking Water:</u> USEPA Primary MCL Nitrate (as N) 10 mg/L</p>	Not Addressed	Not Addressed

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Nitrite	<p><u>Water:</u></p> <ul style="list-style-type: none"> Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses. At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<p><u>Water:</u></p> <p>Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation.</p> <p><u>Drinking Water:</u> 10 mg/L^m</p> <p><u>Agriculture:</u> Threshold: 50 mg/L^m Limit: 30 mg/L^{h,m} Limit for Livestock Watering: 100.0 mg/L^m</p>	Not Addressed	<p><u>Maximum Contaminant Level:</u> 1 mg/L (as N)¹</p>	Not Addressed	<p><u>Drinking Water:</u> USEPA Primary MCL 1 mg/L</p> <p><u>Health Advisories or Suggested No Adverse Response Levels (SNARLS) for other than cancer risk:</u></p> <p>USEPA IRIS Reference Dose as Water Quality Criterion: 700 µg/L¹⁴</p>	Not Addressed	Not Addressed	Not Addressed

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Bioavailable Phosphorus	<p><u>Water:</u></p> <ul style="list-style-type: none"> •Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses. •At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. •Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<p><u>Water:</u></p> <p>Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation.</p>	Not Addressed	Not Addressed	Not Addressed	<p><u>Health Advisories or Suggested No-Adverse Response Levels (SNARLs) for other than cancer risk:</u></p> <p>USEPA 0.1 µg/L**</p> <p>IRIS Reference Dose as a Water Quality Criterion: 0.14 µg/L**</p>	Not Addressed	Not Addressed

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MAHs ⁵ (monocyclic aromatic hydrocarbons)	<p><i>No individual or joint criteria for MAHs.⁷</i></p> <ul style="list-style-type: none"> • At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. • Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<p><i>No specific criteria or objective for MAHs.⁷</i></p>	<p><i>There is not one specific criteria that covers all the compounds which could fall under MAHs. The NTR has criteria for some of those compounds, but not all.⁷</i></p>	<p><i>No specific criteria for MAHs as a group.⁷</i></p>	<p><i>Not addressed specifically as MAHs. There are a number of compounds which are MAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>Not addressed specifically as MAHs. There are a number of compounds which are MAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>Not addressed specifically as MAHs. There are a number of compounds which are MAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>No specific criteria for all MAHs.⁷</i></p>

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PAHs ⁹ (polycyclic aromatic hydrocarbons)	<p><i>No individual or joint criteria for PAHs.¹⁰</i></p> <ul style="list-style-type: none"> •At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. •Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<p><u>Water:</u> U.S. EPA water quality criteria indicate that 0.031 µg/L in both fresh water and salt water is protective of human health, based on setting the acceptable lifetime risk for cancer at the 10⁻⁶ risk level. PAHS are those compounds identified by EPA Method 610.</p>	<p><i>There is not one specific criteria that covers all the compounds which could fall under PAHs. The NTR has criteria for some of those compounds, but not all.¹¹</i></p>	<p><i>No specific criteria for PAHs as a group.¹²</i></p>	<p><i>Not addressed specifically as PAHs. There are a number of compounds which are PAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>Not addressed specifically as PAHs. There are a number of compounds which are PAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>Not addressed specifically as PAHs. There are a number of compounds which are PAHs. Need to define a specific compound to determine criteria.</i></p>	<p><i>No specific criteria for all PAHs. There are criteria for some individual PAHs but no specific criteria for all.¹³</i></p>

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MTBE ⁸	Not Addressed	Not Addressed	Not Addressed	<u>Action Level:</u> ¹ 35 µg/L ¹	Not Addressed	See attached summary on MTBE	Not Addressed	Not Addressed
Boat Exhaust/Gasoline Byproducts	<i>No individual or joint criteria for boat exhaust/gasoline byproducts.⁶</i> <ul style="list-style-type: none"> • At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. • Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<i>No specific criteria or objective for boat exhaust/gasoline byproducts.³</i> <ul style="list-style-type: none"> • Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses. 	<i>No specific criteria for boat exhaust/gasoline byproducts.⁷</i>	<i>No specific criteria for boat exhaust/gasoline byproducts as a group.²</i>	<i>Not addressed specifically as boat exhaust/gasoline byproducts. Boat exhaust/gasoline byproducts could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>Not addressed specifically as boat exhaust/gasoline byproducts. Boat exhaust/gasoline byproducts could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>Not addressed specifically as boat exhaust/gasoline byproducts. Boat exhaust/gasoline byproducts could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>No specific criteria for boat exhaust/gasoline byproducts.⁷</i>

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oil/grease	<u>Water:</u> Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.	<u>Water:</u> Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.	<i>No specific criteria for boat oil and grease.⁹</i>	<i>No specific criteria for oil and grease as a group.¹⁰</i>	<i>Not addressed specifically as oil or grease. Oil and grease could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>Not addressed specifically as oil or grease. Oil and grease could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>Not addressed specifically as oil or grease. Oil and grease could refer to many compounds. Need to define a specific compound to determine criteria.</i>	<i>No specific criteria for oil and grease.¹²</i>

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Arsenic ^{6b}	<p><u>Water:</u> 0.01 mg/L</p> <p><u>Drinking Water:</u> .05 mg/L^a</p> <p>•At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations.</p> <p>•Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.</p> <p>• All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life.</p>	<p><u>Water:</u> 190.0 µg/L (4-day average)^c 360.0 µg/L (1-hour average)^c</p> <p><u>Drinking Water:</u> 0.05 mg/L^a</p> <p><u>Agriculture:</u></p> <p>Threshold: 0.1 mg/L Limit: 2.0 mg/L Limit for Livestock Watering: 0.2 mg/L</p>	<p><u>Freshwater:</u> 360 µg/L (short term concentration acute limit)^{8,9}</p> <p>190 µg/L (4-day average concentration chronic limit)^{8,9}</p>	<p><u>Maximum Contaminant Level:</u> .05 mg/L^a</p>	<p><u>Freshwater Aquatic Life Protection:</u>⁵ 190 µg/L (4-day average)⁸ 360 µg/L (1 hour average)⁸</p> <p><u>Human Health and Welfare Protection -One in a Million Incremental Cancer Risk Estimate:</u></p> <p>For Consumption of Water and Organisms: 0.018 µg/L⁸</p> <p>For Consumption of Organisms Only: 0.14 µg/L⁸</p>	<p><u>Drinking Water:</u> Primary MCL 50 µg/L</p>	Not Addressed	<p><u>Freshwater:</u> 340 µg/L (short term concentration acute limit)^{8,9,10}</p> <p>150 µg/L (4-day average concentration chronic limit)^{8,9,10}</p>

D-034970

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Simazine	<p><u>Drinking Water:</u> 0.0004 mg/L⁴</p> <p>•At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations.</p> <p>•Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.</p> <p>• All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life.</p>	<p><u>Drinking Water:</u> 0.004 mg/L⁴</p>	Not Addressed	<p><u>Maximum Contaminant Level:</u> 0.004 mg/L⁴</p>	<p><u>Freshwater Aquatic Life Protection:</u> 10 µg/L (Maximum-Instantaneous)¹</p>	<p><u>Drinking Water:</u> USEPA Primary MCL 4 µg/L</p> <p><u>Health Advisories or Suggested No Adverse Response Levels (SNARLS) for other than cancer risk:</u></p> <p>USEPA IRIS Reference Dose as Water Quality Criterion: 3.5 µg/L</p>	<p><u>Health Advisory:</u> 1505 µg/L</p>	Not Addressed

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Proposed Parameter of Concern	Central Valley RWQCB Basin Plan (Region 5) ^{2,41,42}	San Francisco Bay RWQCB Basin Plan (Region 2) ^{3,43}	National Toxics Rule ⁴⁴	California Department of Health Services (Title 22, CCR) ^{5,44}	USEPA Ambient Water Quality Criteria ^{6,45}	Health Based Criteria ⁴	National Academy of Sciences ⁷	California Toxics Rule ^{6,46}
Ziram	<ul style="list-style-type: none"> •At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. •Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	Not Addressed	Not Addressed	Not Addressed	Not Addressed	Not Addressed	87.5 µg/L	Not Addressed

D-034972

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Dioxins ^{6c}	<p><u>Drinking Water:</u> (2,3,7,8-TCDD) 3 x 10⁻⁸ mg/L⁴</p> <p>•At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations.</p> <p>•Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.</p> <p>• All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life.</p>	<p><u>Drinking Water:</u> (2,3,7,8-TCDD) 3 x 10⁻⁸ mg/L⁴</p>	<p><u>Human Health:</u> (2,3,7,8-TCDD) 0.00000013 µg/L (consumption of water and organisms)⁴ 0.00000014 µg/L (consumption of organisms only)⁴</p>	<p><u>Maximum Contaminant Level:</u> (2,3,7,8-TCDD) 3 x 10⁻⁸ mg/L</p>	Not Addressed	<p><u>One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water:</u></p> <p>Cal/EPA Cancer Potency Factor as a water quality criterion 0.00000027 µg/L⁸</p>	Not Addressed	<p><u>Human Health:</u> (2,3,7,8-TCDD) 0.00000013 µg/L (consumption of water and organisms)⁴ 0.00000014 µg/L (consumption of organisms only)⁴</p>

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Chlorine	<ul style="list-style-type: none"> • At a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22, California Code of Regulations. • Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. 	<p>Not Addressed</p> <ul style="list-style-type: none"> • All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organism. 	Not Addressed	Not Addressed	<p><u>Freshwater Aquatic Life Protection:</u>²</p> <p>11 µg/L (4-day average)^f</p> <p>19 µg/L (1 hour average)^f</p>	<p><u>Health Advisories or Suggested No Adverse Response Levels (SNARLS) for other than cancer risk:</u></p> <p>USEPA IRIS References Dose as a Water Quality Criterion:</p> <p>700 µg/L</p>	Not Addressed	Not Addressed

¹ Documents included in the Suggested Criteria for Developing Water Quality Targets (recommended by the Environment, Agriculture, and Drinking Water subteams) were examined to develop the criteria in this table.

² Central Valley Regional Water Quality Control Board. (May 1995). Water Quality Control Plan Central Valley-Sacramento/San Joaquin River Basins - Region 5.

³ San Francisco Bay Regional Water Quality Control Board. (June 1995). Water Quality Control Plan San Francisco Bay Basin (Region 2).

⁴ United States Environmental Protection Agency. Federal Register, Part II. Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants; States' s Compliance Final Rule, 40 CFR Part 131, (December 1992).

⁵ Title 22, California Code of Regulations. Various articles, chapters, and sections.

⁶ As cited in Marshack, Jon. July 1995. A Compilation of Water Quality Goals. California Regional Water Quality Control Board Central Valley Region. Sacramento, CA, and as cited in U.S. Environmental Protection Agency, *Water Quality Criteria*, 1972 (1973); U.S. Environmental Protection Agency, Federal Register, Volume 57, No. 246 (Tuesday 22 December 1992), pp. 60848-60923 [National Toxics Rule]; U.S. Environmental Protection Agency, Federal Register, Volume 60, No. 86 (Thursday, 4 May 1995), pp. 22228-22237 [National Toxics Rule revisions]; U.S. Environmental Protection Agency, *Ambient Water Quality Criteria* documents (various dates).

⁷ National Academy of Sciences, *Drinking Water and Health*, Vol. 1 (1977), Vol. 3 (1980), Vol. 4 (1982), Vol. 5 (1983), Vol. 6 (1986), and Vol. 7 (1987).

⁸ United States Environmental Protection Agency. Federal Register, , Part II. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Proposed Rule, 40 CFR Part 131, (February 1997).

^a Secondary Maximum Contaminant Levels as specified in Table 64449-A of Section 64449, Title 22 of the California Code of Regulations, as of June 19, 1995.

^b For sensitive crops. Values are actually for $\text{NO}_3\text{-N} + \text{NH}_4\text{-N}$.

^c Source: U.S. EPA 1984.

^d Maximum Contaminant Levels as specified in Table 64444-A (Organic Chemicals) of Section 64444, Title 22 of the California Code of Regulations, as of September 22, 1995.

^e Expressed as dissolved.

^f For total residual chlorine.

^g Marshack, Jon. July 1995. A Compilation of Water Quality Goals. California Regional Water Quality Control Board Central Valley Region. Sacramento, CA.

^h Monitoring required for vulnerable sources.

ⁱ Actions levels are advisory levels for unregulated chemicals and are not enforceable standards.

^j Maximum Contaminants Levels as specified in Table 64431-A, Title 22 of the California Code of Regulations as of June 19, 1995.

* National Academy of Sciences, *Drinking Water and Health*, Vol. 1 (1977), Vol. 3 (1980), Vol. 4 (1982), Vol. 5 (1983), Vol. 6 (1986), and Vol. 7 (1987).

¹ U.S. Environmental Protection Agency, *Water Quality Criteria*, 1972 (1973).

^m Nitrate + Nitrite (as N).

* Criteria Maximum Concentration (CMC) equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects.

° Criteria Continuous Concentration (CCC) equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects.

* Criteria for these metals are expressed as a function of the water-effect ratio (WER). WER is a method for optional site-specific criteria development for certain metals. The WER approach compares bioavailability and toxicity of a specific pollutant in receiving water and in laboratory waters. WER is an appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

* These freshwater and saltwater criteria for metals are expressed in terms of the dissolved fractions of the metals in the water column. Criterion values were calculated by using EPA's Clean Water Act 304(a) guidance values (described in the total recoverable fraction) and then applying the conversion factors.

* This criterion has been recalculated pursuant to the 1995 Update: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water, Office of Water, EPA-820-B-96-001. September 1996. See also Great Lakes Water Quality Initiative Criteria Documents for the Protection of Aquatic Life in Ambient Water, Office of Water, EPA-80-B-95-004. March 1995. available from the Water Resource Center. USEPA, 40 M St. SW., mail code RC 4100. Washington. DC 20460.

* These criteria are based on carcinogenicity of 10⁻⁶ risk.

¹ Criteria in the matrix based on carcinogenicity (10⁻⁶ risk). For a risk level of 10⁻⁶, move the decimal point in the matrix value one place to the right.

* Personal Communication, Gail Linck, State Water Resources Control Board, January 15, 1998, regarding PAHs. Ms. Linck is not aware of any existing enforceable criteria that applies to all PAHs. In the State Plans (Inland Surface Waters Plan and Enclosed Bays and Estuaries Plan), there is a criteria for PAHs defined as "...the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene. See attached sheet from the Office of Environmental Health Hazard Assessment for a Weighting Scheme for PAHs.

⁷ Personal Communication, Diane Frankel, USEPA, January 20, 1998.

^m Personal Communication, Chris Foe, Central Valley Regional Water Quality Control Board, January 21, 1998.

^s Personal Communication, Ron Gervason, San Francisco Bay Regional Water Quality Control Board, January 21, 1998.

⁷ Personal Communication, Phil Woods, USEPA, January 21, 1998.

^z Personal Communication, Alexis Milea, California Department of Health Services, January 21, 1998.

^{aa} See attached additional information regarding MTBE.

^{bb} See attached additional information regarding arsenic.

^{cc} See attached additional information regarding dioxins.

⁴⁴ This section peer reviewed by the California Department of Health Services, January 22, 1998.

⁴⁵ For white phosphorus.

⁴⁶ Expressed as total recoverable.

⁴⁷ These sections were peer reviewed by USEPA, January 27, 1998.

⁴⁸ This section was peer reviewed by the Central Valley Regional Water Quality Control Board, January 26, 1998.

⁴⁹ Assumes 70 kg body weight and 2 liters/days water consumption.

⁵⁰ There are a number of MAHs. Principals are benzene, ethyl benzene, toluene, zylene.

⁵¹ Assumes 70 kg body weight, 2 liters/day water consumption, and 20 % relative source contribution. An additional uncertainty factor of 10 is used for class C carcinogens.

⁵² As cited in Marshack, Jon, July 1996. A Compilation of Water Quality Goals. California Regional Water Quality Control Board Central Valley Region. Sacramento, CA.