# Contact Recreation Water PCLs

## Direct Human Contact Recreation Water PCLs

Under TRRP (§350.71(c)(7), §350.75(i)(13) and (14)), surface water PCLs must be established when TCEQ determines that relevant exposure pathways are complete or reasonably anticipated to be complete for a given chemical of concern (COC). Pathways likely to be relevant to surface water include: ingestion of surface water (incidental or as drinking water), dermal contact with surface water, and ingestion of contaminated fish/shellfish from the surface water body. As indicated in TRRP guidance (i.e., *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24)), when TSWQS values which consider human exposure to surface water via fish/shellfish ingestion and drinking water ingestion (first column in the HH $^{SW}$RBEL Table or column "A" of Table 3 in Chapter 307) are used as the $^{SW}$RBELs, it is generally not necessary to evaluate contact recreation (e.g., swimming) as it is reasonable to assume that concentrations that are protective of drinking water consumption and transfers to fish will also be protective of dermal contact and the incidental ingestion of surface water during recreation. However, when a water body is not classified as a drinking water source, the TSWQS allow surface water quality standards to be set based solely on consideration of uptake of COCs into fish/shellfish and aquatic life criteria and it may be necessary to evaluate contact recreation (i.e., incidental ingestion and dermal contact with surface water) in order to fully comply with the risk assessment requirements under TRRP (see Section 5.1 of TRRP-24 for additional information).

## Summary of Recreation Water PCL Development

Individuals using surface water for recreation (e.g., swimming) may be exposed to COCs through the incidental ingestion of surface water and dermal contact. In developing PCLs for recreation water exposure pathways, Tier 1 exposure factors were used when applicable (e.g., exposure duration, body weight). However, certain pathway-specific exposure parameters (e.g., exposure frequency, incidental surface water ingestion rate) are not available in TRRP and were taken from Table 5-1 of TRRP-24. The residential RBEL-4 equations (see Figure 30 TAC §350.74 (a)) were used to evaluate the incidental ingestion of surface water pathway by changing the exposure frequency and the ingestion rate (including calculation of an age-adjusted incidental ingestion rate of 0.126 L-year/kg-day). Dermal exposure to surface water was evaluated using equations and inputs provided by USEPA in *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final Guidance (July 2004)* and errata (www.epa.gov/oswer/riskassessment/ragse/pdf/part_e_final_revision_7-27-06.pdf). TRRP chemical/physical data (i.e., $\log K_{ow}$, molecular weight) were used to calculate skin permeability coefficients (i.e., $K_p$ values). The child exposure scenario was most sensitive for noncarcinogenic hazard, and the age-adjusted scenario was most sensitive for carcinogenic risk. The contact recreation PCL table for surface water will be updated periodically (i.e., every March along with the other PCL and RBEL tables).

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Acenaphthene | 83-32-9 | 2.44E+00 | n | --- | --- | --- | 2.44E+00 | 5.62E+01 | 2.55E+00 |
| Acenaphthylene | 208-96-8 | 3.26E+00 | n | --- | --- | --- | 3.26E+00 | 5.62E+01 | 3.46E+00 |
| Acetaldehyde | 75-07-0 | 7.46E+01 | n | --- | --- | --- | 7.46E+01 | 9.36E+01 | 3.67E+02 |
| Acetone (2-propanone) | 67-64-1 | 7.80E+02 | n | --- | --- | --- | 7.80E+02 | 8.42E+02 | 1.06E+04 |
| Acetone cyanohydrin | 75-86-5 | 6.93E-01 | n | --- | --- | --- | 6.93E-01 | 7.49E-01 | 9.35E+00 |
| Acetophenone | 98-86-2 | 5.36E+01 | n | --- | --- | --- | 5.36E+01 | 9.36E+01 | 1.26E+02 |
| Acetylaminofluorene, 2- | 53-96-3 | 3.43E-03 | c | 3.43E-03 | 1.37E-02 | 4.57E-03 | --- | --- | --- |
| Acifluorfen, sodium | 62476-59-9 | 1.20E+01 | n | --- | --- | --- | 1.20E+01 | 1.22E+01 | 7.57E+02 |
| Acridine | 260-94-6 | 3.65E-01 | n | --- | --- | --- | 3.65E-01 | 2.81E+00 | 4.19E-01 |
| Acrolein | 107-02-8 | 4.26E-01 | n | --- | --- | --- | 4.26E-01 | 4.68E-01 | 4.70E+00 |
| Acrylamide | 79-06-1 | 1.10E-02 | c | 1.10E-02 | 1.16E-02 | 2.44E-01 | 1.82E-01 | 1.87E-01 | 6.50E+00 |
| Acrylic acid (propenoic acid) | 79-10-7 | 3.93E+02 | n | --- | --- | --- | 3.93E+02 | 4.68E+02 | 2.47E+03 |
| Acrylonitrile | 107-13-1 | 7.57E-02 | c | 7.57E-02 | 9.63E-02 | 3.55E-01 | 8.03E-01 | 9.36E-01 | 5.68E+00 |
| Adipic acid (hexanedioic acid) | 124-04-9 | 4.43E+03 | n | --- | --- | --- | 4.43E+03 | 4.68E+03 | 8.33E+04 |
| Alachlor | 15972-60-8 | 1.04E-01 | c | 1.04E-01 | 6.50E-01 | 1.24E-01 | 2.24E+00 | 9.36E+00 | 2.95E+00 |
| Aldicarb | 116-06-3 | 7.44E-01 | n | --- | --- | --- | 7.44E-01 | 9.36E-01 | 3.64E+00 |
| Aldicarb sulfone | 1646-88-4 | 9.27E-01 | n | --- | --- | --- | 9.27E-01 | 9.36E-01 | 9.97E+01 |
| Allyl alcohol | 107-18-6 | 4.08E+00 | n | --- | --- | --- | 4.08E+00 | 4.68E+00 | 3.19E+01 |
| Allyl chloride | 107-05-1 | 3.46E+00 | n | --- | --- | --- | 3.46E+00 | 9.36E+00 | 5.49E+00 |
| Aluminum | 7429-90-5 | 4.03E+02 | n | --- | --- | --- | 4.03E+02 | 9.36E+02 | 7.09E+02 |
| Ametryn | 834-12-8 | 2.80E+00 | n | --- | --- | --- | 2.80E+00 | 8.42E+00 | 4.20E+00 |
| Aminobiphenyl, 4- (1,1-biphenyl-4-amine) | 92-67-1 | 8.95E-04 | c | 8.95E-04 | 8.52E-03 | 1.00E-03 | --- | --- | --- |
| Amino-2,6-dinitrotoluene, 4- | 19406-51-0 | 5.94E-02 | n | 1.41E+00 | 5.20E+00 | 1.94E+00 | 5.94E-02 | 1.56E-01 | 9.59E-02 |
| Amino-4,6-dinitrotoluene, 2- | 35572-78-2 | 4.97E-02 | n | 1.15E+00 | 5.20E+00 | 1.48E+00 | 4.97E-02 | 1.56E-01 | 7.29E-02 |
| Aminopyridine, 4- | 504-24-5 | 1.76E-02 | n | --- | --- | --- | 1.76E-02 | 1.87E-02 | 2.89E-01 |
| Aniline | 62-53-3 | 4.69E+00 | n | 5.52E+00 | 9.12E+00 | 1.40E+01 | 4.69E+00 | 6.55E+00 | 1.65E+01 |
| Anthracene | 120-12-7 | 1.07E+01 | n | --- | --- | --- | 1.07E+01 | 2.81E+02 | 1.11E+01 |
| Anthraquinone, 9,10- | 84-65-1 | 4.42E+00 | n | --- | --- | --- | 4.42E+00 | 1.87E+01 | 5.78E+00 |
| Antimony | 7440-36-0 | 1.99E-01 | n | --- | --- | --- | 1.99E-01 | 3.74E-01 | 4.25E-01 |
| Aramite | 140-57-8 | 6.50E-02 | c | 6.50E-02 | 2.08E+00 | 6.71E-02 | 2.36E+00 | 4.68E+01 | 2.49E+00 |
| Arsenic | 7440-38-2 | 2.85E-02 | c | 2.85E-02 | 3.47E-02 | 1.59E-01 | 2.48E-01 | 2.81E-01 | 2.13E+00 |
| Atrazine | 1912-24-9 | 5.56E-02 | c | 5.56E-02 | 2.34E-01 | 7.30E-02 | 1.11E+01 | 3.28E+01 | 1.68E+01 |
| Azinphos-methyl (guthion) | 86-50-0 | 8.64E-01 | n | --- | --- | --- | 8.64E-01 | 1.40E+00 | 2.25E+00 |
| Barium | 7440-39-3 | 6.49E+01 | n | --- | --- | --- | 6.49E+01 | 1.87E+02 | 9.93E+01 |
| Bayleton | 43121-43-3 | 1.66E+01 | n | --- | --- | --- | 1.66E+01 | 2.81E+01 | 4.04E+01 |
| Benefin (benfluralin) | 1861-40-1 | 7.52E+00 | n | --- | --- | --- | 7.52E+00 | 2.81E+02 | 7.73E+00 |
| Benomyl | 17804-35-2 | 4.13E+01 | n | --- | --- | --- | 4.13E+01 | 4.68E+01 | 3.51E+02 |
| Benzaldehyde | 100-52-7 | 4.26E+01 | n | --- | --- | --- | 4.26E+01 | 9.36E+01 | 7.81E+01 |
| Benzene | 71-43-2 | 2.35E-01 | c | 2.35E-01 | 9.45E-01 | 3.13E-01 | 1.32E+00 | 3.74E+00 | 2.04E+00 |
| Benzenethiol | 108-98-5 | 2.00E-03 | n | --- | --- | --- | 2.00E-03 | 9.36E-03 | 2.54E-03 |
| Benzidine | 92-87-5 | 1.58E-04 | c | 1.58E-04 | 2.26E-04 | 5.26E-04 | 2.23E+00 | 2.81E+00 | 1.08E+01 |
| Benzoic acid | 65-85-0 | 1.88E+03 | n | --- | --- | --- | 1.88E+03 | 3.74E+03 | 3.78E+03 |
| Benzotrichloride | 98-07-7 | 2.02E-04 | c | 2.02E-04 | 4.00E-03 | 2.12E-04 | --- | --- | --- |
| Benzyl alcohol | 100-51-6 | 2.10E+02 | n | --- | --- | --- | 2.10E+02 | 2.81E+02 | 8.27E+02 |
| Benzyl chloride | 100-44-7 | 4.28E-02 | c | 4.28E-02 | 3.06E-01 | 4.98E-02 | --- | --- | --- |
| Benzyl dichloride | 98-87-3 | 4.63E-02 | c | 4.63E-02 | 3.06E-01 | 5.46E-02 | --- | --- | --- |
| Beryllium | 7440-41-7 | 9.43E-02 | n | --- | --- | --- | 9.43E-02 | 1.87E+00 | 9.93E-02 |
| Biphenyl, 1,1- | 92-52-4 | 3.52E+00 | n | --- | --- | --- | 3.52E+00 | 4.68E+01 | 3.80E+00 |
| Biquinoline, 2,2'- | 119-91-5 | 2.70E-01 | n | --- | --- | --- | 2.70E-01 | 2.81E+00 | 2.99E-01 |
| Bis (2-chloroethoxy) methane | 111-91-1 | 1.23E-02 | c | 1.23E-02 | 4.73E-02 | 1.67E-02 | --- | --- | --- |
| Bis (2-chloroethyl) ether | 111-44-4 | 2.58E-02 | c | 2.58E-02 | 4.73E-02 | 5.67E-02 | --- | --- | --- |
| Bis (2-chloroisopropyl) ether | 108-60-1 | 1.81E-01 | c | 1.81E-01 | 7.43E-01 | 2.39E-01 | 1.30E+01 | 3.74E+01 | 1.99E+01 |
| Bis (2-chloromethyl) ether | 542-88-1 | 1.90E-04 | c | 1.90E-04 | 2.36E-04 | 9.65E-04 | --- | --- | --- |
| Bismuth | 7440-69-9 | 2.82E+02 | n | --- | --- | --- | 2.82E+02 | 4.68E+02 | 7.09E+02 |
| Bisphenol A | 80-05-7 | 9.64E+00 | n | --- | --- | --- | 9.64E+00 | 4.68E+01 | 1.21E+01 |
| Boron | 7440-42-8 | 7.44E+01 | n | --- | --- | --- | 7.44E+01 | 8.42E+01 | 6.38E+02 |
| Bromobenzene | 108-86-1 | 4.20E+00 | n | --- | --- | --- | 4.20E+00 | 1.87E+01 | 5.42E+00 |
| Bromo-2-chloroethane, 1- | 107-04-0 | 2.03E+01 | n | --- | --- | --- | 2.03E+01 | 3.74E+01 | 4.45E+01 |
| Bromodichloromethane | 75-27-4 | 4.77E-01 | c | 4.77E-01 | 8.39E-01 | 1.11E+00 | 1.28E+01 | 1.87E+01 | 4.07E+01 |
| Bromoform | 75-25-2 | 4.30E+00 | c | 4.30E+00 | 6.58E+00 | 1.24E+01 | 1.42E+01 | 1.87E+01 | 5.82E+01 |
| Bromomethane (methyl bromide) | 74-83-9 | 9.02E-01 | n | --- | --- | --- | 9.02E-01 | 1.31E+00 | 2.90E+00 |
| Butanal (butyraldehyde) | 123-72-8 | 4.17E+01 | n | --- | --- | --- | 4.17E+01 | 5.62E+01 | 1.62E+02 |
| Butanoic acid (butyric acid) | 107-92-6 | 3.38E+02 | n | --- | --- | --- | 3.38E+02 | 4.68E+02 | 1.22E+03 |
| Butanol, n- | 71-36-3 | 6.99E+01 | n | --- | --- | --- | 6.99E+01 | 9.36E+01 | 2.76E+02 |
| Butoxy ethanol, 2- (Ethylene glycol monobutyl ether; EGBE) | 111-76-2 | 3.30E+02 | n | --- | --- | --- | 3.30E+02 | 4.68E+02 | 1.11E+03 |
| Butyl acetate | 123-86-4 | 7.26E+01 | n | --- | --- | --- | 7.26E+01 | 1.31E+02 | 1.63E+02 |
| Butyl acrylate | 141-32-2 | 3.28E+00 | n | --- | --- | --- | 3.28E+00 | 8.42E+00 | 5.36E+00 |
| Butyl benzyl phthalate | 85-68-7 | 7.88E+00 | n | --- | --- | --- | 7.88E+00 | 1.87E+02 | 8.23E+00 |
| Butylate | 2008-41-5 | 4.54E+00 | n | --- | --- | --- | 4.54E+00 | 4.68E+01 | 5.03E+00 |
| Butylbenzene, n- | 104-51-8 | 1.20E+00 | n | --- | --- | --- | 1.20E+00 | 3.74E+01 | 1.24E+00 |
| Butylbenzene, sec- | 135-98-8 | 1.58E+00 | n | --- | --- | --- | 1.58E+00 | 3.74E+01 | 1.65E+00 |
| Butylbenzene, tert- | 98-06-6 | 1.40E+00 | n | --- | --- | --- | 1.40E+00 | 3.74E+01 | 1.45E+00 |
| Butyl ether, n- (dibutyl ether) | 142-96-1 | 1.28E+01 | n | --- | --- | --- | 1.28E+01 | 9.36E+01 | 1.48E+01 |
| Cacodylic acid | 75-60-5 | 2.67E+00 | n | --- | --- | --- | 2.67E+00 | 2.81E+00 | 5.62E+01 |
| Cadmium | 7440-43-9 | 1.49E-01 | n | --- | --- | --- | 1.49E-01 | 9.36E-01 | 1.77E-01 |
| Caprolactam | 105-60-2 | 4.08E+02 | n | --- | --- | --- | 4.08E+02 | 4.68E+02 | 3.16E+03 |
| Captan | 133-06-2 | 1.04E+01 | c | 1.04E+01 | 1.49E+01 | 3.51E+01 | 9.68E+01 | 1.22E+02 | 4.74E+02 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Carbaryl | 63-25-2 | 4.57E+01 | n | --- | --- | --- | 4.57E+01 | 9.36E+01 | 8.92E+01 |
| Carbazole | 86-74-8 | 2.74E-01 | c | 2.74E-01 | 2.60E+00 | 3.06E-01 | --- | --- | --- |
| Carbofuran | 1563-66-2 | 2.52E+00 | n | --- | --- | --- | 2.52E+00 | 4.68E+00 | 5.46E+00 |
| Carbon disulfide | 75-15-0 | 3.43E+01 | n | --- | --- | --- | 3.43E+01 | 9.36E+01 | 5.41E+01 |
| Carbon tetrachloride | 56-23-5 | 1.03E-01 | c | 1.03E-01 | 4.00E-01 | 1.38E-01 | 2.38E-01 | 6.55E-01 | 3.74E-01 |
| Carbophenothion | 786-19-6 | 4.26E-01 | n | --- | --- | --- | 4.26E-01 | 1.22E+01 | 4.42E-01 |
| Carboxin | 5234-68-4 | 2.81E+01 | n | --- | --- | --- | 2.81E+01 | 9.36E+01 | 4.01E+01 |
| Chloral | 75-87-6 | 7.32E+01 | n | --- | --- | --- | 7.32E+01 | 9.36E+01 | 3.35E+02 |
| Chloral hydrate (1,1-ethanediol, 2,2,2-trichloro-) | 302-17-0 | 8.79E+01 | n | --- | --- | --- | 8.79E+01 | 9.36E+01 | 1.44E+03 |
| Chloramben (amiben; 3-amino-2,5-dichlorobenzoic acid) | 133-90-4 | 6.27E+00 | n | --- | --- | --- | 6.27E+00 | 1.40E+01 | 1.13E+01 |
| Chlorfenvinphos | 470-90-6 | 9.58E-02 | n | --- | --- | --- | 9.58E-02 | 6.55E-01 | 1.12E-01 |
| Chlorine | 7782-50-5 | 5.64E+01 | n | --- | --- | --- | 5.64E+01 | 9.36E+01 | 1.42E+02 |
| Chloroaniline, p- | 106-47-8 | 2.14E+00 | n | --- | --- | --- | 2.14E+00 | 3.74E+00 | 5.02E+00 |
| Chlorobenzene | 108-90-7 | 1.58E+00 | n | --- | --- | --- | 1.58E+00 | 1.87E+01 | 1.73E+00 |
| Chlorobenzilate | 510-15-6 | 1.84E-02 | c | 1.84E-02 | 1.93E-01 | 2.04E-02 | 2.78E+00 | 1.87E+01 | 3.26E+00 |
| Chlorobromomethane (bromochloromethane) | 74-97-5 | 2.68E+01 | n | --- | --- | --- | 2.68E+01 | 3.74E+01 | 9.37E+01 |
| Chloroethane (ethyl chloride) | 75-00-3 | 1.75E+02 | n | --- | --- | --- | 1.75E+02 | 3.74E+02 | 3.28E+02 |
| Chloroethanol, 2- | 107-07-3 | 3.34E+02 | n | --- | --- | --- | 3.34E+02 | 3.74E+02 | 3.09E+03 |
| Chloroethoxy ethene, 2- (2-chloroethylvinylether) | 110-75-8 | 1.62E-02 | c | 1.62E-02 | 4.73E-02 | 2.48E-02 | 8.67E-01 | 1.87E+00 | 1.61E+00 |
| Chloroform | 67-66-3 | 2.35E+00 | n | --- | --- | --- | 2.35E+00 | 9.36E+00 | 3.14E+00 |
| Chlorohexane, 1- | 544-10-5 | 2.68E+00 | n | --- | --- | --- | 2.68E+00 | 3.74E+01 | 2.89E+00 |
| Chloromethane (methyl chloride) | 74-87-3 | 1.95E+00 | c | 1.95E+00 | 4.00E+00 | 3.80E+00 | --- | --- | --- |
| Chloro-3-methylphenol, 4- | 59-50-7 | 8.70E-01 | n | --- | --- | --- | 8.70E-01 | 4.68E+00 | 1.07E+00 |
| Chloronaphthalene, 1- (Chloronaphthalene, alpha-) | 90-13-1 | 3.96E+00 | n | --- | --- | --- | 3.96E+00 | 7.49E+01 | 4.18E+00 |
| Chloronaphthalene, 2- (chloronaphthalene, beta) | 91-58-7 | 5.48E+00 | n | --- | --- | --- | 5.48E+00 | 7.49E+01 | 5.91E+00 |
| Chloronitrobenzene, p- (1-chloro-4-nitrobenzene) | 100-00-5 | 7.36E-01 | c | 7.36E-01 | 2.89E+00 | 9.89E-01 | --- | --- | --- |
| Chlorophenol, 2- | 95-57-8 | 1.93E+00 | n | --- | --- | --- | 1.93E+00 | 4.68E+00 | 3.29E+00 |
| Chlorophenol, 3- | 108-43-0 | 2.08E+00 | n | --- | --- | --- | 2.08E+00 | 4.68E+00 | 3.74E+00 |
| Chlorophenol, 4- | 106-48-9 | 2.03E+00 | n | --- | --- | --- | 2.03E+00 | 4.68E+00 | 3.58E+00 |
| Chloropropane, 2- | 75-29-6 | 8.00E+00 | n | --- | --- | --- | 8.00E+00 | 2.81E+01 | 1.12E+01 |
| Chloro-2-propanol, 1- | 127-00-4 | 1.42E+01 | n | --- | --- | --- | 1.42E+01 | 1.87E+01 | 5.88E+01 |
| Chlorothalonil | 1897-45-6 | 6.60E-01 | c | 6.60E-01 | 4.73E+00 | 7.67E-01 | 2.96E+00 | 1.40E+01 | 3.75E+00 |
| Chlorotoluene, o- (2-chlorotoluene) | 95-49-8 | 2.42E+00 | n | --- | --- | --- | 2.42E+00 | 1.87E+01 | 2.78E+00 |
| Chlorotoluene, p- (4-chlorotoluene) | 106-43-4 | 2.12E+00 | n | --- | --- | --- | 2.12E+00 | 1.87E+01 | 2.39E+00 |
| Chlorpyrifos | 2921-88-2 | 1.95E-01 | n | --- | --- | --- | 1.95E-01 | 2.81E+00 | 2.10E-01 |
| Chromium (III) (total chromium) | 16065-83-1/ 7440-47-3 | 1.26E+02 | n | --- | --- | --- | 1.26E+02 | 1.40E+03 | 1.38E+02 |
| Chromium (VI) | 18540-29-9 | 2.43E-01 | n | --- | --- | --- | 2.43E-01 | 2.81E+00 | 2.66E-01 |
| Cobalt | 7440-48-4 | 5.33E+01 | n | --- | --- | --- | 5.33E+01 | 5.62E+01 | 1.06E+03 |
| Copolymer acrylamide | 69418-26-4 | 1.82E-01 | n | --- | --- | --- | 1.82E-01 | 1.87E-01 | 6.50E+00 |
| Copper | 7440-50-8 | 3.31E+01 | n | --- | --- | --- | 3.31E+01 | 3.74E+01 | 2.84E+02 |
| Coumaphos | 56-72-4 | 8.44E-01 | n | --- | --- | --- | 8.44E-01 | 6.55E+00 | 9.69E-01 |
| Cresol | 1319-77-3 | 1.88E+01 | n | --- | --- | --- | 1.88E+01 | 4.68E+01 | 3.13E+01 |
| Cresol, m- (3-methylphenol) | 108-39-4 | 1.88E+01 | n | --- | --- | --- | 1.88E+01 | 4.68E+01 | 3.13E+01 |
| Cresol, o- (2-methylphenol) | 95-48-7 | 1.88E+01 | n | --- | --- | --- | 1.88E+01 | 4.68E+01 | 3.13E+01 |
| Crotonaldehyde | 123-73-9 | 1.95E-02 | c | 1.95E-02 | 2.74E-02 | 6.73E-02 | --- | --- | --- |
| Cumene (isopropylbenzene) | 98-82-8 | 8.44E+00 | n | --- | --- | --- | 8.44E+00 | 9.36E+01 | 9.27E+00 |
| Cyanazine | 21725-46-2 | 4.08E-02 | c | 4.08E-02 | 6.19E-02 | 1.20E-01 | 1.43E+00 | 1.87E+00 | 5.98E+00 |
| Cyanide | 57-12-5 | 1.65E+01 | n | --- | --- | --- | 1.65E+01 | 1.87E+01 | 1.42E+02 |
| Cyanogen | 460-19-5 | 3.30E+01 | n | --- | --- | --- | 3.30E+01 | 3.74E+01 | 2.77E+02 |
| Cycloate | 1134-23-2 | 5.31E+00 | n | --- | --- | --- | 5.31E+00 | 5.15E+01 | 5.92E+00 |
| Cyclohexane | 110-82-7 | 2.95E+02 | n | --- | --- | --- | 2.95E+02 | 4.68E+03 | 3.15E+02 |
| Cyclohexanol | 108-93-0 | 3.38E+03 | n | --- | --- | --- | 3.38E+03 | 4.68E+03 | 1.21E+04 |
| Cyclohexanone | 108-94-1 | 3.33E+03 | n | --- | --- | --- | 3.33E+03 | 4.68E+03 | 1.15E+04 |
| Cyclotetramethylenetetranitramine (HMX) | 2691-41-0 | 4.61E+01 | n | --- | --- | --- | 4.61E+01 | 4.68E+01 | 3.16E+03 |
| Cyclotrimethylenetrinitramine (RDX) | 121-82-4 | 4.08E-01 | c | 4.08E-01 | 4.73E-01 | 2.96E+00 | 2.56E+00 | 2.81E+00 | 2.90E+01 |
| Cymene (isopropyltoluene) | 99-87-6 | 3.70E+00 | n | --- | --- | --- | 3.70E+00 | 9.36E+01 | 3.85E+00 |
| Cymoxanil | 57966-95-7 | 1.07E+01 | n | --- | --- | --- | 1.07E+01 | 1.22E+01 | 9.22E+01 |
| Dacthal (DCPA) | 1861-32-1 | 5.40E-01 | n | --- | --- | --- | 5.40E-01 | 9.36E+00 | 5.73E-01 |
| Dalapon, sodium salt (2,2-dichloropropanoic acid) | 75-99-0 | 1.82E+01 | n | --- | --- | --- | 1.82E+01 | 2.81E+01 | 5.19E+01 |
| Demeton | 8065-48-3 | 1.31E-02 | n | --- | --- | --- | 1.31E-02 | 3.74E-02 | 2.01E-02 |
| Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone) | 123-42-2 | 3.43E+01 | n | --- | --- | --- | 3.43E+01 | 3.74E+01 | 4.04E+02 |
| Diallate | 2303-16-4 | 5.24E-02 | c | 5.24E-02 | 8.52E-01 | 5.58E-02 | --- | --- | --- |
| Diazinon | 333-41-5 | 1.32E-01 | n | --- | --- | --- | 1.32E-01 | 8.42E-01 | 1.56E-01 |
| Dibenzofuran | 132-64-9 | 2.19E-01 | n | --- | --- | --- | 2.19E-01 | 3.74E+00 | 2.32E-01 |
| Dibenzothiophene | 132-65-0 | 7.47E-02 | n | --- | --- | --- | 7.47E-02 | 2.81E+00 | 7.67E-02 |
| Dibromochloromethane (chlorodibromomethane) | 124-48-1 | 3.83E-01 | c | 3.83E-01 | 6.19E-01 | 1.00E+00 | 1.36E+01 | 1.87E+01 | 5.00E+01 |
| Dibromo-3-chloropropane, 1,2- | 96-12-8 | 1.13E-02 | c | 1.13E-02 | 3.71E-02 | 1.62E-02 | --- | --- | --- |
| Dibromofluoromethane | 1868-53-7 | 1.33E+02 | n | --- | --- | --- | 1.33E+02 | 1.87E+02 | 4.60E+02 |
| Dicamba | 1918-00-9 | 1.62E+01 | n | --- | --- | --- | 1.62E+01 | 2.81E+01 | 3.84E+01 |
| Dichlorobenzene, 1,2- | 95-50-1 | 1.13E+01 | n | --- | --- | --- | 1.13E+01 | 8.42E+01 | 1.31E+01 |
| Dichlorobenzene, 1,3- | 541-73-1 | 3.78E+00 | n | --- | --- | --- | 3.78E+00 | 2.81E+01 | 4.36E+00 |
| Dichlorobenzene, 1,4- | 106-46-7 | 1.86E-01 | c | 1.86E-01 | 2.17E+00 | 2.04E-01 | --- | --- | --- |
| Dichlorobenzidine, 3,3- | 91-94-1 | 2.07E-02 | c | 2.07E-02 | 1.16E-01 | 2.52E-02 | --- | --- | --- |
| Dichlorobutane, 2,3- | 7581-97-7 | 1.95E+00 | n | --- | --- | --- | 1.95E+00 | 9.36E+00 | 2.46E+00 |
| Dichlorodifluoromethane | 75-71-8 | 3.76E+01 | n | --- | --- | --- | 3.76E+01 | 1.87E+02 | 4.70E+01 |
| Dichloroethane, 1,1- | 75-34-3 | 4.58E+01 | n | --- | --- | --- | 4.58E+01 | 9.36E+01 | 8.99E+01 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Dichloroethane, 1,2- | 107-06-2 | 1.96E-01 | c | 1.96E-01 | 5.71E-01 | 2.98E-01 | --- | --- | --- |
| Dichloroethylene, 1,1- | 75-35-4 | 1.66E+01 | n | --- | --- | --- | 1.66E+01 | 4.68E+01 | 2.58E+01 |
| Dichloroethylene, cis-1,2- | 156-59-2 | 4.18E+00 | n | --- | --- | --- | 4.18E+00 | 9.36E+00 | 7.56E+00 |
| Dichloroethylene, trans-1,2 | 156-60-5 | 6.95E+00 | n | --- | --- | --- | 6.95E+00 | 1.87E+01 | 1.11E+01 |
| Dichlorophenol, 2,3- | 576-24-9 | 7.66E-01 | n | --- | --- | --- | 7.66E-01 | 2.81E+00 | 1.05E+00 |
| Dichlorophenol, 2,4- | 120-83-2 | 7.39E-01 | n | --- | --- | --- | 7.39E-01 | 2.81E+00 | 1.00E+00 |
| Dichlorophenol, 2,5- | 583-78-8 | 8.00E-01 | n | --- | --- | --- | 8.00E-01 | 2.81E+00 | 1.12E+00 |
| Dichlorophenol, 2,6- | 87-65-0 | 2.39E-01 | n | --- | --- | --- | 2.39E-01 | 9.36E-01 | 3.21E-01 |
| Dichlorophenol, 3,4- | 95-77-2 | 6.70E-01 | n | --- | --- | --- | 6.70E-01 | 2.81E+00 | 8.79E-01 |
| Dichlorophenol, 3,5- | 591-35-5 | 7.82E-01 | n | --- | --- | --- | 7.82E-01 | 2.81E+00 | 1.08E+00 |
| Dichlorophenoxyacetic acid, 2,4- (2,4-D) | 94-75-7 | 3.92E+00 | n | --- | --- | --- | 3.92E+00 | 9.36E+00 | 6.74E+00 |
| Dichlorophenoxy, 2,4- butyric acid, 4- (2,4-DB) | 94-82-6 | 9.53E-01 | n | --- | --- | --- | 9.53E-01 | 7.49E+00 | 1.09E+00 |
| Dichloroprop (2-(2,4-dichlorophenoxy) propanoic acid) | 120-36-5 | 2.13E+00 | n | --- | --- | --- | 2.13E+00 | 9.36E+00 | 2.76E+00 |
| Dichloropropane, 1,2- | 78-87-5 | 1.86E-01 | c | 1.86E-01 | 7.65E-01 | 2.46E-01 | 2.92E+01 | 8.42E+01 | 4.46E+01 |
| Dichloropropane, 1,3- | 142-28-9 | 1.29E-01 | c | 1.29E-01 | 5.20E-01 | 1.71E-01 | 9.88E+00 | 2.81E+01 | 1.52E+01 |
| Dichloropropane, 2,2- | 594-20-7 | 1.63E-01 | c | 1.63E-01 | 7.65E-01 | 2.07E-01 | 2.60E+01 | 8.42E+01 | 3.76E+01 |
| Dichloropropanol, 2,3- | 616-23-9 | 2.38E+00 | n | --- | --- | --- | 2.38E+00 | 2.81E+00 | 1.57E+01 |
| Dichloropropene, 1,1- | 563-58-6 | 6.22E-02 | c | 6.22E-02 | 5.20E-01 | 7.06E-02 | 5.13E+00 | 2.81E+01 | 6.28E+00 |
| Dichloropropene, 1,3- (mixed isomers) | 542-75-6 | 2.08E-01 | c | 2.08E-01 | 5.20E-01 | 3.46E-01 | 1.47E+01 | 2.81E+01 | 3.07E+01 |
| Dichloropropene, cis 1,3- | 10061-01-5 | 4.63E-02 | c | 4.63E-02 | 9.63E-02 | 8.91E-02 | 5.65E-02 | 9.36E-02 | 1.43E-01 |
| Dichloropropene, trans 1,3- | 10061-02-6 | 2.50E-01 | c | 2.50E-01 | 5.20E-01 | 4.81E-01 | 1.70E+01 | 2.81E+01 | 4.28E+01 |
| Dichlorvos | 62-73-7 | 1.32E-01 | c | 1.32E-01 | 1.79E-01 | 4.98E-01 | 3.84E-01 | 4.68E-01 | 2.14E+00 |
| Dicrotophos (bidrin) | 141-66-2 | 9.29E-02 | n | --- | --- | --- | 9.29E-02 | 9.36E-02 | 1.28E+01 |
| Dicyclopentadiene | 77-73-6 | 2.26E+00 | n | --- | --- | --- | 2.26E+00 | 2.81E+01 | 2.46E+00 |
| Diethanolamine | 111-42-2 | 4.67E-01 | n | --- | --- | --- | 4.67E-01 | 4.68E-01 | 1.74E+02 |
| Diethyl phthalate | 84-66-2 | 3.07E+02 | n | --- | --- | --- | 3.07E+02 | 7.49E+02 | 5.20E+02 |
| Diethylene glycol | 111-46-6 | 1.86E+03 | n | --- | --- | --- | 1.86E+03 | 1.87E+03 | 2.17E+05 |
| Diethylene glycol monobutyl ether | 112-34-5 | 7.11E+01 | n | --- | --- | --- | 7.11E+01 | 8.42E+01 | 4.56E+02 |
| Diisopropyl ether (2,2'-oxybis-propane) | 108-20-3 | 3.20E+01 | n | --- | --- | --- | 3.20E+01 | 9.36E+01 | 4.86E+01 |
| Dimethenamid | 87674-68-8 | 1.19E+01 | n | --- | --- | --- | 1.19E+01 | 1.40E+01 | 7.98E+01 |
| Dimethoate | 60-51-5 | 1.80E-01 | n | --- | --- | --- | 1.80E-01 | 1.87E-01 | 4.97E+00 |
| Dimethoxybenzidine, 3,3'- | 119-90-4 | 1.98E+00 | c | 1.98E+00 | 3.71E+00 | 4.24E+00 | --- | --- | --- |
| Dimethylbenzidine, 3,3'- | 119-93-7 | 1.04E-03 | c | 1.04E-03 | 5.65E-03 | 1.27E-03 | --- | --- | --- |
| Dimethylnaphthalene, 1,3- | 575-41-7 | 1.18E+00 | n | --- | --- | --- | 1.18E+00 | 3.74E+01 | 1.22E+00 |
| Dimethyl phenol, 2,4- | 105-67-9 | 4.74E+00 | n | --- | --- | --- | 4.74E+00 | 1.87E+01 | 6.35E+00 |
| Dimethylphenethylamine, alpha, alpha- | 122-09-8 | 8.26E-01 | n | --- | --- | --- | 8.26E-01 | 1.87E+00 | 1.48E+00 |
| Dimethylphthalate | 131-11-3 | 5.40E+02 | n | --- | --- | --- | 5.40E+02 | 7.49E+02 | 1.94E+03 |
| Di-n-butyl phthalate | 84-74-2 | 4.49E+00 | n | --- | --- | --- | 4.49E+00 | 9.36E+01 | 4.72E+00 |
| Dinitrobenzene, 1,3- (dinitrobenzene, 2,4- ) | 99-65-0 | 6.42E-02 | n | --- | --- | --- | 6.42E-02 | 9.36E-02 | 2.05E-01 |
| Dinitrobenzene, 1,4- | 100-25-4 | 2.57E-01 | n | --- | --- | --- | 2.57E-01 | 3.74E-01 | 8.19E-01 |
| Dinitro-2-methylphenol, 4,6- (dinitro-o-cresol, 4, 6-) | 534-52-1 | 1.10E+00 | n | --- | --- | --- | 1.10E+00 | 1.87E+00 | 2.68E+00 |
| Dinitrophenol, 2,4- | 51-28-5 | 1.27E+00 | n | --- | --- | --- | 1.27E+00 | 1.87E+00 | 3.99E+00 |
| Dinitrophenol, 2,5- | 329-71-5 | 6.61E-01 | n | --- | --- | --- | 6.61E-01 | 1.87E+00 | 1.02E+00 |
| Dinitrotoluene, 2,4- | 121-14-2 | 3.00E-02 | c | 3.00E-02 | 7.65E-02 | 4.93E-02 | 9.64E-01 | 1.87E+00 | 1.99E+00 |
| Dinitrotoluene, 2,6- | 606-20-2 | 3.00E-02 | c | 3.00E-02 | 7.65E-02 | 4.93E-02 | 4.82E-01 | 9.36E-01 | 9.94E-01 |
| Dinoseb | 88-85-7 | 1.32E-01 | n | --- | --- | --- | 1.32E-01 | 9.36E-01 | 1.53E-01 |
| Dioxane 1,4- | 123-91-1 | 4.37E+00 | c | 4.37E+00 | 4.73E+00 | 5.71E+01 | --- | --- | --- |
| Diphenylamine | 122-39-4 | 3.57E+00 | n | --- | --- | --- | 3.57E+00 | 2.34E+01 | 4.21E+00 |
| Diphenylhydrazine, 1,2- | 122-66-7 | 9.57E-03 | c | 9.57E-03 | 6.50E-02 | 1.12E-02 | --- | --- | --- |
| Diphenyl oxide | 101-84-8 | 2.37E-01 | n | --- | --- | --- | 2.37E-01 | 5.80E+00 | 2.47E-01 |
| Diquat | 85-00-7 | 2.06E+00 | n | --- | --- | --- | 2.06E+00 | 2.06E+00 | 1.28E+04 |
| Disodium iminodiacetate (iminodiacetic acid, disodium salt) | 28-72-3/ 142-73 | 9.29E+00 | n | --- | --- | --- | 9.29E+00 | 9.36E+00 | 1.36E+03 |
| Disulfoton | 298-04-4 | 5.00E-03 | n | --- | --- | --- | 5.00E-03 | 3.74E-02 | 5.77E-03 |
| Diuron | 330-54-1 | 7.81E-01 | n | --- | --- | --- | 7.81E-01 | 1.87E+00 | 1.34E+00 |
| Endosulfan | 115-29-7 | 1.53E+00 | n | --- | --- | --- | 1.53E+00 | 5.62E+00 | 2.09E+00 |
| Endosulfan I | 959-98-8 | 8.42E-02 | n | --- | --- | --- | 8.42E-02 | 1.87E+00 | 8.82E-02 |
| Endosulfan II | 33213-65-9 | 2.53E-01 | n | --- | --- | --- | 2.53E-01 | 5.62E+00 | 2.65E-01 |
| Endothall | 145-73-3 | 1.30E+01 | n | --- | --- | --- | 1.30E+01 | 1.87E+01 | 4.30E+01 |
| Endrin | 72-20-8 | 7.47E-03 | n | --- | --- | --- | 7.47E-03 | 2.81E-01 | 7.68E-03 |
| Endrin ketone | 53494-70-5 | 8.89E-03 | n | --- | --- | --- | 8.89E-03 | 2.81E-01 | 9.18E-03 |
| Epichlorohydrin | 106-89-8 | 1.56E+00 | n | 3.94E+00 | 5.25E+00 | 1.58E+01 | 1.56E+00 | 1.87E+00 | 9.28E+00 |
| EPN (o-ethyl o-(4-nitrophenyl)phenylphosphonothioate) | 2104-64-5 | 1.72E-03 | n | --- | --- | --- | 1.72E-03 | 9.36E-03 | 2.11E-03 |
| Ethalfluralin (sonolan) | 55283-68-6 | 1.79E-02 | c | 1.79E-02 | 5.84E-01 | 1.84E-02 | 1.85E+00 | 3.74E+01 | 1.95E+00 |
| Ethanol | 64-17-5 | 2.73E+04 | n | --- | --- | --- | 2.73E+04 | 3.09E+04 | 2.38E+05 |
| Ethion | 563-12-2 | 3.52E-02 | n | --- | --- | --- | 3.52E-02 | 4.68E-01 | 3.81E-02 |
| Ethoprop | 13194-48-4 | 2.54E-02 | n | 3.42E-01 | 1.85E+00 | 4.19E-01 | 2.54E-02 | 9.36E-02 | 3.49E-02 |
| Ethoxy ethanol, 2- | 110-80-5 | 3.59E+02 | n | --- | --- | --- | 3.59E+02 | 3.74E+02 | 8.80E+03 |
| Ethyl acetate | 141-78-6 | 6.46E+02 | n | --- | --- | --- | 6.46E+02 | 8.42E+02 | 2.78E+03 |
| Ethyl acrylate | 140-88-5 | 6.18E-01 | c | 6.18E-01 | 1.08E+00 | 1.44E+00 | --- | --- | --- |
| Ethyl benzene | 100-41-4 | 1.28E+01 | n | --- | --- | --- | 1.28E+01 | 9.36E+01 | 1.49E+01 |
| Ethyl dipropylthiocarbamate, S- | 759-94-4 | 5.56E+00 | n | --- | --- | --- | 5.56E+00 | 2.34E+01 | 7.29E+00 |
| Ethylenediamine | 107-15-3 | 1.85E+01 | n | --- | --- | --- | 1.85E+01 | 1.87E+01 | 1.97E+03 |
| Ethylene dibromide (dibromoethane, 1,2- ) | 106-93-4 | 2.83E-04 | c | 2.83E-04 | 6.12E-04 | 5.28E-04 | --- | --- | --- |
| Ethylene glycol | 107-21-1 | 1.84E+03 | n | --- | --- | --- | 1.84E+03 | 1.87E+03 | 1.07E+05 |
| Ethylenimine | 151-56-4 | 6.57E-04 | c | 6.57E-04 | 8.00E-04 | 3.68E-03 | --- | --- | --- |
| Ethylene oxide | 75-21-8 | 4.23E-02 | c | 4.23E-02 | 5.10E-02 | 2.49E-01 | --- | --- | --- |
| Ethylene thiourea | 96-45-7 | 7.24E-02 | n | 4.48E-01 | 4.73E-01 | 8.56E+00 | 7.24E-02 | 7.49E-02 | 2.23E+00 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Ethyl ether | 60-29-7 | 1.28E+02 | n | --- | --- | --- | 1.28E+02 | 1.87E+02 | 4.02E+02 |
| Ethyl-1-hexanol, 2- | 104-76-7 | 3.31E+01 | n | --- | --- | --- | 3.31E+01 | 1.40E+02 | 4.33E+01 |
| Ethyl-2-hexenal, 2- | 645-62-5 | 3.60E+01 | n | --- | --- | --- | 3.60E+01 | 1.40E+02 | 4.85E+01 |
| Ethylhexyl acrylate, 2- | 103-11-7 | 3.85E-02 | c | 3.85E-02 | 1.08E+00 | 3.99E-02 | --- | --- | --- |
| Ethyl methacrylate | 97-63-2 | 4.42E+01 | n | --- | --- | --- | 4.42E+01 | 8.42E+01 | 9.28E+01 |
| Ethyl methanesulfonate | 62-50-0 | 5.07E-01 | c | 5.07E-01 | 5.25E-01 | 1.43E+01 | --- | --- | --- |
| Ethyl-2-methyl benzene, 1- | 611-14-3 | 1.52E+01 | n | --- | --- | --- | 1.52E+01 | 1.87E+02 | 1.66E+01 |
| Ethyl-4-methyl benzene, 1- | 622-96-8 | 1.43E+01 | n | --- | --- | --- | 1.43E+01 | 1.87E+02 | 1.54E+01 |
| Ethyl tert-butyl ether (2-ethyl-2-ethoxypropane) | 637-92-3 | 4.22E-01 | n | --- | --- | --- | 4.22E-01 | 9.36E-01 | 7.69E-01 |
| Famphur | 52-85-7 | 2.57E-02 | n | --- | --- | --- | 2.57E-02 | 2.81E-02 | 3.00E-01 |
| Fensulfothion | 115-90-2 | 7.02E-01 | n | --- | --- | --- | 7.02E-01 | 9.36E-01 | 2.80E+00 |
| Fenthion | 55-38-9 | 2.27E-02 | n | --- | --- | --- | 2.27E-02 | 6.55E-02 | 3.48E-02 |
| Fluorene | 86-73-7 | 2.11E+00 | n | --- | --- | --- | 2.11E+00 | 3.74E+01 | 2.23E+00 |
| Fluorine (soluble fluoride) | 7782-41-4 | 4.96E+01 | n | --- | --- | --- | 4.96E+01 | 5.62E+01 | 4.25E+02 |
| Fluorochloridone | 61213-25-0 | 2.20E+00 | n | --- | --- | --- | 2.20E+00 | 7.02E+00 | 3.21E+00 |
| Fonofos | 944-22-9 | 1.76E-01 | n | --- | --- | --- | 1.76E-01 | 1.87E+00 | 1.94E-01 |
| Formaldehyde | 50-00-0 | 1.48E+02 | n | --- | --- | --- | 1.48E+02 | 1.87E+02 | 7.04E+02 |
| Formic acid | 64-18-6 | 1.76E+03 | n | --- | --- | --- | 1.76E+03 | 1.87E+03 | 2.90E+04 |
| Furan | 110-00-9 | 5.21E-01 | n | --- | --- | --- | 5.21E-01 | 9.36E-01 | 1.17E+00 |
| Furfural | 98-01-1 | 2.22E+00 | n | --- | --- | --- | 2.22E+00 | 2.81E+00 | 1.06E+01 |
| Glycidylaldehyde | 765-34-4 | 3.46E-01 | n | --- | --- | --- | 3.46E-01 | 3.74E-01 | 4.61E+00 |
| Glyphosate | 1071-83-6 | 8.27E+01 | n | --- | --- | --- | 8.27E+01 | 9.36E+01 | 7.09E+02 |
| Heptachlor epoxide | 1024-57-3 | 2.20E-04 | c | 2.20E-04 | 5.71E-03 | 2.28E-04 | 7.51E-04 | 1.22E-02 | 8.01E-04 |
| Heptanoic acid, n- | 111-14-8 | 8.06E+01 | n | --- | --- | --- | 8.06E+01 | 4.68E+02 | 9.73E+01 |
| Hexachlorobutadiene | 87-68-3 | 6.90E-03 | n | 1.51E-02 | 6.67E-01 | 1.55E-02 | 6.90E-03 | 1.87E-01 | 7.16E-03 |
| Hexachlorocyclohexane, alpha (alpha-BHC) | 319-84-6 | 4.42E-04 | c | 4.42E-04 | 8.25E-03 | 4.67E-04 | 6.38E-01 | 7.49E+00 | 6.98E-01 |
| Hexachlorocyclohexane, beta (beta-BHC) | 319-85-7 | 1.55E-03 | c | 1.55E-03 | 2.89E-02 | 1.64E-03 | --- | --- | --- |
| Hexachlorocyclohexane, delta (delta-BHC) | 319-86-8 | 2.23E-03 | c | 2.23E-03 | 2.89E-02 | 2.42E-03 | 3.41E-02 | 2.81E-01 | 3.88E-02 |
| Hexachlorocyclohexane, gamma (lindane; gamma-BHC) | 58-89-9 | 2.14E-03 | c | 2.14E-03 | 4.00E-02 | 2.26E-03 | 2.39E-02 | 2.81E-01 | 2.62E-02 |
| Hexachlorocyclohexane, techn (technical-BHC) | 608-73-1 | 1.55E-03 | c | 1.55E-03 | 2.89E-02 | 1.64E-03 | --- | --- | --- |
| Hexachlorocyclopentadiene (HCCPD) | 77-47-4 | 2.56E-01 | n | --- | --- | --- | 2.56E-01 | 5.62E+00 | 2.69E-01 |
| Hexachloropropylene | 1888-71-7 | 7.81E-02 | n | 1.94E-01 | 3.71E+00 | 2.05E-01 | 7.81E-02 | 9.36E-01 | 8.52E-02 |
| Hexane, n- | 110-54-3 | 4.79E+00 | n | --- | --- | --- | 4.79E+00 | 5.62E+01 | 5.24E+00 |
| Hexanediol, 1,6- | 629-11-8 | 3.92E+03 | n | --- | --- | --- | 3.92E+03 | 4.68E+03 | 2.40E+04 |
| Hexanoic acid | 142-62-1 | 2.52E+01 | n | --- | --- | --- | 2.52E+01 | 5.99E+01 | 4.36E+01 |
| Hexanone, 2- | 591-78-6 | 3.34E+01 | n | --- | --- | --- | 3.34E+01 | 5.62E+01 | 8.25E+01 |
| Hexazinone | 51235-04-2 | 1.98E+01 | n | --- | --- | --- | 1.98E+01 | 3.09E+01 | 5.51E+01 |
| Hexylene glycol (2-methyl-2,4-pentanediol) | 107-41-5 | 2.53E+02 | n | --- | --- | --- | 2.53E+02 | 2.81E+02 | 2.54E+03 |
| Hydrazine | 302-01-2 | 1.69E-02 | c | 1.69E-02 | 1.73E-02 | 6.40E-01 | --- | --- | --- |
| Indene | 95-13-6 | 3.65E+00 | n | --- | --- | --- | 3.65E+00 | 1.87E+01 | 4.54E+00 |
| Isobutyl alcohol | 78-83-1 | 2.15E+02 | n | --- | --- | --- | 2.15E+02 | 2.81E+02 | 9.24E+02 |
| Isobutyric acid (2-methylpropanoic acid) | 79-31-2 | 3.19E+02 | n | --- | --- | --- | 3.19E+02 | 4.68E+02 | 1.00E+03 |
| Isophorone | 78-59-1 | 1.04E+01 | c | 1.04E+01 | 5.47E+01 | 1.28E+01 | 5.20E+01 | 1.87E+02 | 7.20E+01 |
| Isopropyl acetate | 108-21-4 | 4.59E+01 | n | --- | --- | --- | 4.59E+01 | 6.55E+01 | 1.53E+02 |
| Isopropyl alcohol | 67-63-0 | 1.51E+02 | n | --- | --- | --- | 1.51E+02 | 1.87E+02 | 7.91E+02 |
| Isosafrole | 120-58-1 | 3.64E-02 | c | 3.64E-02 | 2.36E-01 | 4.30E-02 | --- | --- | --- |
| Kelthane (dicofol) | 115-32-2 | 2.33E-01 | n | --- | --- | --- | 2.33E-01 | 5.62E+00 | 2.44E-01 |
| Kepone (chlordecone) | 143-50-0 | 2.32E-04 | c | 2.32E-04 | 3.25E-03 | 2.49E-04 | 5.25E-02 | 4.68E-01 | 5.92E-02 |
| Lithium | 7439-93-2 | 1.65E+01 | n | --- | --- | --- | 1.65E+01 | 1.87E+01 | 1.42E+02 |
| Malathion | 121-75-5 | 1.32E+01 | n | --- | --- | --- | 1.32E+01 | 1.87E+01 | 4.50E+01 |
| Maleic anhydride | 108-31-6 | 5.05E+01 | n | --- | --- | --- | 5.05E+01 | 9.36E+01 | 1.10E+02 |
| Maleic hydrazide | 123-33-1 | 4.60E+02 | n | --- | --- | --- | 4.60E+02 | 4.68E+02 | 2.82E+04 |
| Malononitrile | 109-77-3 | 1.73E-02 | n | --- | --- | --- | 1.73E-02 | 1.87E-02 | 2.37E-01 |
| Mancozeb | 8018-01-7 | 2.45E+01 | n | --- | --- | --- | 2.45E+01 | 2.81E+01 | 1.90E+02 |
| Manganese | 7439-96-5 | 4.09E+01 | n | --- | --- | --- | 4.09E+01 | 1.31E+02 | 5.96E+01 |
| MCPA (4-(chloro-2-methylphenoxy) acetic acid) | 94-74-6 | 7.65E-02 | n | --- | --- | --- | 7.65E-02 | 4.68E-01 | 9.14E-02 |
| MCPP (2-(4-chloro-2-methylphenoxy) propanoic acid) | 085-19-0/ 93-65 | 2.25E-01 | n | --- | --- | --- | 2.25E-01 | 9.36E-01 | 2.95E-01 |
| Mercury | 39-97-6/ 7487-9 | 9.73E-02 | n | --- | --- | --- | 9.73E-02 | 2.81E-01 | 1.49E-01 |
| Methacrylic acid (2-methyl-2-propenoic acid) | 79-41-4 | 4.59E+00 | n | --- | --- | --- | 4.59E+00 | 9.36E+00 | 9.01E+00 |
| Methacrylonitrile | 126-98-7 | 7.08E-02 | n | --- | --- | --- | 7.08E-02 | 9.36E-02 | 2.90E-01 |
| Methanol | 67-56-1 | 4.42E+02 | n | --- | --- | --- | 4.42E+02 | 4.68E+02 | 8.00E+03 |
| Methapyrilene | 91-80-5 | 2.22E-03 | c | 2.22E-03 | 1.11E-02 | 2.77E-03 | --- | --- | --- |
| Methomyl | 16752-77-5 | 2.12E+01 | n | --- | --- | --- | 2.12E+01 | 2.34E+01 | 2.29E+02 |
| Methoxychlor | 72-43-5 | 7.19E-02 | n | --- | --- | --- | 7.19E-02 | 4.68E+00 | 7.30E-02 |
| Methyl acetate (acetic acid, methyl ester) | 79-20-9 | 8.22E+02 | n | --- | --- | --- | 8.22E+02 | 9.36E+02 | 6.78E+03 |
| Methyl acrylate | 96-33-3 | 1.49E+00 | n | --- | --- | --- | 1.49E+00 | 1.87E+00 | 7.41E+00 |
| Methyl amyl ketone (2-heptanone) | 110-43-0 | 1.99E+01 | n | --- | --- | --- | 1.99E+01 | 4.68E+01 | 3.46E+01 |
| Methyl-1-butene, 2- | 563-46-2 | 8.37E+00 | n | --- | --- | --- | 8.37E+00 | 5.62E+01 | 9.83E+00 |
| Methyl-2-butene, 2- | 513-35-9 | 8.88E+00 | n | --- | --- | --- | 8.88E+00 | 5.62E+01 | 1.06E+01 |
| Methyl cyclohexane | 108-87-2 | 1.57E+02 | n | --- | --- | --- | 1.57E+02 | 4.68E+03 | 1.63E+02 |
| Methylene-bis (2-chloroaniline) 4,4'- | 101-14-4 | 5.55E-02 | c | 5.55E-02 | 4.00E-01 | 6.44E-02 | 1.37E-01 | 6.55E-01 | 1.74E-01 |
| Methylene bromide (dibromomethane) | 74-95-3 | 4.30E+00 | c | 4.30E+00 | 6.93E+00 | 1.13E+01 | 4.10E+01 | 5.62E+01 | 1.51E+02 |
| Methylene chloride (dichloromethane) | 75-09-2 | 3.37E+00 | c | 3.37E+00 | 6.93E+00 | 6.55E+00 | 3.42E+01 | 5.62E+01 | 8.73E+01 |
| Methyl ethyl ketone (2-butanone) | 78-93-3 | 4.91E+02 | n | --- | --- | --- | 4.91E+02 | 5.62E+02 | 3.92E+03 |
| Methyl iodide (iodomethane) | 74-88-4 | 8.70E-01 | n | --- | --- | --- | 8.70E-01 | 1.31E+00 | 2.59E+00 |
| Methyl isobutyl ketone (4-methyl-2-pentanone) | 108-10-1 | 5.27E+01 | n | --- | --- | --- | 5.27E+01 | 7.49E+01 | 1.78E+02 |
| Methyl mercury | 22967-92-6 | 8.27E-02 | n | --- | --- | --- | 8.27E-02 | 9.36E-02 | 7.09E-01 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Methylmecury hydroxide | 1184-57-2 | 9.33E-02 | n | --- | --- | --- | 9.33E-02 | 9.36E-02 | 2.93E+01 |
| Methyl methacrylate | 80-62-6 | 8.75E+02 | n | --- | --- | --- | 8.75E+02 | 1.31E+03 | 2.63E+03 |
| Methyl methanesulfonate | 66-27-3 | 5.08E-01 | c | 5.08E-01 | 5.25E-01 | 1.57E+01 | --- | --- | --- |
| Methylnaphthalene, 1- | 90-12-0 | 4.80E+00 | n | --- | --- | --- | 4.80E+00 | 6.55E+01 | 5.18E+00 |
| Methylnaphthalene, 2- | 91-57-6 | 2.76E-01 | n | --- | --- | --- | 2.76E-01 | 3.74E+00 | 2.98E-01 |
| Methyl-5-nitroaniline, 2- (5-nitro-o-toluidine) | 99-55-8 | 6.65E-01 | c | 6.65E-01 | 1.58E+00 | 1.15E+00 | --- | --- | --- |
| Methyl parathion | 298-00-0 | 1.02E-01 | n | --- | --- | --- | 1.02E-01 | 2.34E-01 | 1.81E-01 |
| Methyl-2-pentenal, 2- | 623-36-9 | 1.04E-02 | c | 1.04E-02 | 2.74E-02 | 1.68E-02 | --- | --- | --- |
| Methyl-1-propanal, 2- (isobutyraldehyde) | 78-84-2 | 2.83E+01 | n | --- | --- | --- | 2.83E+01 | 3.74E+01 | 1.16E+02 |
| Methylpyrrolidone, N- | 872-50-4 | 1.74E+01 | n | --- | --- | --- | 1.74E+01 | 1.87E+01 | 2.53E+02 |
| Methyltetrahydrofuran, 2- | 96-47-9 | 3.98E+00 | c | 3.98E+00 | 6.84E+00 | 9.53E+00 | 1.30E+02 | 1.87E+02 | 4.29E+02 |
| Methyltetrahydropyran, 2- | 10141-72-7 | 3.12E+00 | c | 3.12E+00 | 6.84E+00 | 5.75E+00 | 1.09E+02 | 1.87E+02 | 2.59E+02 |
| Metolachlor | 51218-45-2 | 5.81E+01 | n | --- | --- | --- | 5.81E+01 | 1.40E+02 | 9.92E+01 |
| Metribuzin | 21087-64-9 | 2.23E+01 | n | --- | --- | --- | 2.23E+01 | 2.34E+01 | 4.89E+02 |
| Molinate | 2212-67-1 | 5.00E-01 | n | --- | --- | --- | 5.00E-01 | 1.87E+00 | 6.82E-01 |
| Molybdenum | 7439-98-7 | 3.47E+00 | n | --- | --- | --- | 3.47E+00 | 4.68E+00 | 1.35E+01 |
| Morpholine | 110-91-8 | 4.58E+05 | n | --- | --- | --- | 4.58E+05 | 4.68E+05 | 2.16E+07 |
| MTBE (methyl tert-butyl ether) | 1634-04-4 | 5.47E+00 | n | 1.33E+01 | 2.89E+01 | 2.47E+01 | 5.47E+00 | 9.36E+00 | 1.32E+01 |
| Naled | 300-76-5 | 1.69E+00 | n | --- | --- | --- | 1.69E+00 | 1.87E+00 | 1.76E+01 |
| Naphthalene | 91-20-3 | 2.55E+00 | n | --- | --- | --- | 2.55E+00 | 1.87E+01 | 2.95E+00 |
| Naphthoquinone, 1,4- | 130-15-4 | 4.65E+00 | n | --- | --- | --- | 4.65E+00 | 6.55E+00 | 1.61E+01 |
| Naphthylamine, 1- | 134-32-7 | 5.25E+00 | n | --- | --- | --- | 5.25E+00 | 1.87E+01 | 7.29E+00 |
| Naphthylamine, 2- | 91-59-8 | 4.74E-03 | c | 4.74E-03 | 2.89E-02 | 5.67E-03 | --- | --- | --- |
| Napropamide | 15299-99-7 | 1.30E+01 | n | --- | --- | --- | 1.30E+01 | 9.36E+01 | 1.52E+01 |
| Neopentyl glycol | 126-30-7 | 2.56E+02 | n | --- | --- | --- | 2.56E+02 | 2.81E+02 | 2.90E+03 |
| Nickel | 7440-02-0 | 1.13E+01 | n | --- | --- | --- | 1.13E+01 | 1.87E+01 | 2.84E+01 |
| Nitrate | 14797-55-8 | 1.32E+03 | n | --- | --- | --- | 1.32E+03 | 1.50E+03 | 1.13E+04 |
| Nitrite | 14797-65-0 | 8.27E+01 | n | --- | --- | --- | 8.27E+01 | 9.36E+01 | 7.09E+02 |
| Nitroaniline, 2- | 88-74-4 | 1.36E-01 | n | --- | --- | --- | 1.36E-01 | 2.81E-01 | 2.65E-01 |
| Nitroaniline, 3- | 99-09-2 | 1.77E-01 | n | 6.97E-01 | 1.37E+00 | 1.42E+00 | 1.77E-01 | 2.81E-01 | 4.80E-01 |
| Nitroaniline, 4- | 100-01-6 | 9.66E-01 | c | 9.66E-01 | 1.37E+00 | 3.29E+00 | 2.24E+00 | 2.81E+00 | 1.11E+01 |
| Nitrobenzene | 98-95-3 | 2.48E-01 | n | --- | --- | --- | 2.48E-01 | 4.68E-01 | 5.26E-01 |
| Nitroglycerin | 55-63-0 | 4.30E-02 | n | 2.00E+00 | 3.71E+00 | 4.31E+00 | 4.30E-02 | 6.55E-02 | 1.25E-01 |
| Nitrophenol, 2- | 88-75-5 | 6.86E-01 | n | --- | --- | --- | 6.86E-01 | 1.87E+00 | 1.08E+00 |
| Nitrophenol, 3- | 554-84-7 | 9.46E-01 | n | --- | --- | --- | 9.46E-01 | 1.87E+00 | 1.91E+00 |
| Nitrophenol, 4- | 100-02-7 | 1.12E+00 | n | --- | --- | --- | 1.12E+00 | 1.87E+00 | 2.76E+00 |
| Nitroquinoline-N-oxide, 4- | 56-57-5 | 4.32E-03 | c | 4.32E-03 | 5.53E-03 | 1.96E-02 | --- | --- | --- |
| Nitrosodiethanolamine, N- | 1116-54-7 | 1.83E-02 | c | 1.83E-02 | 1.86E-02 | 1.52E+00 | --- | --- | --- |
| Nitrosodiethylamine, N- | 55-18-5 | 2.90E-04 | c | 2.90E-04 | 3.47E-04 | 1.77E-03 | --- | --- | --- |
| Nitrosodimethylamine, N- | 62-75-9 | 9.62E-04 | c | 9.62E-04 | 1.02E-03 | 1.72E-02 | --- | --- | --- |
| Nitrosodi-n-propylamine, N- | 621-64-7 | 1.98E-03 | c | 1.98E-03 | 7.43E-03 | 2.70E-03 | --- | --- | --- |
| Nitrosodiphenylamine, N- | 86-30-6 | 4.21E-01 | c | 4.21E-01 | 1.06E+01 | 4.38E-01 | --- | --- | --- |
| Nitroso-methyl-ethyl-amine, N- | 10595-95-6 | 2.13E-03 | c | 2.13E-03 | 2.36E-03 | 2.20E-02 | --- | --- | --- |
| Nitrosomorpholine, N- | 59-89-2 | 7.67E-03 | c | 7.67E-03 | 7.76E-03 | 6.33E-01 | --- | --- | --- |
| Nitroso-N-ethylurea, N- | 759-73-9 | 3.39E-04 | c | 3.39E-04 | 3.71E-04 | 3.85E-03 | --- | --- | --- |
| Nitrosopiperidine, N- | 100-75-4 | 4.20E-03 | c | 4.20E-03 | 5.53E-03 | 1.75E-02 | --- | --- | --- |
| Nitrosopyrrolidine, N- | 930-55-2 | 2.12E-02 | c | 2.12E-02 | 2.48E-02 | 1.47E-01 | --- | --- | --- |
| Nitrotoluene, m- | 99-08-1 | 3.37E+00 | n | --- | --- | --- | 3.37E+00 | 9.36E+00 | 5.25E+00 |
| Nitrotoluene, o- | 88-72-2 | 3.37E+00 | n | --- | --- | --- | 3.37E+00 | 9.36E+00 | 5.25E+00 |
| Nitrotoluene, p- | 99-99-0 | 3.37E+00 | n | --- | --- | --- | 3.37E+00 | 9.36E+00 | 5.25E+00 |
| Nonanal | 124-19-6 | 1.84E+01 | n | --- | --- | --- | 1.84E+01 | 1.87E+02 | 2.04E+01 |
| Octamethylpyrophosphoramide | 152-16-9 | 1.86E+00 | n | --- | --- | --- | 1.86E+00 | 1.87E+00 | 5.06E+02 |
| Octanone | 106-68-3 | 1.48E+01 | n | --- | --- | --- | 1.48E+01 | 5.62E+01 | 2.00E+01 |
| Oxamyl | 23135-22-0 | 2.33E+01 | n | --- | --- | --- | 2.33E+01 | 2.34E+01 | 5.50E+03 |
| Paraquat | 1910-42-5 | 3.72E+00 | n | --- | --- | --- | 3.72E+00 | 4.21E+00 | 3.19E+01 |
| Parathion (ethyl parathion) | 56-38-2 | 9.69E-01 | n | --- | --- | --- | 9.69E-01 | 5.62E+00 | 1.17E+00 |
| Pebulate | 1114-71-2 | 6.65E+00 | n | --- | --- | --- | 6.65E+00 | 4.68E+01 | 7.75E+00 |
| Pentachloroethane | 76-01-7 | 4.65E-01 | c | 4.65E-01 | 2.00E+00 | 6.07E-01 | 9.35E+00 | 2.81E+01 | 1.40E+01 |
| Pentachloronitrobenzene | 82-68-8 | 3.53E-03 | c | 3.53E-03 | 2.00E-01 | 3.59E-03 | 8.06E-02 | 2.81E+00 | 8.30E-02 |
| Pentachlorophenol | 87-86-5 | 9.92E-03 | c | 9.92E-03 | 4.33E-01 | 1.01E-02 | 1.04E+00 | 2.81E+01 | 1.08E+00 |
| Pentadiene, 1,3-trans- | 2004-70-8 | 1.24E+01 | n | --- | --- | --- | 1.24E+01 | 5.62E+01 | 1.60E+01 |
| Pentaerythritol tetranitrate (PETN) | 78-11-5 | 6.24E+01 | n | --- | --- | --- | 6.24E+01 | 3.74E+02 | 7.48E+01 |
| Pentane | 109-66-0 | 3.67E+01 | n | --- | --- | --- | 3.67E+01 | 6.55E+02 | 3.89E+01 |
| Pentanediol, 1,5- | 111-29-5 | 4.31E+03 | n | --- | --- | --- | 4.31E+03 | 4.68E+03 | 5.40E+04 |
| Pentanone, 2- | 107-87-9 | 2.62E+01 | n | --- | --- | --- | 2.62E+01 | 3.74E+01 | 8.78E+01 |
| Pentyne, 1- | 627-19-0 | 1.31E+01 | n | --- | --- | --- | 1.31E+01 | 5.62E+01 | 1.71E+01 |
| Perchlorate | 14797-73-0 | 3.95E-01 | n | --- | --- | --- | 3.95E-01 | 6.55E-01 | 9.93E-01 |
| Phenacetin | 62-44-2 | 1.55E+01 | c | 1.55E+01 | 2.36E+01 | 4.48E+01 | --- | --- | --- |
| Phenanthrene | 85-01-8 | 1.07E+00 | n | --- | --- | --- | 1.07E+00 | 2.81E+01 | 1.11E+00 |
| Phenanthridine | 229-87-8 | 4.49E-01 | n | --- | --- | --- | 4.49E-01 | 2.81E+00 | 5.34E-01 |
| Phenol | 108-95-2 | 1.60E+02 | n | --- | --- | --- | 1.60E+02 | 2.81E+02 | 3.71E+02 |
| Phenylene diamine, m- | 108-45-2 | 5.42E+00 | n | --- | --- | --- | 5.42E+00 | 5.62E+00 | 1.53E+02 |
| Phenylene diamine, p- | 106-50-3 | 1.72E+02 | n | --- | --- | --- | 1.72E+02 | 1.78E+02 | 4.84E+03 |
| Phenyl mercuric acetate | 62-38-4 | 7.15E-02 | n | --- | --- | --- | 7.15E-02 | 7.49E-02 | 1.57E+00 |
| Phorate | 298-02-2 | 4.29E-02 | n | --- | --- | --- | 4.29E-02 | 1.87E-01 | 5.56E-02 |
| Phosalone | 2310-17-0 | 8.46E-01 | n | --- | --- | --- | 8.46E-01 | 1.87E+00 | 1.55E+00 |
| Phosdrin (mevinphos) | 7786-34-7 | 2.32E-02 | n | --- | --- | --- | 2.32E-02 | 2.34E-02 | 2.66E+00 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Phosmet | 732-11-6 | 1.64E+01 | n | --- | --- | --- | 1.64E+01 | 1.87E+01 | 1.32E+02 |
| Phosphine | 7803-51-2 | 1.69E-01 | n | --- | --- | --- | 1.69E-01 | 2.81E-01 | 4.25E-01 |
| Phosphorus, white | 7723-14-0 | 1.13E-02 | n | --- | --- | --- | 1.13E-02 | 1.87E-02 | 2.84E-02 |
| Phthalic anhydride | 85-44-9 | 9.13E+02 | n | --- | --- | --- | 9.13E+02 | 1.87E+03 | 1.78E+03 |
| Picloram | 1918-02-1 | 2.19E+01 | n | --- | --- | --- | 2.19E+01 | 6.55E+01 | 3.30E+01 |
| Picoline, 2- (2-methylpyridine) | 109-06-8 | 5.47E+00 | n | --- | --- | --- | 5.47E+00 | 8.42E+00 | 1.56E+01 |
| Polybrominated biphenyls (PBBs) | 67774-32-7 | 1.11E-04 | c | 1.11E-04 | 5.84E-03 | 1.14E-04 | 2.03E-04 | 6.55E-03 | 2.10E-04 |
| Primene | 68955-53-3 | 3.18E-01 | n | --- | --- | --- | 3.18E-01 | 5.62E+00 | 3.37E-01 |
| Prometon (pramitol) | 1610-18-0 | 4.66E+00 | n | --- | --- | --- | 4.66E+00 | 1.40E+01 | 6.97E+00 |
| Pronamide | 23950-58-5 | 1.22E+01 | n | --- | --- | --- | 1.22E+01 | 7.02E+01 | 1.48E+01 |
| Propanal (propionaldehyde) | 123-38-6 | 6.31E+00 | n | --- | --- | --- | 6.31E+00 | 7.49E+00 | 4.00E+01 |
| Propanil | 709-98-8 | 1.36E+00 | n | --- | --- | --- | 1.36E+00 | 4.68E+00 | 1.92E+00 |
| Propanoic acid (propionic acid) | 79-09-4 | 3.90E+02 | n | --- | --- | --- | 3.90E+02 | 4.68E+02 | 2.32E+03 |
| Propanol, 1- | 71-23-8 | 1.46E+02 | n | --- | --- | --- | 1.46E+02 | 1.87E+02 | 6.59E+02 |
| Propargite | 2312-35-8 | 4.38E+00 | n | --- | --- | --- | 4.38E+00 | 1.87E+01 | 5.72E+00 |
| Propargyl alcohol | 107-19-7 | 1.76E+00 | n | --- | --- | --- | 1.76E+00 | 1.87E+00 | 3.06E+01 |
| Propazine | 139-40-2 | 1.76E-01 | c | 1.76E-01 | 1.17E+00 | 2.07E-01 | 4.22E+00 | 1.87E+01 | 5.45E+00 |
| Propham | 122-42-9 | 6.23E+00 | n | --- | --- | --- | 6.23E+00 | 1.87E+01 | 9.34E+00 |
| Propionitrile (propane nitrile) | 107-12-0 | 3.25E-01 | n | --- | --- | --- | 3.25E-01 | 3.74E-01 | 2.46E+00 |
| Propyl acetate, n- | 109-60-4 | 5.71E+01 | n | --- | --- | --- | 5.71E+01 | 8.42E+01 | 1.77E+02 |
| Propylbenzene, n- | 103-65-1 | 2.35E+00 | n | --- | --- | --- | 2.35E+00 | 3.74E+01 | 2.50E+00 |
| Propylene glycol | 57-55-6 | 1.83E+04 | n | --- | --- | --- | 1.83E+04 | 1.87E+04 | 8.16E+05 |
| Propylene glycol monomethyl ether | 107-98-2 | 6.29E+02 | n | --- | --- | --- | 6.29E+02 | 6.55E+02 | 1.59E+04 |
| Propylene oxide | 75-56-9 | 1.81E-01 | c | 1.81E-01 | 2.17E-01 | 1.11E+00 | --- | --- | --- |
| Propylene tetramer | 6842-15-5 | 9.36E+01 | n | --- | --- | --- | 9.36E+01 | 9.36E+01 | --- |
| Pyridine | 110-86-1 | 7.17E-01 | n | --- | --- | --- | 7.17E-01 | 9.36E-01 | 3.07E+00 |
| Quinoline | 91-22-5 | 5.28E-03 | c | 5.28E-03 | 1.73E-02 | 7.59E-03 | --- | --- | --- |
| Ronnel | 299-84-3 | 2.04E+00 | n | --- | --- | --- | 2.04E+00 | 4.68E+01 | 2.13E+00 |
| Safrole | 94-59-7 | 3.16E-02 | c | 3.16E-02 | 2.36E-01 | 3.65E-02 | --- | --- | --- |
| Selenium | 7782-49-2 | 4.13E+00 | n | --- | --- | --- | 4.13E+00 | 4.68E+00 | 3.55E+01 |
| Selenourea | 630-10-4 | 4.68E+00 | n | --- | --- | --- | 4.68E+00 | 4.68E+00 | --- |
| Silver | 7440-22-4 | 1.57E+00 | n | --- | --- | --- | 1.57E+00 | 4.68E+00 | 2.36E+00 |
| Simazine | 122-34-9 | 1.18E-01 | c | 1.18E-01 | 4.33E-01 | 1.62E-01 | 1.78E+00 | 4.68E+00 | 2.87E+00 |
| Sodium diethyldithiocarbamate | 148-18-5 | 1.93E-01 | c | 1.93E-01 | 1.93E-01 | --- | 2.81E+01 | 2.81E+01 | --- |
| Sodium polyacrylate | 9003-04-7 | 3.93E+02 | n | --- | --- | --- | 3.93E+02 | 4.68E+02 | 2.47E+03 |
| Strontium | 7440-24-6 | 3.38E+02 | n | --- | --- | --- | 3.38E+02 | 5.62E+02 | 8.51E+02 |
| Strychnine | 57-24-9 | 2.33E-01 | n | --- | --- | --- | 2.33E-01 | 2.81E-01 | 1.35E+00 |
| Styrene | 100-42-5 | 2.98E+01 | n | --- | --- | --- | 2.98E+01 | 1.87E+02 | 3.55E+01 |
| Sulfolane | 126-33-0 | 1.84E-02 | n | --- | --- | --- | 1.84E-02 | 1.87E-02 | 1.07E+00 |
| Tebuconazole | 107534-96-3 | 2.81E+01 | n | --- | --- | --- | 2.81E+01 | 2.81E+01 | --- |
| Tebuthiuron | 34014-18-1 | 6.55E+01 | n | --- | --- | --- | 6.55E+01 | 6.55E+01 | --- |
| Terbufos | 13071-79-9 | 2.15E-03 | n | --- | --- | --- | 2.15E-03 | 2.34E-02 | 2.36E-03 |
| Tert-amyl-methyl ether (TAME) | 994-05-8 | 1.60E+01 | n | --- | --- | --- | 1.60E+01 | 3.74E+01 | 2.79E+01 |
| Tert-butyl alcohol (2-methyl-2-propanol) | 75-65-0 | 6.63E+01 | n | --- | --- | --- | 6.63E+01 | 8.42E+01 | 3.12E+02 |
| Tetrachlorobenzene, 1,2,3,4- | 634-66-2 | 8.15E-03 | n | --- | --- | --- | 8.15E-03 | 2.81E-01 | 8.39E-03 |
| Tetrachlorobenzene, 1,2,3,5- | 634-90-2 | 7.99E-03 | n | --- | --- | --- | 7.99E-03 | 2.81E-01 | 8.22E-03 |
| Tetrachlorobenzene, 1,2,4,5- | 95-94-3 | 9.70E-03 | n | --- | --- | --- | 9.70E-03 | 2.81E-01 | 1.00E-02 |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | 3.12E-01 | c | 3.12E-01 | 2.00E+00 | 3.70E-01 | 6.55E+00 | 2.81E+01 | 8.55E+00 |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | 9.38E-02 | c | 9.38E-02 | 2.60E-01 | 1.47E-01 | 1.80E+01 | 3.74E+01 | 3.48E+01 |
| Tetrachloroethylene (perchlorethylene) | 127-18-4 | 1.48E-01 | c | 1.48E-01 | 1.00E+00 | 1.74E-01 | 2.08E+00 | 9.36E+00 | 2.68E+00 |
| Tetrachlorophenol, 2,3,4,5- | 4901-51-3 | 1.35E+00 | n | --- | --- | --- | 1.35E+00 | 2.81E+01 | 1.42E+00 |
| Tetrachlorophenol, 2,3,4,6- | 58-90-2 | 2.13E+00 | n | --- | --- | --- | 2.13E+00 | 2.81E+01 | 2.31E+00 |
| Tetrachlorophenol, 2,3,5,6- | 935-95-5 | 1.17E+00 | n | --- | --- | --- | 1.17E+00 | 2.81E+01 | 1.22E+00 |
| Tetradifon | 116-29-0 | 2.61E+00 | n | --- | --- | --- | 2.61E+00 | 1.87E+01 | 3.04E+00 |
| Tetraethyl dithiopyrophosphate (sulfotep) | 3689-24-5 | 6.95E-02 | n | --- | --- | --- | 6.95E-02 | 4.68E-01 | 8.16E-02 |
| Tetraethyl lead | 78-00-2 | 3.99E-06 | n | --- | --- | --- | 3.99E-06 | 9.36E-05 | 4.17E-06 |
| Tetrahydrofuran | 109-99-9 | 4.84E+00 | c | 4.84E+00 | 6.84E+00 | 1.66E+01 | 1.50E+02 | 1.87E+02 | 7.48E+02 |
| Tetrahydropyran | 142-68-7 | 4.06E+00 | c | 4.06E+00 | 6.84E+00 | 9.97E+00 | 1.32E+02 | 1.87E+02 | 4.49E+02 |
| Thallium and compounds (as thallium chloride) | 7791-12-0 | 6.61E-02 | n | --- | --- | --- | 6.61E-02 | 7.49E-02 | 5.67E-01 |
| Thiofanox | 39196-18-4 | 1.65E-01 | n | --- | --- | --- | 1.65E-01 | 2.81E-01 | 3.99E-01 |
| Thionazin | 297-97-2 | 4.30E-02 | n | --- | --- | --- | 4.30E-02 | 6.55E-02 | 1.25E-01 |
| Thiophanate-methyl | 23564-05-8 | 6.71E+01 | n | --- | --- | --- | 6.71E+01 | 7.49E+01 | 6.44E+02 |
| Thiram | 137-26-8 | 3.58E+00 | n | --- | --- | --- | 3.58E+00 | 4.68E+00 | 1.53E+01 |
| Tin | 7440-31-5 | 2.42E+02 | n | --- | --- | --- | 2.42E+02 | 5.62E+02 | 4.25E+02 |
| Titanium | 7440-32-6 | 8.67E+04 | n | --- | --- | --- | 8.67E+04 | 4.68E+05 | 1.06E+05 |
| Toluene | 108-88-3 | 1.65E+01 | n | --- | --- | --- | 1.65E+01 | 7.49E+01 | 2.11E+01 |
| Toluenediamine, 2,4- | 95-80-7 | 1.45E-02 | c | 1.45E-02 | 1.62E-02 | 1.34E-01 | --- | --- | --- |
| Toluenediamine, 2,6- | 823-40-5 | 1.74E+02 | n | --- | --- | --- | 1.74E+02 | 1.87E+02 | 2.55E+03 |
| Toluidine, o- | 95-53-4 | 9.53E-02 | c | 9.53E-02 | 2.17E-01 | 1.70E-01 | --- | --- | --- |
| Toluidine, p- | 106-49-0 | 1.19E-01 | c | 1.19E-01 | 2.74E-01 | 2.12E-01 | --- | --- | --- |
| TP Silvex, 2,4,5- | 93-72-1 | 1.23E+00 | n | --- | --- | --- | 1.23E+00 | 7.49E+00 | 1.47E+00 |
| Triademenol | 55219-65-3 | 2.81E+01 | n | --- | --- | --- | 2.81E+01 | 2.81E+01 | --- |
| Triallate | 2303-17-5 | 7.29E-01 | n | --- | --- | --- | 7.29E-01 | 1.22E+01 | 7.75E-01 |
| Triaminotrinitrobenzene (TATB) | 3058-38-6 | 1.58E+00 | c | 1.58E+00 | 1.73E+00 | 1.77E+01 | 2.65E+00 | 2.81E+00 | 4.73E+01 |
| Tributyltin oxide | 56-35-9 | 1.70E-02 | n | --- | --- | --- | 1.70E-02 | 2.81E-01 | 1.81E-02 |
| Trichlorobenzene, 1,2,3- | 87-61-6 | 1.71E-01 | n | --- | --- | --- | 1.71E-01 | 2.81E+00 | 1.82E-01 |
| Trichlorobenzene, 1,2,4- | 120-82-1 | 6.50E-01 | n | --- | --- | --- | 6.50E-01 | 9.36E+00 | 6.99E-01 |

**Last Update: March 31, 2006**

# Tier 1 Contact Recreation Water PCLs [1]

| Chemical of Concern | CAS | | | Carcinogenic | | | Noncarcinogenic | | |
|---|---|---|---|---|---|---|---|---|---|
| | | $^{Tot}RW_{Comb}$ [2] (mg/L) | note [3] | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) | $^{Tot}RW_{Comb}$ [2] (mg/L) | $^{RW}RW_{Ing}$ (mg/L) | $^{RW}RW_{Derm}$ (mg/L) |
| Trichlorobenzene, 1,3,5- | 108-70-3 | 1.33E-01 | n | --- | --- | --- | 1.33E-01 | 2.81E+00 | 1.40E-01 |
| Trichloroethane, 1,1,1- | 71-55-6 | 4.72E+01 | n | --- | --- | --- | 4.72E+01 | 1.87E+02 | 6.31E+01 |
| Trichloroethane, 1,1,2- | 79-00-5 | 3.25E-01 | c | 3.25E-01 | 9.12E-01 | 5.05E-01 | 1.79E+00 | 3.74E+00 | 3.41E+00 |
| Trichloroethylene | 79-01-6 | 1.01E+00 | c | 1.01E+00 | 4.73E+00 | 1.29E+00 | 1.74E+00 | 5.62E+00 | 2.52E+00 |
| Trichlorofluoromethane | 75-69-4 | 4.33E+01 | n | --- | --- | --- | 4.33E+01 | 2.81E+02 | 5.12E+01 |
| Trichlorophenol, 2,3,4- | 15950-66-0 | 7.79E+00 | n | --- | --- | --- | 7.79E+00 | 9.36E+01 | 8.49E+00 |
| Trichlorophenol, 2,3,5- | 933-78-8 | 9.32E+00 | n | --- | --- | --- | 9.32E+00 | 9.36E+01 | 1.04E+01 |
| Trichlorophenol, 2,3,6- | 933-75-5 | 2.53E+00 | n | --- | --- | --- | 2.53E+00 | 9.36E+01 | 2.60E+00 |
| Trichlorophenol, 2,4,5- | 95-95-4 | 1.40E+01 | n | --- | --- | --- | 1.40E+01 | 9.36E+01 | 1.64E+01 |
| Trichlorophenol, 2,4,6- | 88-06-2 | 4.55E-01 | c | 4.55E-01 | 4.73E+00 | 5.04E-01 | --- | --- | --- |
| Trichlorophenol, 3,4,5- | 609-19-8 | 7.47E+00 | n | --- | --- | --- | 7.47E+00 | 9.36E+01 | 8.12E+00 |
| Trichlorophenoxyacetic acid, 2,4,5- | 93-76-5 | 2.36E+00 | n | --- | --- | --- | 2.36E+00 | 9.36E+00 | 3.16E+00 |
| Trichloropropane, 1,1,2- | 598-77-6 | 1.66E+00 | n | --- | --- | --- | 1.66E+00 | 4.68E+00 | 2.58E+00 |
| Trichloropropane, 1,2,3- | 96-18-4 | 1.71E-03 | c | 1.71E-03 | 7.43E-03 | 2.23E-03 | 1.86E+00 | 5.62E+00 | 2.77E+00 |
| Trichloro-1,2,2-trifluoroethane, 1,1,2- | 76-13-1 | 6.04E+03 | n | --- | --- | --- | 6.04E+03 | 2.81E+04 | 7.69E+03 |
| Triethanolamine | 102-71-6 | 1.87E+02 | n | --- | --- | --- | 1.87E+02 | 1.87E+02 | 3.82E+05 |
| Triethylene glycol | 112-27-6 | 2.79E+03 | n | --- | --- | --- | 2.79E+03 | 2.81E+03 | 3.75E+05 |
| Triethylphosphorothioate, O, O, O- | 126-68-1 | 2.91E-03 | n | --- | --- | --- | 2.91E-03 | 7.77E-03 | 4.66E-03 |
| Trimethylbenzene, 1,2,3- | 526-73-8 | 3.70E+00 | n | --- | --- | --- | 3.70E+00 | 4.68E+01 | 4.02E+00 |
| Trimethylbenzene, 1,2,4- | 95-63-6 | 3.26E+00 | n | --- | --- | --- | 3.26E+00 | 4.68E+01 | 3.50E+00 |
| Trimethylbenzene, 1,3,5- | 108-67-8 | 3.05E+00 | n | --- | --- | --- | 3.05E+00 | 4.68E+01 | 3.26E+00 |
| Trinitrobenzene, 1,3,5- | 99-35-4 | 2.25E+01 | n | --- | --- | --- | 2.25E+01 | 2.81E+01 | 1.14E+02 |
| Trinitrophenylmethylnitramine (tetryl; nitramine) | 479-45-8 | 6.80E+00 | n | --- | --- | --- | 6.80E+00 | 9.36E+00 | 2.48E+01 |
| Trinitrotoluene, 2,4,6- | 118-96-7 | 3.08E-01 | n | 9.36E-01 | 1.73E+00 | 2.03E+00 | 3.08E-01 | 4.68E-01 | 9.04E-01 |
| Uranium (soluble salts) | 7440-61-1 | 2.48E+00 | n | --- | --- | --- | 2.48E+00 | 2.81E+00 | 2.13E+01 |
| Valeric acid (pentanoic acid) | 109-52-4 | 2.72E+02 | n | --- | --- | --- | 2.72E+02 | 4.68E+02 | 6.52E+02 |
| Vanadium | 7440-62-2 | 1.08E+00 | n | --- | --- | --- | 1.08E+00 | 6.55E+00 | 1.29E+00 |
| Vernam | 1929-77-7 | 1.33E-01 | n | --- | --- | --- | 1.33E-01 | 9.36E-01 | 1.55E-01 |
| Vinyl acetate | 108-05-4 | 7.48E+02 | n | --- | --- | --- | 7.48E+02 | 9.36E+02 | 3.72E+03 |
| Vinyl chloride | 75-01-4 | 1.13E-02 | c | 1.13E-02 | 3.47E-02 | 1.68E-02 | 1.25E+00 | 2.81E+00 | 2.24E+00 |
| Vinylcyclohexane | 695-12-5 | 1.46E+01 | n | --- | --- | --- | 1.46E+01 | 4.68E+02 | 1.50E+01 |
| Warfarin | 81-81-2 | 9.62E-02 | n | --- | --- | --- | 9.62E-02 | 2.81E-01 | 1.46E-01 |
| Xylene, m- | 108-38-3 | 2.08E+02 | n | --- | --- | --- | 2.08E+02 | 1.87E+03 | 2.34E+02 |
| Xylene, o- | 95-47-6 | 2.27E+02 | n | --- | --- | --- | 2.27E+02 | 1.87E+03 | 2.59E+02 |
| Xylene, p- | 106-42-3 | 2.16E+02 | n | --- | --- | --- | 2.16E+02 | 1.87E+03 | 2.45E+02 |
| Xylenes | 1330-20-7 | 2.40E+01 | n | --- | --- | --- | 2.40E+01 | 1.87E+02 | 2.75E+01 |
| Zinc | 7440-66-6 | 2.01E+02 | n | --- | --- | --- | 2.01E+02 | 2.81E+02 | 7.09E+02 |
| 6 C aliphatics (TPH) | NA | 5.62E+01 | n | --- | --- | --- | 5.62E+01 | 5.62E+01 | --- |
| >6-8 C aliphatics (TPH) | NA | 5.62E+01 | n | --- | --- | --- | 5.62E+01 | 5.62E+01 | --- |
| >8-10 C aliphatics (TPH) | NA | 9.36E+01 | n | --- | --- | --- | 9.36E+01 | 9.36E+01 | --- |
| >10-12 C aliphatics (TPH) | NA | 9.36E+01 | n | --- | --- | --- | 9.36E+01 | 9.36E+01 | --- |
| >12-16 C aliphatics (TPH) | NA | 9.36E+01 | n | --- | --- | --- | 9.36E+01 | 9.36E+01 | --- |
| >16-21 C aliphatics (TPH) | NA | 1.87E+03 | n | --- | --- | --- | 1.87E+03 | 1.87E+03 | --- |
| >16-21 C, >21-35 C aliphatics (TPH) (for transformer mineral oil releases only) | NA | 1.50E+03 | n | --- | --- | --- | 1.50E+03 | 1.50E+03 | --- |
| >7-8 C aromatics (TPH) | NA | 9.36E+01 | n | --- | --- | --- | 9.36E+01 | 9.36E+01 | --- |
| >8-10 C aromatics (TPH) | NA | 3.74E+01 | n | --- | --- | --- | 3.74E+01 | 3.74E+01 | --- |
| >10-12 C aromatics (TPH) | NA | 3.74E+01 | n | --- | --- | --- | 3.74E+01 | 3.74E+01 | --- |
| >12-16 C aromatics (TPH) | NA | 3.74E+01 | n | --- | --- | --- | 3.74E+01 | 3.74E+01 | --- |
| >16-21 C aromatics (TPH) | NA | 2.81E+01 | n | --- | --- | --- | 2.81E+01 | 2.81E+01 | --- |
| >21-35 C aromatics (TPH) | NA | 2.81E+01 | n | --- | --- | --- | 2.81E+01 | 2.81E+01 | --- |

**Footnotes**

[1] In accordance with §350.72(b), when establishing Tier 1 PCLs for individual COCs for each of the individual and combined human health exposure pathways, person must evaluate whether the PCLs need to be adjusted to lower concentrations to meet the cumulative carcinogenic risk level and hazard index criteria specified in §350.72(c). For COCs which exhibit both carcinogenic and noncarcinogenic characteristics, they shall be evaluated as both a carcinogen and noncarcinogen when determining whether the PCL established for an individual COC for each of the individual and combined human health exposure pathways needs to be adjusted to a lower concentration to meet the cumulative risk and hazard criteria. The person shall then use the lower of the carcinogenic or noncarcinogenic PCL as the Tier 1 human health PCL. In other words, the Tier 1 PCLs provided in this table for an individual COC should not be used as the final Tier 1 human health PCL for any of the individual or combined exposure pathways in cases where there are more than 10 carcinogenic and/or more than 10 noncarcinogenic COCs within a source medium unless it can be demonstrated that further downward adjustment is not necessary to meet the cumulative risk and hazard criteria.

[2] Combined includes incidental ingestion and dermal pathway

[3] c = carcinogenic; n = noncarcinogenic