

**BAPPG/BACWA Wastewater Pesticides Watch List**  
*Currently registered pesticides that may occur in wastewater*

Priority	Basis for Priority Assignment	Pesticides	
1 – High Concern	<ul style="list-style-type: none"> <li>a) POTW effluent monitoring data<sup>1</sup> exceeding benchmarks</li> <li>b) Known cause of process interference</li> <li>c) Present in recycled water or biosolids at concentrations that limit use</li> <li>d) SF Bay area receiving water 303(d) listing for the pesticide or degradate</li> </ul>	Pyrethroids <sup>#</sup> (21 chemicals <sup>2</sup> ) Fipronil <sup>#</sup> Imidacloprid <sup>#</sup>	
2 – Moderate Concern	<ul style="list-style-type: none"> <li>a) Pesticide contains a Clean Water Act Priority Pollutant</li> <li>b) SF Bay area receiving water 303(d) listing for the pesticide, degradate or contaminant that also has non-pesticide sources</li> </ul>	Copper pesticides <sup>+</sup> Silver pesticides <sup>+</sup> Zinc pesticides <sup>+</sup>	
3 – Possible Concern	Monitoring data <sup>1</sup> approaching <u>or</u> wastewater discharge modeling predicting: <ul style="list-style-type: none"> <li>a) effluent or receiving water benchmark exceedances</li> <li>b) process interference</li> <li>c) limitations on use of recycled water or biosolids <u>or</u> used for pet flea control</li> </ul>	Amitraz <sup>#</sup> Ammonium bromide 1,2-Benzisothiazolin-3-one (BIT) Bronopol (Bioban) Cetylpyridinium Chloride Chlorhexidine Chlorinated isocyanurates <sup>+</sup> Clothianidin 2,2-Dibromo-3-Nitrilopropionamide (DBNPA) 4,5-dichloro-2-octyl-3(2H)-isothiazolone (DCOIT) Dichlobenil <sup>^</sup> Dinotefuran <sup>#</sup> Diquat dibromide <sup>^</sup> Fluralaner (FDA reg.) <sup>#</sup> Folpet Halohydanitoin <sup>+</sup> Indoxacarb <sup>#</sup> IPBC Malathion (lice) Metam sodium <sup>^</sup>	2-methyl-4-isothiazolin-3-one (MIT) 5- chloro-2-methyl-4-isothiazolin-3-one (CMIT) Methoprene <sup>#</sup> Moxidectin (FDA reg.) <sup>#</sup> Nanopesticides (all) 10,10 oxybisphenoxarsine (OBPA) o-Benzyl-p-chlorophenol (OBPC) Othilinone 2-n-Octyl-4-isothiazoline-3-one (OIT) Organic Esters of Phosphoric Acid (OEPA) o-Phenyl phenol Polyhexamethylenebiguanidine (PHMB) <sup>+</sup> Potassium Peroxymonosulfate <sup>+5</sup> Pyriproxyfen <sup>##</sup> Quaternary Ammonium Compounds (QACs) <sup>+6</sup> Selemectin (FDA reg.) <sup>#</sup> Spinetoram <sup>#</sup> Tetrachlorvinphos <sup>#</sup> (TCVP) Triclosan Tri-n Butyl Tetradecyl Phosphonium Chloride (TTPC)
Pools & hot tubs	Avoiding collection system backups	Busan-77 <sup>+</sup> Chlorine <sup>+</sup> Hypochlorites <sup>+</sup>	Sodium bromide <sup>+</sup> Sodium tetraborate <sup>+4</sup> (plus chemicals above with “ <sup>++</sup> ”)
Pending	New pesticides that could threaten wastewater depending on uses approved and market volumes for existing minor indoor uses	Abamectin Broflanilide Chlorfenapyr Chlorantraniliprole Cyantraniliprole	Cyclaniliprole Neonicotinoids not listed above <sup>3</sup> Novaluron SI-183 (1R-Phenothrin)
No Concern	No tracking trigger	Most of the 1,000 existing pesticides	

Unknown	Lack of information. No systematic screening has ever been completed for urban pesticides.	Unknown
---------	--	---------

<sup>1</sup>Not necessarily data from SF Bay Area

<sup>2</sup>Pyrethroids = Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluorothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tefluthrin, Tetramethrin, Tralomethrin

<sup>3</sup>Neonicotinoids = Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nitenpyram, Thiacloprid, Thiamethoxam

<sup>4</sup>EPA Registration Review name: "Boric acid/Sodium Salts"

<sup>5</sup>EPA Registration Review name: Hypochlorous Acid; EPA may determine that it is an adjuvant subject only to CA registration.

<sup>6</sup>QACs used indoors include ADBAC, BAC, ATMAC, DADMAC, DDAC, EBAC, APyC, and others. Additional QACs are listed on the pool/spa pesticide list below.

\*Has pool and/or hot tub use in California

^Has root control use in California

#Has pet flea/tick use

### Swimming Pool and Hot Tub Pesticides

#### Halohydrantoin:

- Trichloro-S-Triazinetrione
- 1-Bromo-3-Chloro-5,5-Dimethyl Hydantoin
- 1,3-Dichloro-5,5-Dimethylhydantoin
- 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
- 1,3-Dibromo-5,5-Dimethylhydantoin
- Imidazolidinedione

Hypochlorites: Calcium Hypochlorite, Sodium Hypochlorite, Potassium Hypochlorite, Lithium Hypochlorite

Chlorinated isocyanurates: Sodium Dichloro-S-Triazinetrione, Sodium Dichloro-S-Triazinetrione Dihydrate

#### Copper:

- Copper Sulfate (Pentahydrate)
- Copper Ethanolamine Complexes Mixed
- Copper Triethanolamine Complex
- Copper Citrate
- Copper

#### Quats/ADBAC, DDAC, and EBAC family chemicals:

- Alkyl (50%C14, 40%C12, 10%C16) Dimethylbenzyl Ammonium Chloride
- Alkyl (60%C14, 30%C16, 5%C12, 5%C18) Dimethylbenzyl Ammonium
- N-Dialkyl (60%C14, 30%C16, 5%C12, 5%C18) Methyl Benzyl Ammonium Chloride
- Alkyl (68%C12, 32%C14) Dimethylethylbenzyl Ammonium Chloride
- Didecyl Dimethyl Ammonium Chloride
- Alkyl (58%C14, 28%C16, 14%C12) Dimethylbenzyl Ammonium Chloride
- Alkyl (67%C12, 25%C14, 7%C16, 1%C8,C10,C18) Dimethylbenzyl Ammonium Chloride
- Alkyl (95%C14, 3%C12, 2%C16) Dimethyl Benzyl Ammonium Chloride
- Alkyl (50%C14, 40%C12, 10%C16) Dimethylbenzyl Ammonium Saccharinate
- Alkyl (61%C12,23%C14,11%C16,2.5%C8 & C10,2.5%C18) Dimethyl Benzyl Ammonium Chloride
- Alkyl (67%C12, 25%C14, 7%C16, 1%C18) Dimethylbenzyl Ammonium Chloride

#### Silver:

- Metallic Silver
- Silver Chloride
- Silver Iodide, Colloidal

#### Others:

- Busan-77 [a polyquat also known as Polixetonium Chloride or Poly(Oxyethylene) (Dimethylimino) Ethylene (Dimethylimino) Ethylene Dichloride]
- Sodium Bromide (EPA "Inorganic halides")
- Zinc Sulfate Monohydrate
- Polyhexamethylene Biguanidine (PHMB)
- Chlorine
- Sodium Tetraborate (Pentahydrate) (EPA "Boric Acid/Sodium Salts")
- Pyriproxyfen
- 10,10 oxybisphenoxarsine (OBPA): used in coating interiors of pools and hot tubs
- Potassium Peroxymonosulfate and Potassium Peroxymonosulfate Sulfate