

# CARBTRONL Tech Tip

## MANAGING HYDROCARBONS, PESTICIDES AND HERBICIDES IN GOLF WASHWATER SYSTEMS

Modern golf course washwater systems must address the removal of hydrocarbons, pesticides and herbicides as well as the silt, sand and grass associated with maintaining turf equipment. Increasingly ground and groundwater contamination is being identified in the golf maintenance area where the repetitive cleaning and filling of equipment leads to a gradual accumulation of chemicals in the subsurface. Thus it's important that your washwater treatment system use the best technology for treating the turf chemicals you use.

The USEPA has established guidelines for water treatment and pesticide management and has developed a comprehensive listing of individual pesticides and the best available technologies for their treatment. The listing can be found in **The Code of Federal Regulations 40 CFR CHAPTER I - PART 455**. The recommended technologies include activated carbon adsorption, chemical oxidation, precipitation and hydrolysis.

<http://epa.gov/waterscience/guide/p2/pdf/appa.pdf> - then go to page 57554

**CARBTRONL** washwater systems incorporate each of these EPA recommended technologies in a package that insures adequate treatment regardless of wash conditions. **Unlike biological based systems Carbtronal washwater systems are not affected by changes in temperature, pH, or shock loads resulting from small turf chemical spills. Biological treatment is not identified as Best Available Treatment Technology for any turf chemical.**

The following is a list of the some of the most commonly used turf chemicals and the associated EPA recommended **BEST AVAILABLE TECHNOLOGY**.

<u>Chemical Name</u>	<u>Trade Name</u>	<u>EPA Technology</u>
2,4-D Dimethylamine	2,4-D	activated carbon
chlorothalonil	Daconil 2787	activated carbon
thiram	Spotrete	activated carbon
fosetyl-AL	Aliette	activated carbon
paclobutrazol	Defend	activated carbon
vinclozolin	Touche	activated carbon
tridimefon	Bayleton	activated carbon
propiconazole	Banner	activated carbon
ethazole	Terrazole	activated carbon
bensulide	Betasan	activated carbon
acephate	Orthene	activated carbon
iprodione	Chipco 26019	activated carbon
pendimethalin	Pendulum	activated carbon
bendiocarb	Turcam	hydrolysis
carbaryl	Sevin	hydrolysis
fonofos	Crusade	hydrolysis
chloroneb	Terremec SP	chemical oxidation
glyphosate	Roundup	chemical oxidation
chlorpyrifos	Dursban	chemical oxidation

Use of EPA technology represents current best science and provides the highest assurance that future turf products containing similar active ingredients can be handled effectively.