

**Developer Beware:**

**Some agreements lead to spending big money on foolish tests, and for years to come**

By STUART COHEN

Bruce Cadenelli, certified golf course superintendent at Caves Valley Club in Maryland, estimates his club has spent \$367,000 in five years for ground water and pond monitoring and three years of stream monitoring.

In less than 2-1/2 years, Guam International Country Club was required to spend \$1.7 million for a ground-water monitoring study.

Water-quality monitoring studies are more involved than just going out, grabbing a sample and sending it to a laboratory, requesting an analysis for "pesticides."

Time and again, golf course developers are agreeing to perform water monitoring for many pesticides that need not be monitored at all, and at extraordinary costs.

A protocol has to be written and approved, monitoring wells and/or stream monitoring stations have to be installed, a lab has to be found that can analyze the pesticides used, and a study director should be hired to manage the study and interpret the results.

Ron Meyer, New Jersey DEPE in Trenton, estimates a minimum cost of \$23,000 per year for lab analyses for a ground-water study, with the following conservative assumptions: four monitoring

wells, \$150 per pesticide method (cheap!), and analyzing two-thirds of the applied chemicals. This does not include costs for protocol development, well installation, or project management.

There are many reasons why costs run out of control like this. The most significant impacts usually result from unnecessary lab analyses. Oftentimes, regulators mandate that courses analyze for all pesticides applied to the site. Developers often agree because

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their environmental consultants think of "pesticides" as DDT, chlordane, etc. — the old chlorinated hydrocarbons that constitute EPA Method 608. This analysis is easy and typically costs \$150 to \$200 per sample.

But superintendents are two to three generations past these chemicals. The new pesticides have

complex structures with a wide variety of structural classes. This means that 25 pesticides applied to a modern course may require five to nine different analytical methods, at \$150 to \$400 per method per sample. This translates to approximately \$20,000 to \$90,000 per year for quarterly analysis, depending on the number of sampling points. Add to this the cost for sampling, etc.

How can these costs be reduced? Try this:

- Develop an integrated golf course management plan, coupled with an environmental risk assessment. This can be a strong argument against doing any monitoring.

- Offer examples such as this to help demonstrate the generally low hazard potential of golf courses.

- Make a case to regulators that you only need to analyze for the pesticides with the highest mobility, persistence and toxicity.

- Pray.

**What was tested at the 13 sites**

Pesticides and Metabolites Monitored at One or More Golf Courses:

**HERBICIDES**

Alachlor, aldicarb, a.sulfone, a.sulfoxide, atrazine, bentazon, bromacil, 1,2-D, 1,3-D, (cis & trans), 2,4-D, 2,4-DB, dicamba, dichlorprop, dinoseb, diuron, glyphosate, hexazinone, linuron, MCPA, MCPP, metribuzin & metabolites (DA, DK, DADK), norflurazon, oryzalin, picloram, prometryn, pronamide, simazine, 2,4,5-T, 2,4,5-TP.

**INSECTICIDES**

acephate, gamma-BHC (lindane), bendiocarb, carbaryl, carbofuran & metabolite (3-OH carbofuran), chlordane, chlorinated hydrocarbon insecticides, chlorpyrifos & metabolites (chlorpyrifos oxon, 3,5,6-trichloro-2-pyridinol), DBCP, diazinon, disulfoton, EDB, ethion, ethoprop.

Also, ethylparathion, fenamiphos & metabolites (f. sulfone, f.sulfoxide), heptachlor & metabolite (h.epoxide), isazofos, isofenphos, methamidiphos, methomyl, methyl bromide, methylthiocyanate, methyl parathion, mevinphos, MIPC, monocrotophos, naled, oxamyl, phorate, propoxur, terbufos.

**FUNGICIDES**

anilazine, benomyl, chloropicrin, chlorothalonil, fenarimol, iprodione, metalaxyl, thiram, triadimefon

GOLF COURSE NEWS

**With All The Abuse Your Turf Takes, Who Needs Root Pruning?**

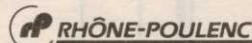


You know the story. The guys who swing an iron the way a lumberjack wields an ax are the same guys who yell the loudest when weeds give them a bad lie. So, with all the abuse your turf takes, the last thing you need is root-pruning from your herbicide. That's why you need CHIPCO® RONSTAR® brand G herbicide. University root pull studies show that CHIPCO® RONSTAR® G works without pruning turf roots. That means healthier roots and stronger, more durable turf. Best of all, just one pre-emergence application provides season-long control of 25 tough broadleaf and grassy

weeds—including goosegrass, crabgrass and Poa Annua. You'll also appreciate the fact that CHIPCO® RONSTAR® G is labeled for use on a wide variety of ornamentals, and is now available in a new low-dust formulation that makes application even more convenient. CHIPCO® RONSTAR® brand G herbicide. It can't improve the quality of play on your course, just the quality of weed control.

**New Low-Dust Formulation  
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