

TIMELY INFORMATION

Toomer's Remediation Task Force

The Poisoning of Toomer's Oaks (Part 2)

Who is involved in the task force to save Toomer's oaks? This is a joint effort among multiple Auburn University Schools, Colleges and Departments. Current members of the working group reside in the **Department of Horticulture, Department of Agronomy and Soils, School of Forestry and Wildlife Sciences, Department of Chemistry, Landscape Services, and Department of Civil Engineering.** Additionally, **Dow AgroSciences** has provided extensive technical assistance.

What do the most recent soil test results show us about the tebuthiuron contamination around Toomer's oaks? First, there is some good news. Soil sampling under the bricks surrounding the trees and in the landscaping in Samford Park adjacent to the trees DOES NOT show high concentrations of tebuthiuron (Figure 1). *Note: Figure 1 does not include the tebuthiuron concentrations previously measured inside the beds.* The sampling, however, does indicate that there are at least four spots that are of concern outside of the beds around the trees. The highest contaminated spot is on the southwest side of the tree closest to Magnolia Avenue. There, the soil test found 68.9 parts per billion (ppb). The other three spots are on the west and southwest sides of the larger tree that is closest to College Avenue. There, the concentrations are 38.1, 34.2, and 30.6 ppb. Note that these four spots are well below the concentrations found within the beds of the two Toomer's oak trees. A tebuthiuron concentration of 30.6 ppb is about 1,555 times lower than the average concentration found in the bed of the larger tree. In addition, the data indicate very low concentrations of tebuthiuron (0.43-11.2 ppb) at several sampling points around the plaza.

Are the four spots of concern high enough to be a potential problem? The working group has concluded that the soil in these areas will need to be removed to be on the safe side as these concentrations are high enough to cause damage to the trees.

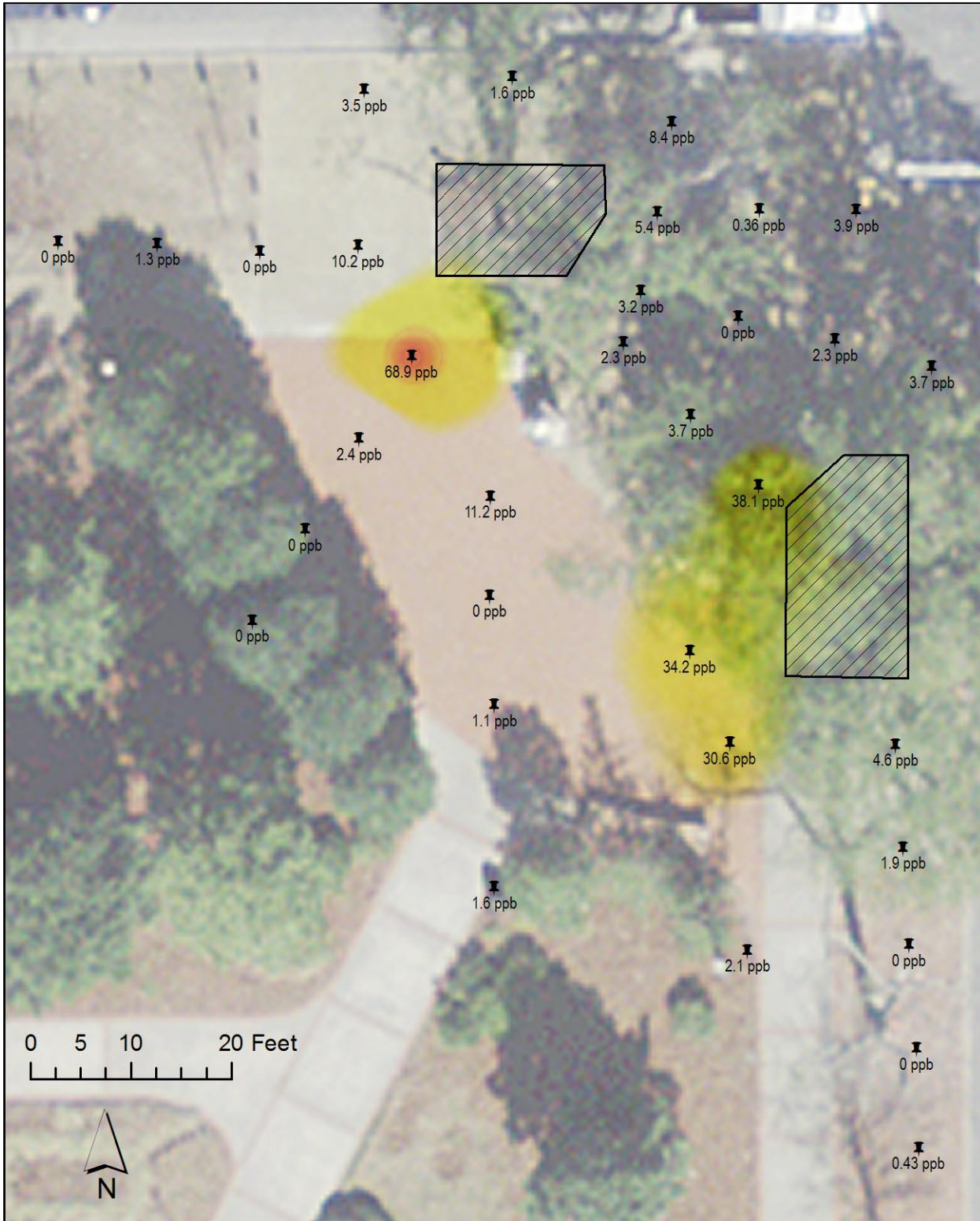
What about the lower tebuthiuron concentrations that are found around the plaza that range from 0.43 to 11.2 parts per billion? At this time, we do not believe that these concentrations pose a serious threat to the trees or other landscape plants in the area. However, we are in the process of collecting as much data as we can to be sure that this is correct and will re-evaluate as new information comes in.

If the herbicide was placed around the base of the trees, how did some of it move out of the beds? This question is difficult to answer, but there are at least two possibilities. The first possibility is that some of the herbicide was moved during the washing of the trees and toilet paper cleanup after each celebration. The second is that it may have been moved by foot traffic (on soil sticking to people's shoes) during or after each celebration. Either way, the low concentrations may indicate that it has not moved laterally in the soil.

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Figure 1. Tebuthiuron concentrations in the upper eight inches of soil at each sample point. The boxes with diagonal stripes represent the location of the tree beds. ppb = parts per billion.



Has the herbicide moved to the groundwater? This round of soil samples did not sample deep enough to determine this. However, monitoring wells are planned that will help answer this question.

What is currently happening under those tents surrounding each tree?

Contaminated soil within each bed is being loosened with an air spade and then vacuumed into a holding tank (Figures 2 and 3). This approach was deemed the safest to the roots within the beds. However, this is still an incredibly difficult process given the sheer size of the woody root mass at the base of each tree. The soil is being excavated down to a depth of 18-24 inches. Following removal, the soil will be replaced with new soil that will be mixed with activated charcoal. Additional soil and root samples have also been taken from the beds to assess the depth of the tebuthiuron contamination. These results will be released as soon as the samples are analyzed.

Figure 3. Soil removal within the beds of Toomer's oaks. The squared shape of the roots is from constricted growth in the bed which was expanded in the last few years.

Figure 2. Soil removal at the base of Toomer's oaks.



The information was prepared by Drs. Stephen Enloe, Scott McElroy, Gary Keever, Navin Twarakavi, and Donn Rodekohr.