

**DATE:** APRIL 28, 2014  
**TO:** DAN KING, Assistant Vice President for Facilities Management  
**THROUGH:** JIM CARROLL, University Architect  
**FROM:** JEFFREY DUMARS, Assistant Director Campus Planning & Space Management  
BEN BURMESTER, Campus Planner/Design Project Lead  
**SUBJECT:** **Samford Park at Toomer's Corner Redevelopment (Project #13-109)**  
**Soil Contaminant Removal Complete**

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This memorandum is to document the remediation efforts at the Samford Park at Toomer's Corner site and provide a record of the decisions made as part of the project.

**Background:**

Following the poisoning of the historic Auburn Oaks, three different sampling events occurred to determine the extent of tebuthiuron, the active ingredient in Spike 80DF herbicide, found in Samford Park. With the latest sampling in October 2013 confirming the presence of detectable amounts of tebuthiuron across the site, it was decided to take the most conservative remediation approach recommended by the environmental consultant, Applied Aquaculture and Environmental Technologies. The remediation approach included:

1. Complete removal and disposal of contaminated soil in all areas excavation was possible.
2. Installation of a sub-grade liner in areas where excavation was not possible (i.e. under the historic gate structures and along the roadways).

The design documents called for a three foot excavation across the corner and six foot excavation in the existing and proposed tree planting areas. The six foot deep over-excavated areas will ensure any tebuthiuron that could affect the future trees would be removed and replaced with a proper soil medium. Because excavation was not possible under the historic gates and adjacent roads, an impervious membrane was specified along the road grade cuts and around the gate footings to ensure that contamination could not move horizontally to negatively affect replacement trees. To confirm the removal of the tebuthiuron in all excavated areas, confirmation sampling was planned after the specified depths were reached.

This approach was presented to DOW AgroSciences, manufacturer of Spike 80DF herbicide, in January 2014, hoping to learn of an acceptable concentration that could be allowed to remain in the soil after remediation. With no verifiable data on what minimum levels of tebuthiuron would harm an Oak tree, DOW and Auburn University representatives in a conference call agreed upon a maximum concentration threshold of one part per billion, the reporting limit of the laboratory. The representatives agreed that without any verifiable data on the minimum amount of tebuthiuron that would impair a tree, the one part per billion threshold is likely ultra-conservative, but prudent considering the prominence of the project.

**Summary of Remediation Efforts:**

The contractor began the remediation process by removing the existing stumps on April 8, 2014 followed by excavating to the three or six foot elevations. On April 14, 2014, the contractor completed the specified excavation including the two six foot deep pits. While excavating the two six foot deep locations, water began filling into the pits between the five and six foot elevation depths, likely due to extensive rains the site had received just prior to the start and during the remediation process. This water remained in the pits at a depth of approximately six inches. Fourteen composite soil samples, three from the six foot deep pits and eleven from across the remainder of the site, were taken and delivered to the Alabama Pesticide Residue Lab for analysis on April 14, 2014. Additionally, two water samples were taken and also given to the Alabama Pesticide Residue Lab for testing for tebuthiuron. The analytical results received on April 16, 2014 found that no area of the site in the three foot cut area had contamination levels higher than the one part per billion threshold. However, the three soil samples in the six foot deep pits had detectable amounts of tebuthiuron at levels of three to six parts per billion while the water samples were detected to have six to eight parts per billion.

With the majority of the site testing clean, a decision needed to be made on how to handle the soil and water in the six foot deep pits that tested above the one part per billion threshold. An onsite meeting

was held on April 17, 2014 with representatives from Holcombe Norton Partners, Applied Aquaculture and Environmental Technologies, JA Lett Construction, JLD Enterprises, Auburn University Facilities Management and Auburn University Department of Horticulture to determine the appropriate course of action. Because the proposed replacement tree root depth will not reach the six foot elevation, excavating deeper would not help the survivability of the future trees thus additional digging would not be beneficial. The greater concern for the group was the tebuthiuron found in the water that was likely the result of rain and ground water contacting the non-excavated areas under the gates and roads. Once a liner is installed, movement of tebuthiuron horizontally would be blocked but there is a concern that it could pass below the liner and rise vertically to within the roots of the proposed trees. Therefore and in keeping with the ultra-conservative design intent, a design change was recommended to safe-guard against the possibility of the trace amounts of tebuthiuron affecting the future trees.

The contractor was given direction to de-water and de-muck both pits with the water to be taken to a wastewater treatment facility and additional removed soil to be manifested and delivered to the landfill. The loose soil was to be removed and the pits graded to drain away from the proposed tree locations to a low spot and be intercepted with a new permanent underdrain system. This new drainage system will be installed to ensure the pits will drain via a gravity system to a storm drain near Biggin Hall. This will allow any remaining traces of the tebuthiuron to be flushed out of the site. After the drainage system and impervious membrane is in place the site will be suitable for backfill and installation of new trees.

**Acknowledgements:**

The project team is very excited to declare the site clear after over three years of first trying to save the historic Oaks, remorsefully taking them down and now fully remediating the site for new trees to be transplanted. The initial testing in January 2011 found the soil around the trees in the planters to have levels as high as 51.7 parts per million or 51,700 parts per billion while the most recent pre-remediation sampling across the site outside the planters having levels as high 67.7 parts per billion. We are excited to report that the highest tebuthiuron detected across the site is not greater than one part per billion and at six foot deep at the old planter location the greatest detection was found to be six parts per billion with a plan in place to ensure there will be no tebuthiuron effect on the future trees.

Many of the individuals and organizations involved in this project have been mentioned already but we would like to specifically recognize the efforts of the entire team that worked together to come to a solution that we believe provides a clean site at this historic location. The individuals include:

Tommy Holcombe, Holcombe Norton Partners Inc.  
Chris Pugh, Holcombe Norton Partners, Inc.  
Ed Norton, Holcombe Norton Partners Inc.  
Tom Schmittou, Applied Aquaculture and Environmental Technologies  
Brandon Tidwell, JA Lett Construction  
Jonathan Spurlin, JA Lett Construction  
Jeff Davis, JLD Enterprises  
Danny LeCompte, Alabama Pesticide Residue Laboratory  
Cornelia Johnson, Alabama Pesticide Residue Laboratory  
Rebecca Moseley, Alabama Pesticide Residue Laboratory  
Lance Hester, State of Alabama Department of Agriculture and Industries  
Tony Cofer, State of Alabama Department of Agriculture and Industries  
Bob Masters, Dow AgroSciences  
Mike Clardy, Auburn University Office of Communications and Marketing  
Gail Riese, Auburn University Facilities Management  
Gary Keever, Auburn University Department of Horticulture  
Tom McCauley, Auburn University Risk Management and Safety  
Buster Reese, Auburn University Facilities Management  
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