



Toomer's Corner Oak Remediation Chronology

Soil Sampling

Date: 02-11-11

Sampling Design:

10 foot intervals on 10 radii beginning ~15 feet from the center of the live oak bordering Magnolia Street. One radius sampled ~due south of the College Street live oak.

Sample Labels:

Beginning due north and continuing clockwise for 360 degrees

Magnolia Street Live Oak:

M1A	M2A	M3A	M4A	M4A	M6A	M7A	M8A	M9A	M10A
		M3B	M4B	M5B	M6B	M7B	M8B	M9B	
		M3C	M4C	M5C	M6C	M7C	M8C	M9C	
			M4D			M7D	M8D	M9D	

M1A located due north of Magnolia Street Oak, sample sites labeled clockwise from M1A

College Street Live Oak:

C1A
C1B
C1C
C1D
C1E

C1A located due south of College Street Oak,
Coding: M=Magnolia St Oak, C= College St Oak; Numbers – radii; letter = position on radii from central point

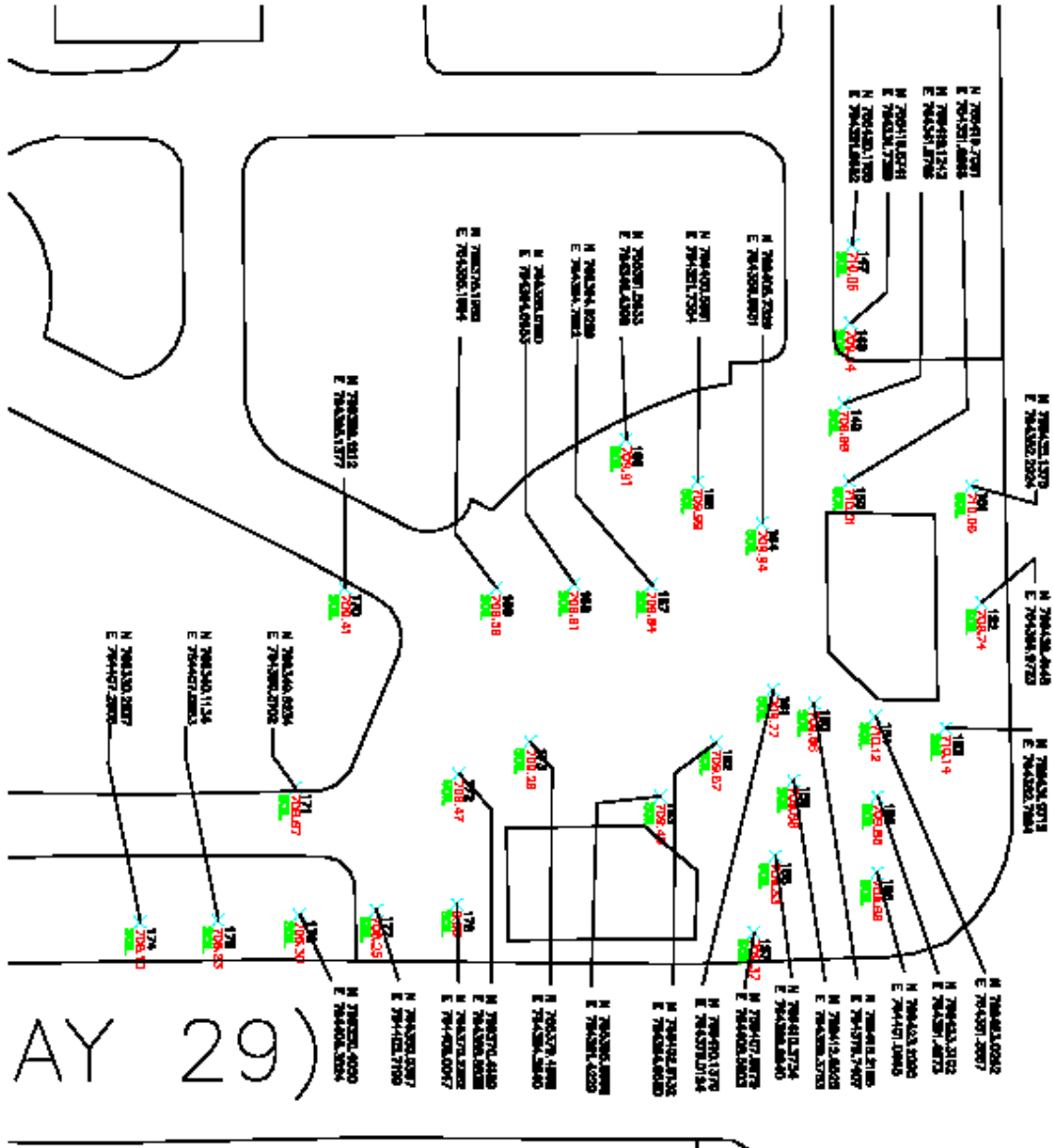
Procedures:

Prior to sampling, standard sampling procedures were discussed with Dr. Danny LeCompte, Director of the Alabama Dept. of Ag. & Industries State Pesticide Residue

Laboratory and Mr. Tom McCauley, AU Risk Management and Safety Environmental Programs Manager.

1. Sample locations were flagged, located using GPS, and plotted on University maps (see below). Single pavers were removed at each location; 1-inch cores extracted using aluminum piping driven ~8 inches into the crushed granite base and subsoil; and samples placed into coded bags before sealing by personnel using pesticide protective gloves and safety goggles (person extracting samples only). New piping was used for each sample to avoid contamination. Samples were boxed and placed in a freezer within two hours where they were held until over-night shipment to an independent laboratory





Charcoal application

Date: 02-16-11

Mitigation of organic compounds begins by attempting to neutralize that compound with activated charcoal or other material. We acquired a flowable charcoal deactivator (Brandt 52 Pickup) and applied the product per the label recommendation.

Application design:

The bordered bed spaces for both the Magnolia Street Oak and the College Street Oak were measured and the square footage used to determine the appropriate rate of flowable charcoal.

Procedure:

Total area of exposed bed space is approximately 700 square feet. Label recommendations using 64 ounces per 1000 square feet. Product was measured using calibrate cylinders and mixed with sufficient water to produce a homogenous slurry. This slurry was poured over the affected areas until each location had the recommended amounts of active product. No extra PPE's (Personal Protective Equipment) were required other than to prevent staining by the charcoal.

Once the first application was complete, the treated areas were irrigated with a low volume fine spray to incorporate the charcoal. After the areas were saturated to field capacity, irrigation was stopped and preparations made for a second full strength flowable charcoal application because of the extremely high concentrations of tibuthiuron in the beds.

Once the surface areas were free of standing water, a second application of 64 ounces per 1000 square feet was made. After treating the areas, the product was irrigated into the soil again using a low volume spray across the entire affected zone.





Anti-transpirant application

Date: 02-17-11

Soil borne toxins are absorbed by the root system and translocated in the plant through the xylem. Absorption and movement are driven by moisture loss through the foliage (transpiration). In an effort to slow this process and delay or reduce the amount of toxins absorbed, an anti-transpirant can be applied. This is a common practice when transplanting trees. We purchased a product (Gordon's TransFilm Anti-transpirant) which contains polymeric terpenes and oxidized polyethylene as the primary functioning agents. The recommended use rate for transplanting trees is a range from 2.5% to 5.0%. We utilized the midpoint rate of 3.75%.

Application design:

A spray gun designed for tree applications with sufficient pressure was used to create a mist and/or a stream spray for covering the exterior canopy of the affected trees. Traffic was rerouted and pedestrian traffic limited during the operation.

Procedure:

Debris was removed from the tree prior to spraying. The applicator was lifted using a hydraulic man-lift to a height of 20' to ensure proper coverage. The man-lift was moved around each tree to provide the best angles for spraying. Each tree was covered from all directions and the canopy sprayed from underneath to insure thorough coverage of the undersides of the leaves through which transpiration occurs. We utilized 60 gallons of

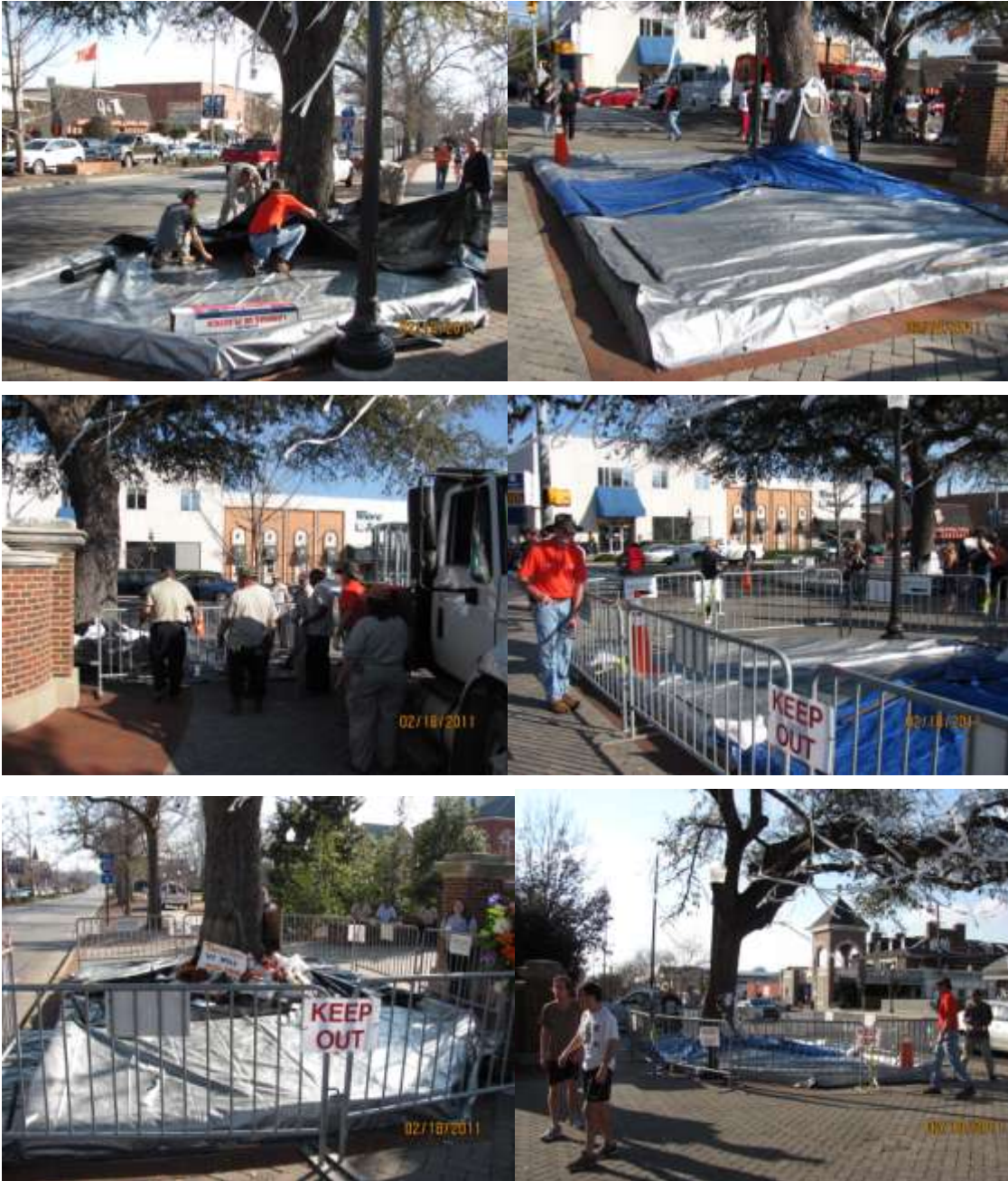
finish solution to properly coat both trees with the polymer product. Wind speed was less than 1 MPH.



Tree planter protection

Date 01-18-11

The task force determined that the open bed space around each tree should be protected from the elements and isolated from further direct contact by Auburn friends and alumni, especially with a planned tree event the following day focused on the trees, by placing tarpaulins on the open bed area and installing barricades to prevent people from walking directly on affected soil prior to the next phase of remediation: soil extraction.



Soil removal

Date: 02-21-11

The plan of action determined by the Task Force included removal of the tainted soil from the point of initial contamination on both oaks. The group agreed the best course to accomplish this goal would be (1) construct a containment area to prevent contaminated soil from spreading during the extraction process, (2) bring in a professional crew to extract the soil around tree bases with the least amount of trauma possible and (3) remove that soil to a remediation site for proper disposal following regulations that cover that process.

At 6:45 AM on 02-21-11, Landscape Services removed the barricades and uncovered the tree beds. All memorial items placed by concerned friends of Auburn around the trees were placed on a nearby location on the plaza. AU Carpenter Shop personnel arrived and began construction of the containment structures. Bartlett Tree Experts arrived from Tucker, GA and began preparations to use an air spade to remove the soil in each tree bed planter.

The Task Force met on site and reviewed data received from soil samples taken the previous week throughout the plaza. Data showed that residue in the plaza was incidental of the direct application to the tree beds. Once the containment structures were completed, Bartlett Tree Experts began the soil removal process and American Plant Services, Sylacauga, AL, provided a super vacuum truck and operators free of charge.

Soil samples were taken twice in each bed at progressively deeper levels for further analysis. Work was not completed and will continue on Tuesday









Soil removal

Date: 02-22-11

Soil extraction continued on Tuesday utilizing the air spade. Once all the soil that could be extracted with this process was removed, we changed to a wet extraction process to remove the fines from the tightly bound root system in each tree well (see photos). Water was sprayed at pressure to loosen soil bound to the root system and American Plants Services' vacuum system removed that stream of loosened soil and water before any penetration could occur. This was done twice and then flowable charcoal was applied via a hand held sprayer to capture any other organic material (herbicides) that may still be present. Soil samples were taken in the root mat areas, the perimeter area and under the root mat.







A test of water flow on the plaza area was performed using a standard laboratory dye (methylene blue). A known amount was applied under the pavers and after a specified time period, the area was excavated to determine movement based on staining in the gravel and soil.



