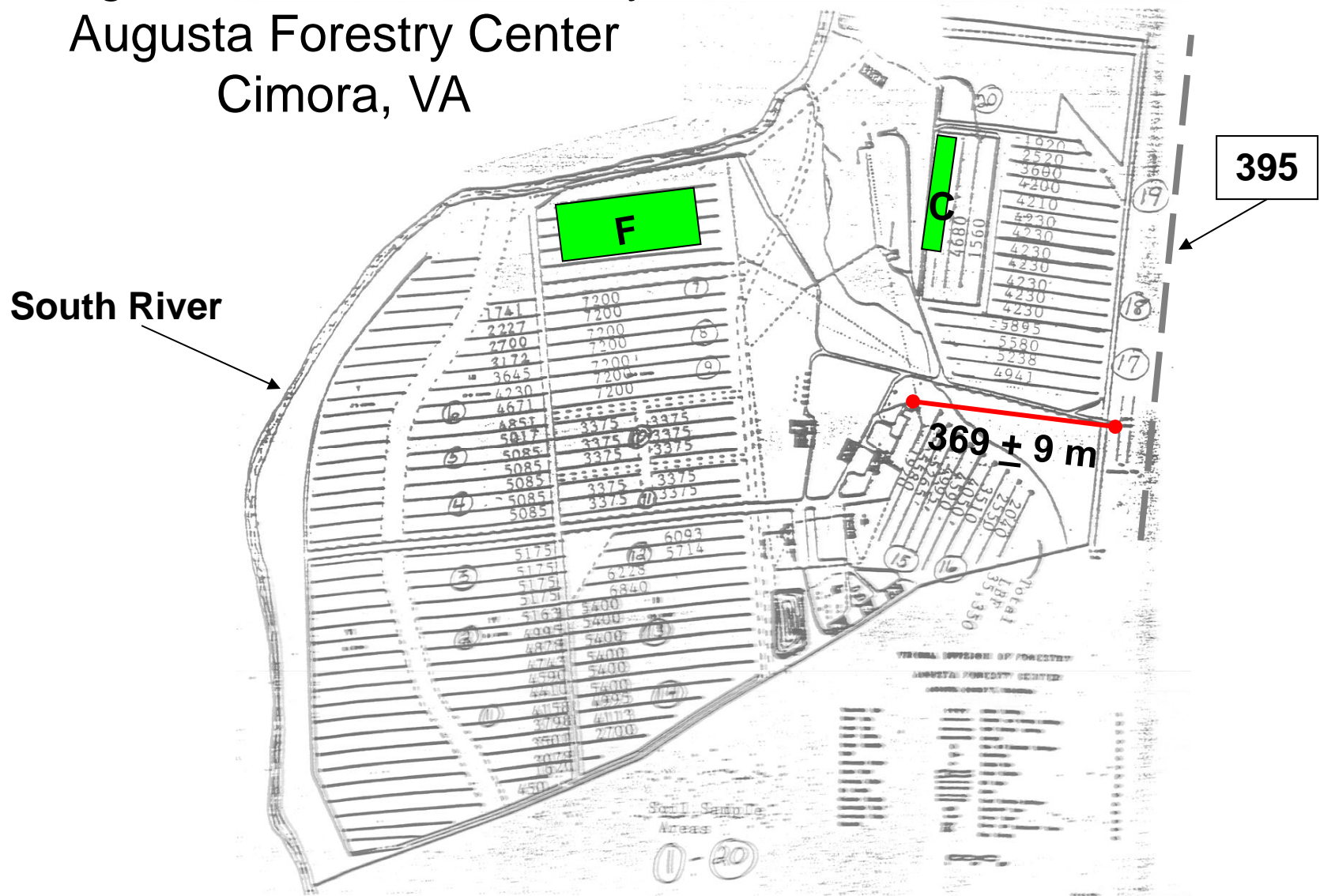# Augusta Forestry Center Soil Sampling Event
April 14-15, 2003

South River Science Team Meeting

April 29, 2003

Virginia Division of Forestry
Augusta Forestry Center
Cimora, VA

395

F

C

South River

369 ± 9 m

DUPONT *The miracles of science*™

Floodplain area in foreground
# Control area in background behind tree-line

Control Area

Soil Sampling Plan

Assumed that the fields are non-uniform

- Potentially large "macro-variations"

  - Macro-variations are soil variations between points separated by distance of greater than 2 m.

  - Associated with natural soil processes and where soil management practices can have a significant influence on variation

  - Where macro-variation is large, a non-random (grid) soil sampling procedure is recommended

Control Area

⬤ Composite samples

⊗ Point samples
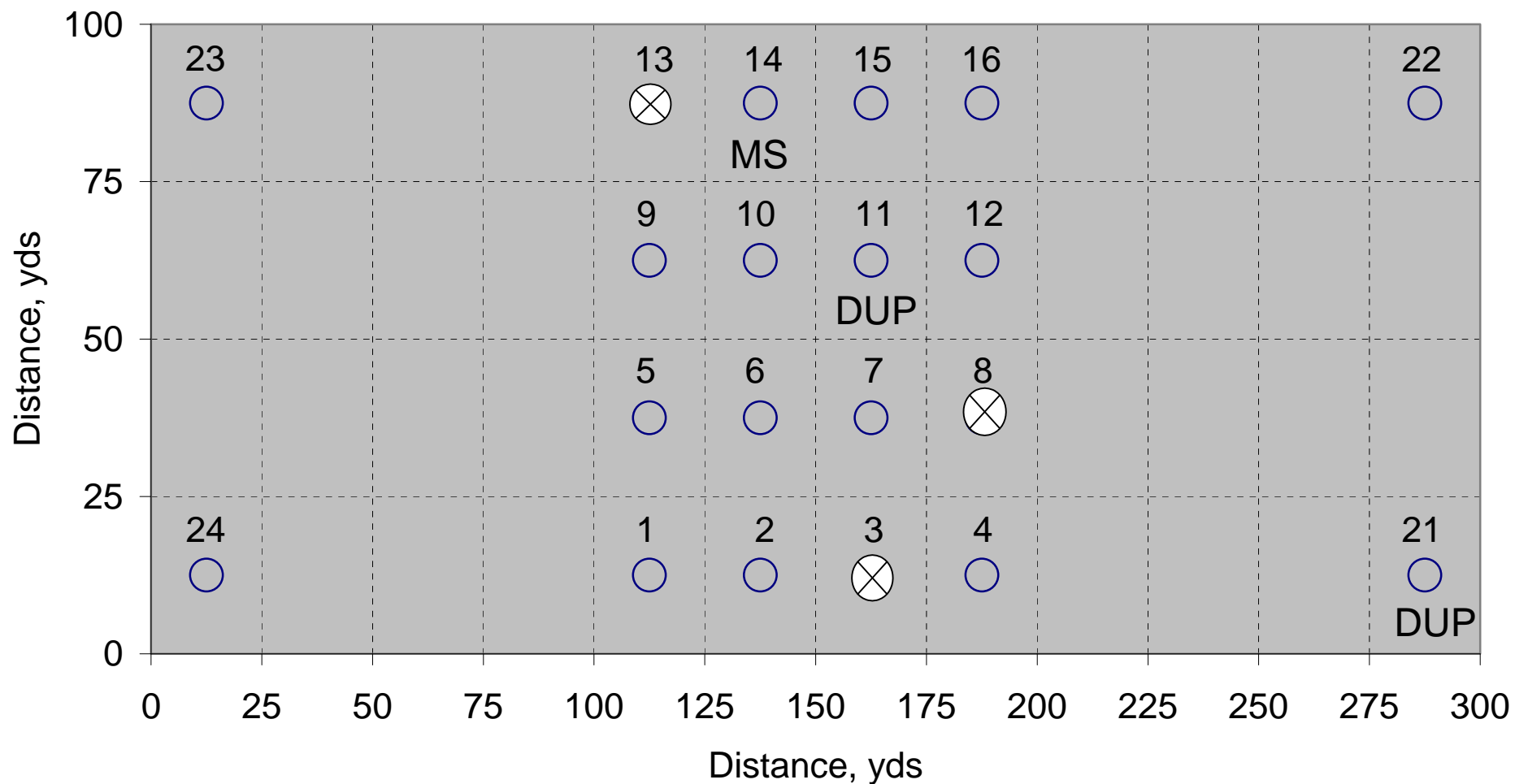
DUP = Duplicate sample   MS = Matrix spike and duplicate MS

Sample Collection

- Field grid developed by flagging at regular intervals in two directions and collecting soil samples at the grid line intersections.

- A soil sample was collected from each grid location.

  - Consisted of compositing eight cores from a circle of about 1-m diameter centered over the grid location.

  - This number of cores should be sufficient to overcome micro-variation (variation between points separated from 0 to 0.05 m).

  - To check this assumption, points were randomly selected and five cores at each point will be individually collected (not composited) and analyzed for total

Staking the grid locations

Sampling circle of about 1-m diameter centered over the grid location

Sampling the grid location

Coring device used to collect samples

Soil Sample Analysis - Total Hg

- EPA SW-846 Method 7471A -- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)

- GLP-compliant

- Duplicate and matrix spike performed for about every 20 samples submitted

Soil Sample Analysis – Plant Growth Characterization

- Air-dried at room temperature, well-mixed, and sieved through a 2-mm size screen

- Soil pH and limestone requirements

- Plant available nutrients

- Cation Exchange Capacity

- Organic matter content

- Particle Size Analysis