

CHARACTERIZING VEHICULAR CONTRIBUTIONS TO PM_{2.5} IN FAIRBANKS

Study design: Sierra Research

Location: FNSB Borough Bus Barn

Dates: 1st Phase, February 8-17, 2010

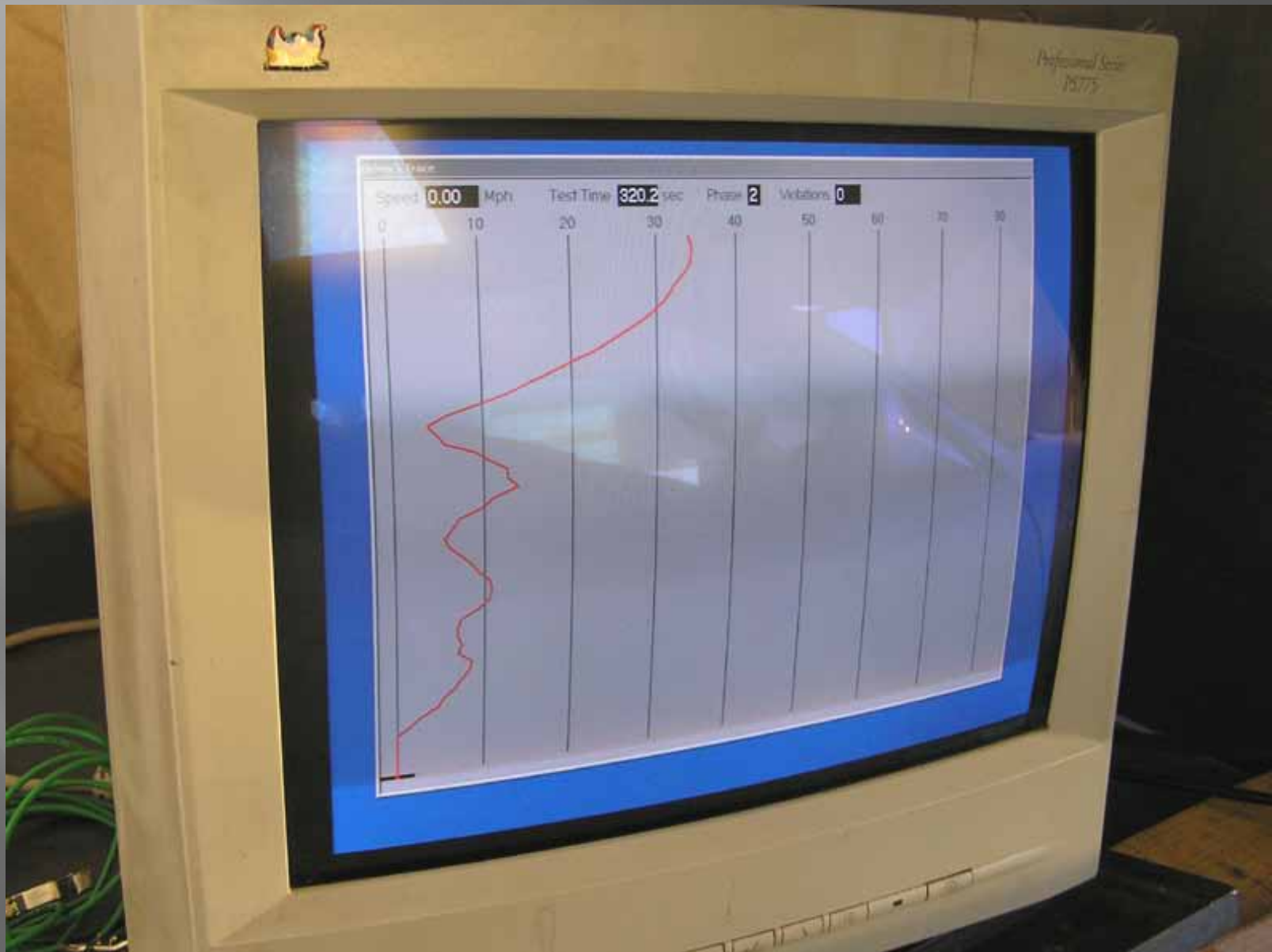
Front wheel drive vehicle at rest on dynamometer - tied down front & rear.



Front wheel drive vehicle in operation on dyno – hood up, fan on.



Driver's trace - keep black bar on red line, zero driver violations is great.



Vehicle chocked, tied down at rear, exhaust captured in dilution tunnel.



Tailpipe extension heated; black tube is clean air, mixes in silver dilution tunnel for sampling.





Electronics and mixing valves for 3 separate $PM_{2.5}$ sample filters, for Phases 1, 2, and 3 of each run, collected in insulated, heated silver box to left.

Computers to run dyno and analysis equipment;
sampled for PM_{2.5}, CO, HC, NO_x, and CO₂



Ultra-microgram balance inside humidity controlled box; filter weighed inside silver cylinder.



Example of 3 PM_{2.5} filter samples, different vehicles and phases, lighter is cleaner.

