METHODS

Weathered samples were prepared using the following methodology:

A graduated microvial was filled with 10 mL of ignitable liquid (parent). The vial was placed into a dry bath in which the height of the vial and temperature of the dry bath were adjusted according to the percent volume evaporated. Nitrogen flowed gently above the ignitable liquid and a vacuum pump was used to remove the ignitable liquid vapor from the vial into a trap. The nitrogen needle and vacuum tubing were cleaned between samples and replaced when needed. Evaporation percentages (v/v) were 25, 50, 75, 90 and 95%, corresponding to volume reductions of 2.5, 5.0, 7.5, 9.0, and 9.5 mL, respectively. One milliliter of carbon disulfide was added to an autosampler vial containing 20 µL of the weathered ignitable liquid. The weathered liquid was collected as the volume of the parent ignitable liquid was reduced by evaporation.

Biologically degraded samples were prepared using the following methodology:

Twenty microliters of ignitable liquid was deposited into a quart sized metal paint can with 100 grams of Hyponex® brand potting soil purchased from Kmart. The same bag of Hyponex® was used throughout the experiment (approximately 1.5 years) and stored in a closed plastic container. Once the quart can was sealed, the liquid and soil were mixed. After the specified time period (0, 7, 14, or 21 days), an activated carbon strip (standard full size 10 mm x 22 mm) attached to a paperclip and nylon string was suspended into the headspace of the can. The can was placed into an oven at 65° C for 16 hours. After heating, the can was removed from the oven and allowed to cool to room temperature. The activated carbon strip was cut in half, and one half was placed

into an autosampler vial with 500 µL of carbon disulfide. The other half was retained for use in other research investigations.