Geophysical Research Abstracts, Vol. 9, 11584, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-11584

A Field Deployment Study and Calibration of PolyUrethane Foam (PUF) Passive Air Samplers for Persistent Organic Pollutants (POPs)

C. Chaemfa (1), A. Sweetman (1), T. Gocht (2), T. Harner (3), I. Holoubek (4), J. Klanova (4) and K. Jones (1)

(1) Environmental Science Department, Lancaster University, United Kingdom, (2) Institute for Geosciences, University of Tuebingen, Germany, (3) Environmental Canada, RECETOX, Czech Republic

Polyurethane Foam (PUF) disks are one of the most common media for atmospheric passive sampling of POPs. This study aimed to calibrate PUF disks by deploying them alongside a Hi-Vol air sampler in order to obtain field uptake rates. Additionally, the effects of different sampling locations (sheltered, 0.5m above the ground, etc., duration of sampling deployment time (1,2,3,4,6, and 8 weeks), increasing sampling height (3, 5, 10, 20 and 30m) and different sampler design (namely the “Brno”, “Harner” and “Lancaster” designs) were investigated. The study was carried out for 8 weeks, from 27/04 to 20/06/2006 at the Hazelrigg field site. Samples were extracted, cleaned up and analysed using GC/MS for PCBs, organochlorine pesticides and PBDEs, and HPLC for PAHs. All analysis was performed at Lancaster to eliminate potential interlaboratory analytical variability. The result showed the equilibrium was reached within 3 weeks for light PCBs (tri-tetra-) and 6 weeks for heavy PCBs (> penta-) and organochlorine pesticides, respectively. There were no significant differences between the different designs for PCBs.