

## **Evaluation of results of chemical analyses of samples taken in Ekibastuz – electric substation and surrounding in August 2013**

There were taken 27 soil samples and two samples of destroyed equipment in the area of former electric substation in Ekibastuz, Pavlodar Oblast, Kazakhstan. In addition also sediments (5 samples), free range chicken eggs (two pooled samples) and fish (two pooled samples) were sampled in surrounded area. Soil, sediment and equipment samples were analyzed mainly for 7 profile congeners of PCBs in Prague's Institute of Chemical Technology. Some soils, sediments and all chicken eggs and fish samples were analyzed for dioxins (PCDD/Fs) and dioxin-like PCBs in BDS laboratory, Amsterdam by using method called DR CALUX.

Seven samples of soil and one sample of destroyed equipment had very high levels of total PCB congeners (multiplied by 5), in six cases also exceeding RSL for all uses (1 ppm). These levels of PCBs are alarming mainly because it was clear during our visit that the area is accessible for cattle and these contaminants can enter the foodchain.

Levels of PCDD/Fs and DL PCBs in two soil samples were also very high. It is obvious that the same samples had high levels of PCBs congeners. Concentrations of PCDD/Fs and DL PCBs in free range chicken eggs from Ekibastuz are above permissible level set in EU. Level of PCDD/Fs and DL PCBs was higher in eggs sampled closer to electric substation (approx. 0,5 km from the electric substation).

The contamination of the area of electric substation requires remediation and clean up of soils and all abandoned equipment from PCB and most likely also PCDD/Fs.