

## Appendix B: Monitoring methods

The monitoring regime for nitrogen compounds, metals and lindane are summarised in tables B.1 to B.5:

**Table B.1.** General information about sampling and analysis of nitrogen compounds in precipitation in 2007.

Country		Sampling period	Sampler		Analytical methods
			Wet only	Bulk	
Denmark	Nitrate ammonium	Biweekly	x		IC Spect. (CFA)
Estonia	Nitrate Ammonium	Weekly		X	IC Spect (indophenol)
Finland	Nitrate Ammonium	Weekly		X	IC IC
Germany	Nitrate Ammonium	Weekly	X		IC IC
Latvia	Nitrate Ammonium	Daily	X (LV10)	X (LV16 until 04.2007)	IC Spect (indophenol)
Lithuania	Nitrate Ammonium	Daily	X		IC Spect (indophenol)
Poland	Nitrate Ammonium	Daily		x	IC Spect (chloramin T)
Sweden	Nitrate Ammonium	Weekly	X		IC Spect (FIA)

\*IC: Ion chromatography

\*\*Spect Spectrofotometric detection

**Table B.2.** General information about sampling and analysis of nitrogen compounds in air in 2007.

Country		Sampl period	Sampler	Analytical methods
Denmark	NO <sub>2</sub>	Hourly	Chemiluminisence	
	Sum of nitric acid and nitrate	Daily	Millipore RAWP, 1.2 µm + KOH-impregnated Whatman 41, 58 m <sup>3</sup> /day	IC
	Sum of ammonia and ammonium	Daily	Millipore RAWP, 1.2 µm + Oxalic acid impregnated Whatman 41, 58 m <sup>3</sup> /day	Spect (CFA)
Estonia	NO <sub>2</sub>	Hourly	Chemiluscence	
Finland	NO <sub>2</sub>	Hourly	Chemiluscence	
	Sum of nitric acid and nitrate	Daily	Whatman 40 + NaOH impregnated Whatman 40 filter, 24 m <sup>3</sup> /day	IC
Germany	Sum of ammonia and ammonium	Daily	Oxalic acid impregnated Whatman 40 filter, 24 m <sup>3</sup> /day	IC
	NO <sub>2</sub>	Daily	NaI imp. Glass filters, 0.7m <sup>3</sup> /day	FIA
	Sum of nitric acid and nitrate	Daily	Teflon filter + KOH impr W40 filter, 22 m <sup>3</sup> /day	IC
Latvia	Sum of ammonia and ammonium	Daily	Teflon filter + Oxalic acid impr W40 filter	FIA
	NO <sub>2</sub>	Daily	KI method 0.2-0.4 m <sup>3</sup> /day	Spect. Griess
	Sum of nitric acid and nitrate	Daily	KOH-impregnated Whatman 41 filter, 14-20 m <sup>3</sup> /day	IC
Lithuania	Sum of ammonia and ammonium	Daily	Oxalic acid impregnated Whatman 41 filter, 14-20 m <sup>3</sup> /day	Spect (indophenol)
	NO <sub>2</sub> ,	Daily	KI method 0.4-0.7 m <sup>3</sup> /day	Spect. Griess
	Sum of nitric acid and nitrate	Daily	KOH impregnated Whatman 40 filter, 16-17 m <sup>3</sup> /day	IC
Poland	Sum of ammonia and ammonium	Daily	Oxalic acid impregnated Whatman 40 filter, 16-17 m <sup>3</sup> /day	Spect (indophenol)
	NO <sub>2</sub>	Daily	Abs.sol. TGS 0.73 <sup>3</sup> /day	Spect. Griess
	Sum of nitric acid and nitrate	Daily	NaF impregnated Whatman 40 filter, 3.5-4 m <sup>3</sup> /day	Spect. Griess
Sweden	Sum of ammonia and ammonium	Daily	Oxalic acid impregnated Whatman 40 filter, 3.5-4 m <sup>3</sup> /day	Spect. Chloramin T)
	NO <sub>2</sub>	Daily	NaI imp. glass sinters 0.7 m <sup>3</sup> /day	Spect, FIA
	Sum of nitric acid and nitrate		Aerosol filter as for sulphate + KOH-impregnated Whatman 40 filter, 20 m <sup>3</sup> /day	IC
	Sum of ammonia and ammonium		Aerosol filter as for sulphate + Oxalic acid impregnated Whatman 40 filter, 20 m <sup>3</sup> /day	FIA

GF-AAS: Graphite furnace atomic absorption spectroscopy  
 ICP-MS: Inductively coupled plasma - mass spectrometry  
 CV-AFS: Cold vapour atomic fluorescence spectroscopy

**Table B.3.** General information about sampling and analysis of heavy metals in 2007.

Country	Precipitation		Air and aerosols		Laboratory method
	Field method	Frequency	Field method	Frequency	
Germany	wet only	Weekly	Low volume sampler	Weekly	ICP-MS CV-AFS
	Hg wet only	Weekly	TGM:gold trap	Daily	
Denmark	Bulk	Monthly	Low volume sampler, Millipore RAWP 1.2 mm, 58 m <sup>3</sup> /day	Daily	Precip: GF-AAS , Aerosols: PIXE
Estonia	Bulk	Monthly	PM <sub>10</sub> , low volume sampler	Weekly	F-AAS
Finland	Bulk	Monthly	PM <sub>10</sub> . Teflon, Millipore, Fluoropore, 3 µm, 20 l/min	2+2+3	ICP-MS CV-AFS CV-AFS
	Hg Bulk (Hg)	Monthly	Hg: gold traps (TGM) Hg: mini traps (TPM)	2 X 24 h a week weekly	
Poland, PL05	Wet-only	Weekly	PM <sub>10</sub> High vol, quartz filter	weekly (bulked 24h)	Precip: GF-AAS, Air: ICP AAS-AMAanalyzer
	Hg Bulk (Hg)	Weekly	Hg: gold traps (TGM)	24h a week	
Sweden	Bulk	Monthly	Low volume sampler, teflon filter	monthly	ICP-MS CV-AFS CV-AFS
	Hg Bulk (Hg)	Monthly	Hg: gold traps (TGM) Hg: mini traps (TPM)	2 X 24 h a week 2 X 24 h a week	

GF-AAS: Graphic Furnace Atomic Absorption Spectroscopy

ICP-MS: Inductively Coupled Plasma - Mass Spectrometry

CV-AFS: Cold Vapour Atomic Fluorescence Spectroscopy

