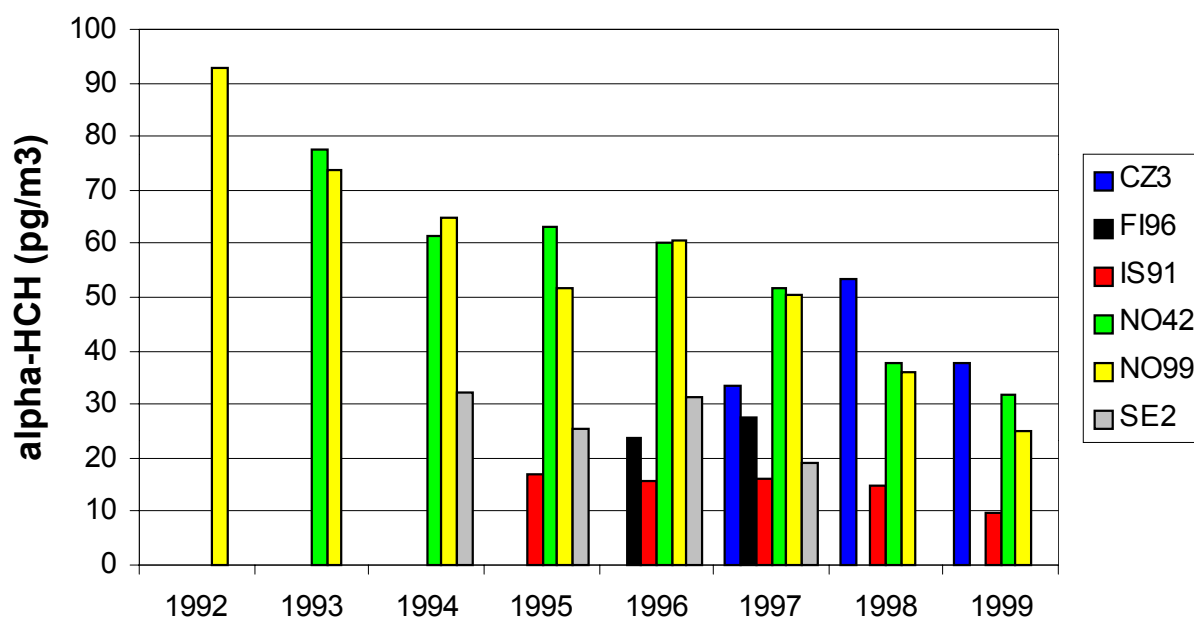


Heavy metals and POPs within the EMEP region 1999

Torunn Berg, Anne-Gunn Hjellbrekke and Rita Larsen



NILU : EMEP/CCC-Report 9/2001
REFERENCE : O-95038 / O-99050
DATE : AUGUST 2001

**EMEP Co-operative Programme for Monitoring and Evaluation
of the Long-range Transmission of Air Pollutants
in Europe**

**Heavy metals and POPs within
the EMEP region
1999**

Torunn Berg, Anne-Gunn Hjellbrekke and Rita Larsen



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Heavy metals and POPs within the EMEP region 1999

1. Introduction

Heavy metals and persistent organic pollutants (POPs) were included in EMEP's monitoring program in 1999. However, already in 1995, co-operation concerning heavy metals and POPs between EMEP and other international programs was extended. This co-operation included the establishment of a database and collection of already available data on heavy metals and POPs among the participants. A number of countries have been reporting heavy metals and POPs within the EMEP area in connection with different national and international programmes such as HELCOM, AMAP, OSPARCOM, MEDPOP.

During the seventh phase of EMEP (EB.AIR/GE.1/1998/8) it is recommended that the future works under the Convention should concentrate on eight priority elements: lead (Pb), mercury (Hg), cadmium (Cd), chromium (Cr), nickel (Ni), zinc (Zn), copper (Cu) and arsenic (As). Particular attention should be paid to the first three elements.

The strategic long-term plans on POPs (EB.AIR/GE.1/1997/8) recommend to take a stepwise approach, and the following compounds or groups of compounds should be included in the first step: polycyclic aromatic hydrocarbons (PAHs), polychlorobiphenyls (PCBs), HCB, chlordane, lindane, alpha-HCH, DDT/DDE.

So far, five reports have been published (EMEP/CCC-Reports 8/96, 9/97, 7/98, 7/99, 2/00) which present data on heavy metals and POPs from national and international measurement programmes for the period 1987 to 1998. The majority of the data are included in the priority lists for heavy metals and POPs. In this report data from 1999 are presented.

2. Measurement programme

2.1 Monitoring sites

The location of the measurement sites with data reported to the database is given in Table 1 and Figure 1. However, only a few of the sites have reported data both for heavy metals and POPs. An overview of the sites for which CCC have received data for 1999 are given in Table 2–Table 5. The stations are generally located distant from local emission sources in order to be representative for a larger region.

Table 1: List of monitoring stations included in the heavy metal and POP data base.

Country	Station codes		Station name	Location		Height above sea (m)
	Old code			Lat.	Long.	
Belgium	BE0004R	BE4	Knokke	51°21'N	3°20'E	0
	BE0090R	BE90	Bredenee	51°14'N	2°59'E	0
Czech Rep.	CZ0001R	CS1	Svratouch	49°44'N	16°02'E	737
	CZ0003R	CS3	Kosetice	49°35'N	15°05'E	534
Denmark	DK0003R	DK3	Tange	56°21'N	9°36'E	13
	DK0005R	DK5	Keldsnor	54°44'N	10°44'E	9
	DK0008R	DK8	Anholt	56°43'N	11°31'E	40
	DK0031R	DK31	Ulborg	56°17'N	8°26'E	10
Estonia	EE0009R	EE9	Lahemaa	59°03'N	25°54'E	32
	EE0011R	EE11	Vilsandi	58°23'N	21°49'E	6
Finland	FI0009R	FI9	Utö	59°47'N	21°23'E	7
	FI0017R	FI17	Virolahti II	60°31'N	27°41'E	4
	FI0053R	FI53, FI91	Hailuoto	65°00'N	24°41'E	4
	FI0090R	FI90	Haapasaari	60°17'N	27°12'E	15
	FI0092R	FI92	Hietajarvi	63°10'N	30°43'E	173
	FI0093R	FI93	Kotinen	61°14'N	25°04'E	158
	FI0094R	FI94	Pesosjarvi	66°18'N	29°30'E	257
	FI0095R	FI95	Vuoskojarvi	69°44'N	26°57'E	147
	FI0096R	FI96	Pallas	67°58'N	24°07'E	566
	France	FR0090R	FR90	Porspoder	48°31'N	4°45'W
Germany	DE0001R	DE1	Westerland	54°55'N	8°18'E	12
	DE0002R	DE2	Langenbrügge	52°48'N	10°45'E	74
	DE0003R	DE3	Schauinsland	47°55'N	7°54'E	1205
	DE0004R	DE4	Deuselbach	49°46'N	7°03'E	480
	DE0005R	DE5	Brotjacklriegel	48°49'N	13°13'E	1016
	DE0007R	DE7	Neuglobsow	53°09'N	13°02'E	62
	DE0008R	DE8	Schmücke	50°39'N	10°46'E	937
	DE0009R	DE9	Zingst	54°26'N	12°44'E	1
Iceland	IS0002R	IS2	Irafoss	64°05'N	21°01'W	61
	IS0090R	IS90	Reykjavik	64°08'N	21°54'W	61
	IS0091R	IS91	Stórhöfði	63°24'N	20°17'W	118
Ireland	IE0001R	IE1	Valentia Observatory	51°56'N	10°15'W	9
	IE0002R	IE2	Turlough Hill	53°02'N	6°24'W	420
	IE0031R	IE31	Mace Head	53°19'N	9°54'W	5
Italy	IT0004R	IT4	Ispra	45°48'N	8°38'E	209
Latvia	LV0010R	LV10	Rucava	56°13'N	21°13'E	18
	LV0016R	LV16	Zoseni	57°08'N	25°55'E	183
	LV0025R	LV25	Kemeri	56°55'N	23°28'E	
Lithuania	LT0015R	LT15	Preila	55°21'N	21°04'E	5
Netherlands	NL0002R	NL2	Witteveen	52°49'N	6°40'E	18
	NL0009R	NL9	Kollumerwaard	53°20'N	6°17'E	0
	NL0010R	NL10	Vreedepeel	51°32'N	5°51'E	-

Table 1, cont.:

Country	Station codes		Station name	Location		Height above sea (m)	
	Old code			Lat.	Long.		
Norway	NO0001R	NO1	Birkenes	58°23'N	8°15'E	190	
	NO0030R	NO30	Jergul	69°24'N	24°36'E	255	
	NO0039R	NO39	Kårvatn	62°47'N	8°53'E	210	
	NO0041R	NO41	Osen	61°15'N	11°47'E	440	
	NO0042G	NO42	Spitsbergen, Zeppelinfjell	78°54'N	11°53'E	474	
	NO0044R	NO44	Nordmoen	60°16'N	11°06'E	440	
	NO0047R	NO47	Svanvik	69°27'N	30°02'E	474	
	NO0056R		Hurdal	60°22'N	11°04'E	300	
	NO0092R	NO92	Øverbygd	69°03'N	19°22'E	90	
	NO0093R	NO93	Valdalen	62°05'N	12°10'E	800	
	NO0094R	NO94	Møsvatn	59°50'N	8°20'E	940	
	NO0095R	NO95	Ualand	58°31'N	6°23'E	220	
	NO0096R	NO96	Namsvatn	64°59'N	13°35'E	500	
	NO0097R	NO97	Solhomfjell	58°56'N	8°48'E	260	
	NO0098R	NO98	Karpdalen	69°39'N	30°26'E	70	
	NO0099R	NO99	Lista	58°06'N	6°34'E	13	
	Poland	PL0004R	PL4	Leba	54°45'N	17°32'E	157
		PL0005R	PL5	Diabla Gora	54°09'N	22°04'E	157
Portugal	PT0001R	PT1	Braganca	41°49'N	6°46'W	691	
	PT0003R	PT3	V. d. Castelo	40°25'N	7°33'W	16	
Slovakia	SK0002R	SK2	Chopok	48°56'N	19°35'E	2008	
	SK0004R	SK4	Stará Lesná	49°09'N	20°17'E	808	
	SK0005R	SK5	Liesek	49°22'N	19°41'E	892	
	SK0006R	SK6	Starina	49°03'N	22°16'E	345	
Sweden	SE0002R	SE2	Rörvik	57°25'N	11°56'E	10	
	SE0005R	SE5	Bredkälen	63°51'N	15°20'E	404	
	SE0012R	SE12	Aspvreten	58°48'N	17°23'E	20	
	SE0051R	SE51, SE99	Arup	55°45'N	13°40'E	157	
	SE0097R	SE97	Gårdsjön	58°03'N	12°01'E	113	
	SE0098R	SE98	Svartedalen	57°59'N	12°04'E	100	
Switzerland	CH0001R	CH1	Jungfrauoch	46°33'N	7°59'E	3573	
	CH0002R	CH2	Payerne	46°48'N	6°57'E	510	
	CH0003R	CH3	Tänikon	47°29'N	8°54'E	540	
	CH0004R	CH4	Chaumont	47°03'N	6°59'E	1130	
	CH0005R	CH5	Rigi	47°04'N	8°28'E	1030	
Turkey	TR0001R	TR1	Cubuk II	40°30'N	33°00'E	1169	
United Kingdom	GB0014R	GB14	High Muffles	54°20'N	0°48'W	260	
	GB0090R	GB90	East Ruston	52°48'N	1°28'E	5	
	GB0091R	GB91	Banchory	57°05'N	2°32'E	120	
	GB0092R	GB92	Isle of Wight	50°42'N	1°18'W	35	
	GB0093R	GB93	Staxton Wold	54°11'N	0°26'W	35	
	GB0094R	GB94	Lough Erne	54°24'N	8°03'W	35	
Yugoslavia	YU0005R	YU5	Kamenicki vis	43°24'N	21°57'E	813	
	YU0008R	YU8	Zabljak	43°09'N	19°08'E	1450	

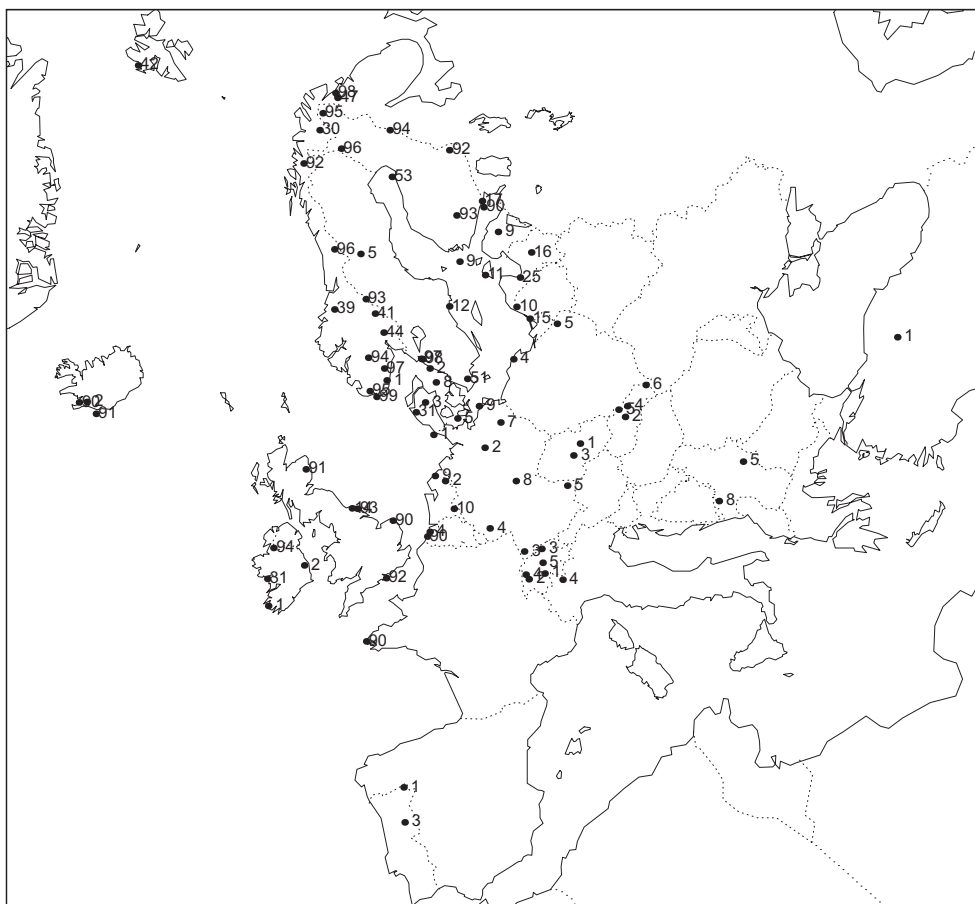


Figure 1: Location of monitoring stations which have reported data to the EMEP heavy metal and POP data base.

The site codes used in this report are the codes used for data submission and storage in the EMEP data base, or codes used in the OSPARCOM or HELCOM programmes. The codes consist of the two-letter ISO code for the countries, a four-digit number and a letter indicating the type of station, regional (R) or global (G).

2.2 Sampling and analytical techniques

A brief summary of the sampling and analytical techniques used for the 1999-data are given in Table 2–Table 5.

2.3 Quality of the monitoring data

In order to provide sufficiently accurate data for EMEP's needs, data with an expected lower accuracy have been flagged (QA) in the tables containing annual summaries and monthly means. The definitions of the quality flags are as follows:

1. High detection limit
2. Site location not regionally representative
3. Sampling problems
4. Analytical problems
5. Sample site located at high altitude

Table 2: General information about sampling and analysis of heavy metals in precipitation in 1999.

Country	Sites	Heavy metals	Sampling period	Sampler Wet only	Bulk	Analytical methods
Belgium	BE0004R	Cr, Ni, Cu, Zn, As, Hg, Cd, Pb	Monthly	x	x	
Czech Republic	CZ0001R	Mn, Ni, Cd, Pb	Weekly			
	CZ0003R		Daily/Week	X	X	
Denmark	DK0008R, DK0031R	Cr, Fe, Ni, Cu, Zn, As, Cd, Pb	Monthly		X	ICP-MS
Estonia	EE0009R, EE0011R	Cr, Ni, Cu, Zn, As, Cd, Pb	24h		X	
Finland	FI0009R, FI0017R, FI0053R, FI0092R,	V, Cr, Mn, Fe, Ni, Cu, Zn, As, Cd, Pb	Monthly		X	ICP-MS
	FI00093R-FI0095R	"	"		X	
	FI0096R	Hg	"		X	CV-AFS
France	FR0090R	Cr, Ni, Cu, Zn, As, Cd, Pb	Monthly		X	
Germany	DE0001R, DE0009R	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Hg, Pb	Monthly	X		GF-AAS
	DE0002R, DE0004R	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Pb	Weekly		X	ICP-MS
Iceland	IS0002R,	Al, V, Cr, Mn, Fe, Ni, Cu, Zn, As, Cd, Pb	Monthly	X		ICP-MS
	IS0090R	"			X	
Ireland	IE0001R, IE0002R	Al, V, Cr, Mn, Ni, Cu, Zn, As, Cd, Pb, Hg	Monthly		X	AAS
Lithuania	LT0015R	Cu, Zn, Cd, Pb	Monthly		X	AAS
Latvia	LV0010R, LV0016R	Cu, Zn, Cd, Pb	Monthly		X	GF-AAS
Netherlands	NL0009R,	Cr, Ni, Cu, Zn, As, Cd, Pb	4 weeks	X		
	NL0091R	Cr, Ni, Cu, Zn, As, Cd, Pb, Hg	4 weeks	X		
Norway	NO0001R, NO0039, NO0041R, NO0055-56	Zn, Cd, Pb	Weekly		X	ICP-MS
	NO0047R,	Cr, Co, Ni, Cu, Zn, As, Cd, Pb	Weekly		X	"
	NO0092R-NO0095R,	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Pb	Weekly		X	"
	NO0099R	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Pb Hg	Weekly		X	ICP-MS/CV-AFS
Poland	PL0004R	Cu, Zn, Cd, Pb	Monthly			
Portugal	PT0001R, PT0003R, PT0004R, PT0010R	Mn, Ni, Cu, Zn, Cd, Pb	24h		X	GF-AAS
Slovakia	SK0002R, SK0004R, SK0005R, SK0006R	Al, Mn, Fe, Zn	Monthly			
Sweden	SE0002R, SE0005R, SE0011R, SE0012R	Hg	Monthly		X	CV-AFS
	SE0005R, SE0012R, SE0051R, SE0097R	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Pb	"		X	ICP-MS
United Kingdom	GB0014R, GB0090R, GB0091R	Cr, Ni, Cu, Zn, As, Cd, Pb	Monthly		X	

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

Table 3: General information about sampling and analysis of heavy metals in air in 1999.

Country	Sites	Heavy metals	Sampling period	Sampler	Analytical methods
Belgium	BE0004R	Ni, Cu, Cd, Pb		Filter-1 pack	
Czech Republic	CZ0001R, CZ0003R	Cd, Pb	24h	Filter-1 pack	
Denmark	DK0003R, DK0005R, DK0008R, DK0031R, DK0010G	Cr, Fe, Ni, Cu, Zn, As, Cd, Pb Al, Cr, Mn, Ni, Cu, Zn, As, Se, Pb	24h Weekly	Filter-3 pack "	Pixe "
Finland	FI0096R	Hg	24h	Gold traps	CV-AFS
Germany	DE0001R-DE0005R, DE0007R-DE0009R	As, Mn, Fe, Ni, Cu, Cd, Pb	24h	High vol.	ICP-MS
Iceland	IS0091R	Al, V, Cr, Mn, Fe, Ni, Cu, Zn, As, Cd, Pb, Hg (part.)	15d	High. Vol.	GF-AAS/CV-AAS
Ireland	IE0031R	Hg	5 - 30min	Hg-monitor	Hg-monitor (Tekran)
Latvia	LV0010R, LV0016R	Cu, Zn, Cd, Pb	Weekly	Filter-1 pack	AAS/GF-AAS
Lithuania	LT0015R	V, Mn, Cu, Zn, Cd, Pb	24h ²⁾	Low vol.	AAS
Netherlands	NL0009R	Zn, As, Cd, Pb	24h	Filter-1 pack	
Norway	NO0042G, NO0099R NO0042G, NO0099R	Mn, V, Cr, Co, Ni, Cu, Zn, As, Cd, Pb, Hg	48h ²⁾ 12-24h	NO42: High vol, NO99: Filter-2 pack Gold traps	ICP-MS CV-AFS
Slovakia	SK0002R, SK0004R, SK0005R, SK0006R	V, Cr, Mn, Ni, Cu, Zn, Cd, Pb			
Sweden	SE0002R	Hg	12 h	Gold traps	CV-AFS
United Kingdom	GB0014R, GB0090R, GB0091R	Cr, Ni, Cu, Zn, As, Cd, Pb	Monthly	Filter-1 pack	ICP-MS

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

Table 4: General information about sampling and analysis of POPs in precipitation in 1999.

Country	Sites	POPs	Sampling period	Sampler	Analytical methods
Belgium	BE0004R	Pesticides, HCHs	Monthly	Wet-only	
Iceland	IS0091R	PCBs, pesticides, HCHs, HCB	15d	Bulk_sampler	
Ireland	IE0002R	Pesticides, HCHs, PCBs	Monthly	Bulk_sampler	
Netherlands	NL0091R	gamma-HCH	Monthly	Bulk_sampler	
Norway	NO0099R	α -HCH, γ -HCH, HCB	Monthly	Bulk_sampler	GC-MS

GC-MS: Gas chromatography with mass spectrometry

Table 5: General information about sampling and analysis of POPs in air in 1999.

Country	Sites	POPs	Sampling period	Sampler	Analytical methods
Czech. Rep	CZ0003R	PAH, PCBs, pesticides, HCHs, HCB	1-5d	High vol.	
Iceland	IS0091R	PCBs, pesticides	15d	High vol.	
Norway	NO0042G NO0099R	PAH, pesticides, HCHs, HCB, PCBs α -HCH, γ -HCH, HCB	48h 48h	High vol. "	GC-MS GC-MS

GC-MS: Gas chromatography with mass spectrometry

6. Concentration level low when compared to nearby stations
7. Extremely long sampling time
8. Sum of wet deposition + dry deposited particles onto the funnel. Unit: ng/m² day
9. Estimated values
10. Extremely high single sample concentrations

The data have been checked for outliers. Extremely high values, outside four times standard deviation in a lognormal distribution, have been flagged in the EMEP database and are excluded from this report.

The data forwarded to the CCC have come in a large variety of formats, and large resources at the CCC are still used to transform these data into a format suitable for the new data base (NASA/AMES 1001 transfer files). The CCC has made available a computer programme which transforms data from simple matrix formats, e.g. spread sheet formats, into NASA/AMES format. It is very important that each EMEP participating country gains experience with, and makes use of, the new format in order to release CCC resources for other important tasks.

2.3.1 Heavy metals

A few data with extremely high detection limits are not included in the report (Cd in precipitation from Portugal, Hg in precipitation from Ireland, As in precipitation (wet-only) from Belgium).

Information on the quality of the measurements is also available from the "EMEP Analytical intercomparison of heavy metals in precipitation – 1999" (Berg and Aas, 2000). A total of 17 laboratories participated. Two samples contained trace element concentrations (Pb, Cd, Cu, Ni, As, Co, Zn) typical of precipitation in Southern Scandinavia, and two samples contained higher concentrations typical of Central Europe.

The results in Table 6 show that half of the laboratories were outside 25% from the theoretical value for Cd in the low concentration samples. For the high concentration samples the corresponding result is about one third of the laboratories. For lead the results are better; about one third of the low concentration samples are outside 25% from the theoretical value, while only 2 of 17 laboratories had high-concentration results outside 25%. It should be emphasised that most laboratories involved measure mainly concentrations similar to the high concentration samples in their monitoring networks, and therefore have less experience than others with low concentration samples.

The last field intercomparison on heavy metals in precipitation was carried out in the framework of HELCOM-EMEP-PARCOM-AMAP activity during 1996. The exercise was divided in an analytical and a field intercomparison part and included seven heavy metals: Pb, Cd, Cu, Zn, As, Cr, and Ni. The field intercomparison part of the exercise was carried out at the German EMEP station Deuselbach (DE04). The results were extensively discussed at a workshop in Germany, September 1996, and the major conclusion from this meeting was that the agreement between the collectors regarding precipitation amount seems to be satisfactory, and that the outcome of this intercomparison is much more positive

than in the case of previous exercises. Furthermore, the results for Pb, Cd and eventually Zn seemed to be acceptable, but problems still remain to be solved for the other heavy metals considered (WMO, 1997).

Table 6: Percentage deviation from theoretical concentration values (extract from Berg and Aas, 2000).

Element	No. of laboratories	Lab. Identification
Cd (low)		
0-10%	2	5, 7
10-25%	6	4, 9, 11, 12, 13, 14
>25%	8	1, 2, 6, 8, 10, 15, 16, 17
Cd (high)		
0-10%	11	1, 2, 4, 5, 7, 9, 11, 12, 13, 14, 15
10-25%	1	17
>25%	5	6, 8, 10, 16, 17
Pb (low)		
0-10%	8	1, 5, 8, 9, 11, 13, 14, 15
10-25%	3	7, 10, 16
>25%	5	2, 4, 6, 12, 17
Pb (high)		
0-10%	10	1, 3, 4, 5, 7, 9, 11, 13, 14, 15
10-25%	5	6, 8, 12, 16, 17
>25%	2	2, 10

The geographical gradients for Pb, Cd and Hg in precipitation and air for 1999 seem to be reasonable. Pb in aerosols and precipitation (wet-only sampler) have concentration maxima for BE4 (Knokke). There are, however, also a data set from a bulk sampler for the same station which shows considerably lower concentrations for Pb (a factor of ten). For zinc the concentrations are highest for the bulk sampler. This may be due to inrepresentative site location for the samplers, sampling or analytical problems. The Belgian laboratory did not participate in the 1999-intercomparison. Estonian sites have lower concentration values for Pb in precipitation than the adjacent sites in Southern Finland, which seems strange. A similar pattern was also observed in 1997 and 1998. For Pb, the Estonian laboratory (2) reported results in the intercomparison between 30 and 60% from the theoretical value. Portuguese Pb concentrations are low – so they should be. The concentrations of Hg in air at NO42 are probably 20% higher than they are supposed to be, which is due to sampling problems.

2.3.2 POPs

It is generally difficult to give full credit to the information content in the POP data. Different sampling and analysis techniques make it difficult to compare data. For example, the Icelandic station has generally lower concentrations than the high Arctic NO0042G, which is reasonable, considering the geographical location in relation to known source areas, but the differences are also due to different data handling and analysis techniques. Iceland subtracts blanks, whereas Norway does

not. A few data with extremely high detection limits are not included in the report (Precipitation data from Ireland and Belgium).

We will have more knowledge on the quality of the data when the analytical intercomparison on POPs, carried out in the framework of EMEP, is finished early 2002. Preliminary results from Round 1 (analysis of standards) were promising, showing that most laboratories are able to analyse standards within $\pm 30\%$. Figure 2 and Figure 3 show the results for benzo(a)pyrene and PCB28. In the next step of the intercomparison, real samples will be analysed.

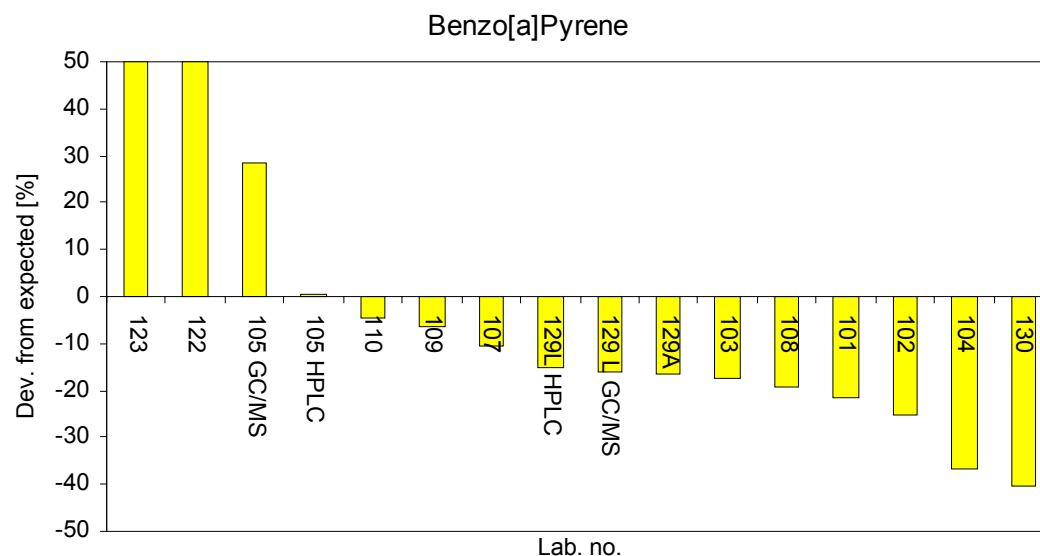


Figure 2: EMEP, analytical intercomparison on POPs measurements: Preliminary results for benzo(a)pyrene.

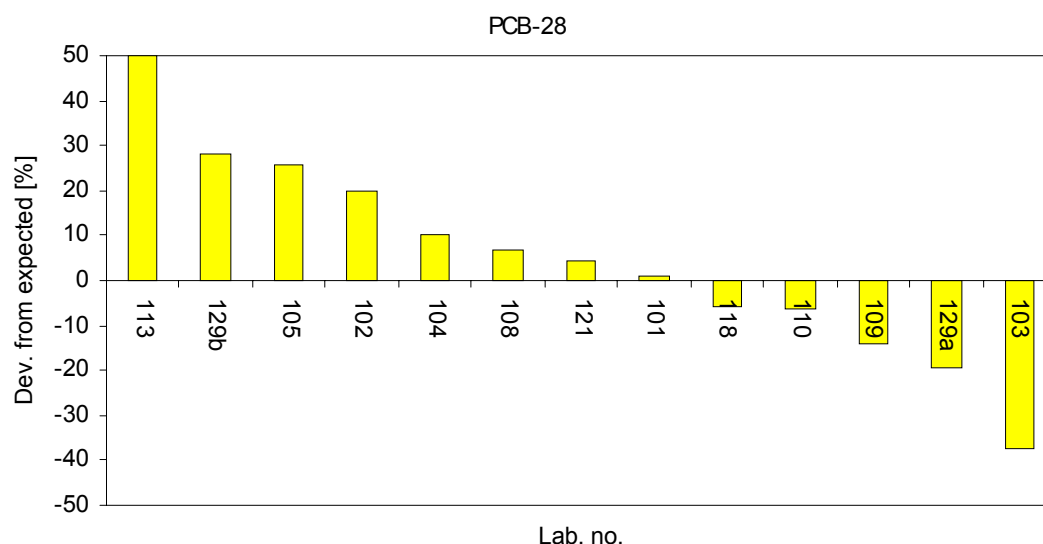


Figure 3: EMEP, analytical intercomparison on POP measurements: Preliminary results for PCB-28.

3. Presentation of the measurement data

3.1 Maps of heavy metal concentrations over Europe

Annual averages of Pb and Cd from the 1999 precipitation and air data are presented in maps (Figure 4–Figure 7). The yearly precipitation mean concentrations have been calculated from daily, weekly or monthly reported values as precipitation-weighted averages. Average air concentrations are arithmetic averages of the reported values.

It should be noticed that only a few countries in Southern and Eastern Europe have reported data for heavy metals in precipitation. With the exception of the Baltic States, Czech Republic and Slovakia, there are no aerosol data reported from Southern and Eastern Europe. Also from Scandinavia and the westernmost part of Europe there are few data on air concentrations.

3.1.1 Lead in precipitation

The stations have been located away from local sources and are as far as possible representative for a larger region. The lowest concentrations of Pb during 1999 are found in northern Scandinavia, Iceland, Ireland and Portugal, where the annual averages are below 1 µg Pb/l (Figure 4). Increasing gradients can be seen eastward with peaks around 5-6 µg Pb/l at Czech stations. The main road from Praha to Brno is not far from CZ3 (Košetice). Usage of Pb in petrol (or as petrol additive) has decreased much more in the Western European countries relatively to the Eastern European countries over the last years (Pacyna, MSC/West, pers. comm.).

3.1.2 Cadmium in precipitation

In Scandinavia the annual mean values of Cd are below 0.05 µg Cd/l (Figure 5). An increasing gradient can be seen south. The highest concentrations of Cd are reported from the Belgian and the Czech stations. The high concentrations of cadmium in Belgium are probably due to emissions from Hoboken smelter which produce metals. The emissions of Cd have also decreased in Europe in recent years, but not so much as for Pb.

3.1.3 Lead in aerosols

Figure 6 presents the annual averages of Pb in air in 1999. The lowest concentrations (below 1 ng Pb/m³) can be seen at Svalbard (NO42), Iceland and Greenland. Concentration maximum is seen at the Belgium station. Relatively high concentrations of Pb in aerosols can also be seen at the Slovakian sites, which may be due to industry in the region Ruzomberok – Liptovský Mikuláš (Rühling et al., 1998).

3.1.4 Cadmium in aerosols

Cadmium in aerosols is presented in Figure 7. The lowest concentrations (below 0.10 ng Cd/m³) are reported from Svalbard and Norway. An increasing gradient can be seen southeastward, with the highest concentration maxima at the Belgian and also the Slovak stations. The relatively high concentrations of Cd reported from the Slovakian stations may mainly be due to emissions from copper smelters in the Legnica - Głogów basin in Southern Poland (Rühling et al., 1998).

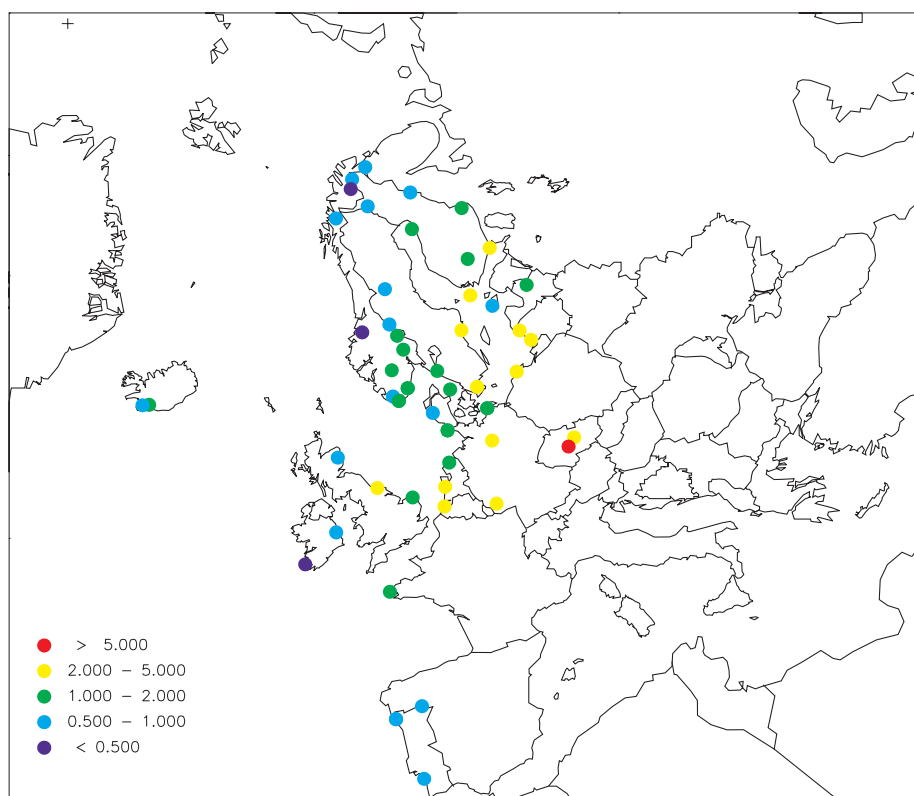


Figure 4: Lead in precipitation, 1999 ($\mu\text{g/l}$).

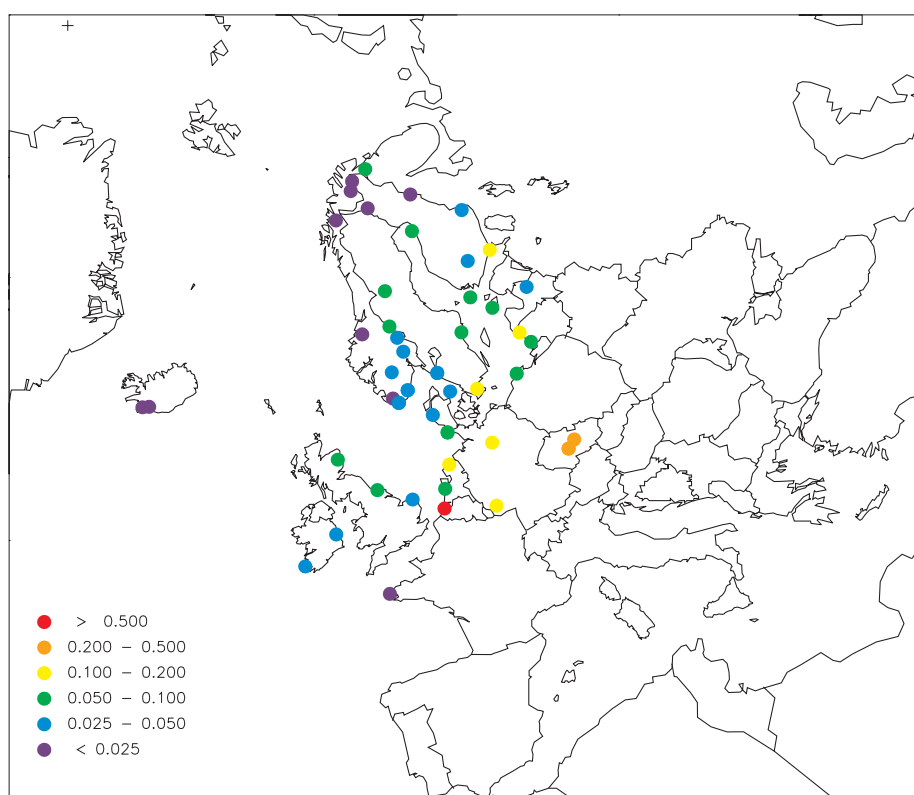


Figure 5: Cadmium in precipitation, 1999 ($\mu\text{g/l}$).

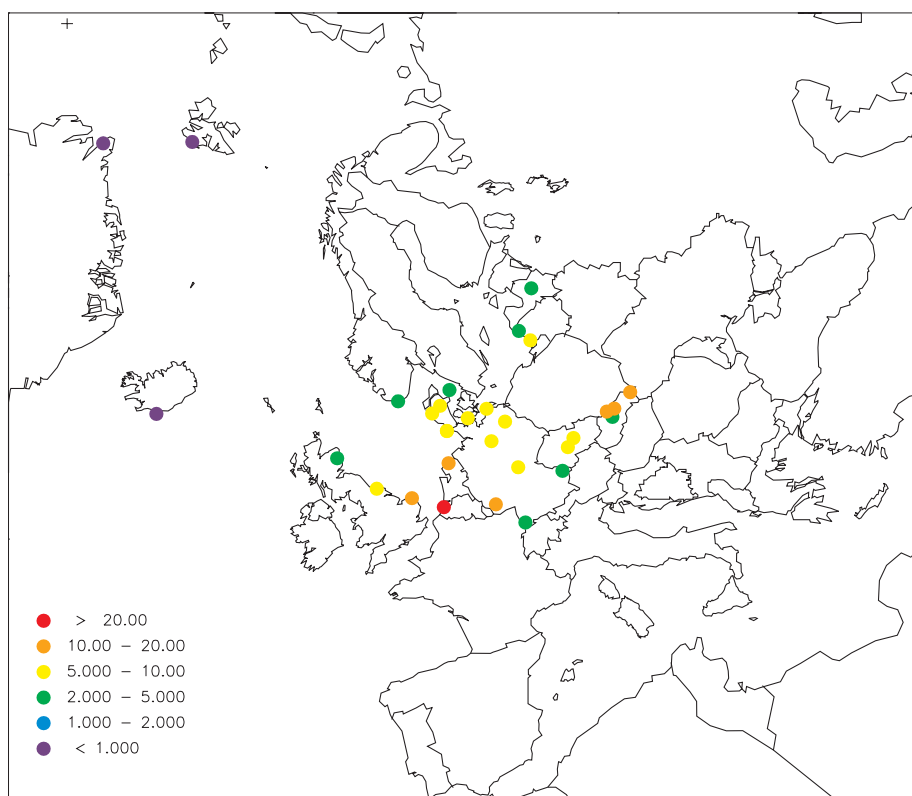


Figure 6: Lead in aerosols, 1999 (ng/m³).

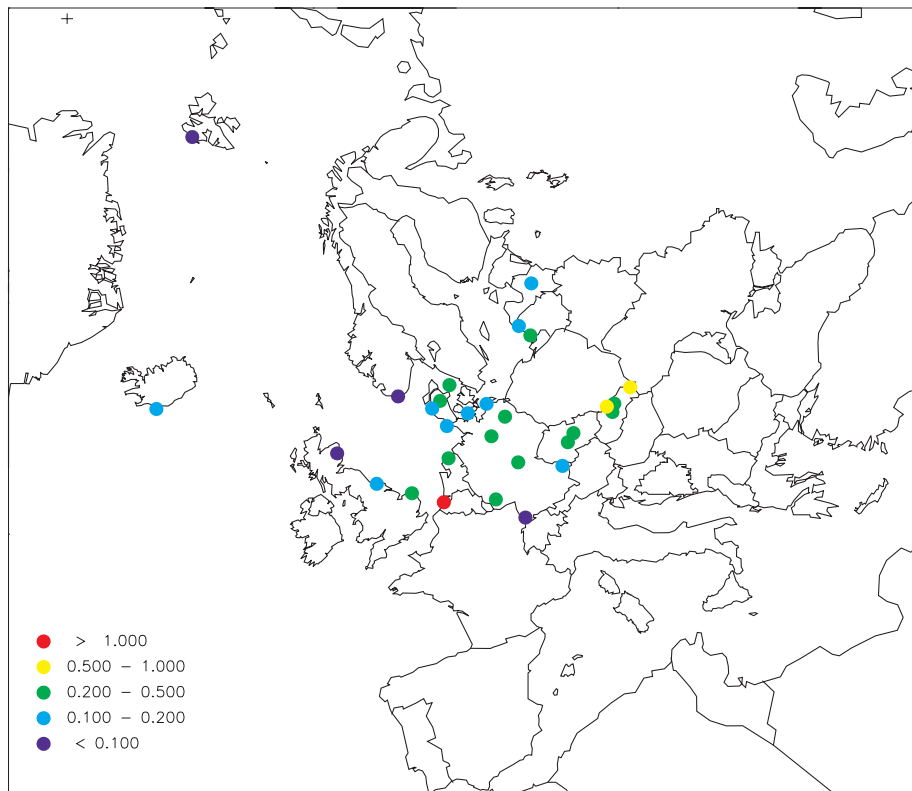


Figure 7: Cadmium in aerosols, 1999 (ng/m³).

3.2 Temporal trends for lead in aerosols

Figure 8 shows temporal trends for lead in aerosols at 9 stations for which there have been reported data from for at least six years. Several countries in Europe have reduced their emissions of Pb which can be seen in the decreasing level in the Pb concentrations at DE4, DK3 and NL9. For CZ3, GB91, LT15, LV10, NO42 and SK4 no clear trends can be noticed for the relatively short period of monitoring. A marked seasonal variation in the level of Pb can be seen at NO42 with highest concentrations during the high Arctic winter. This is due to the positions of major weather systems: In winter and spring, a high pressure system over Siberia pushes the Arctic front far to the south, so that important polluted areas are within the Arctic air mass.

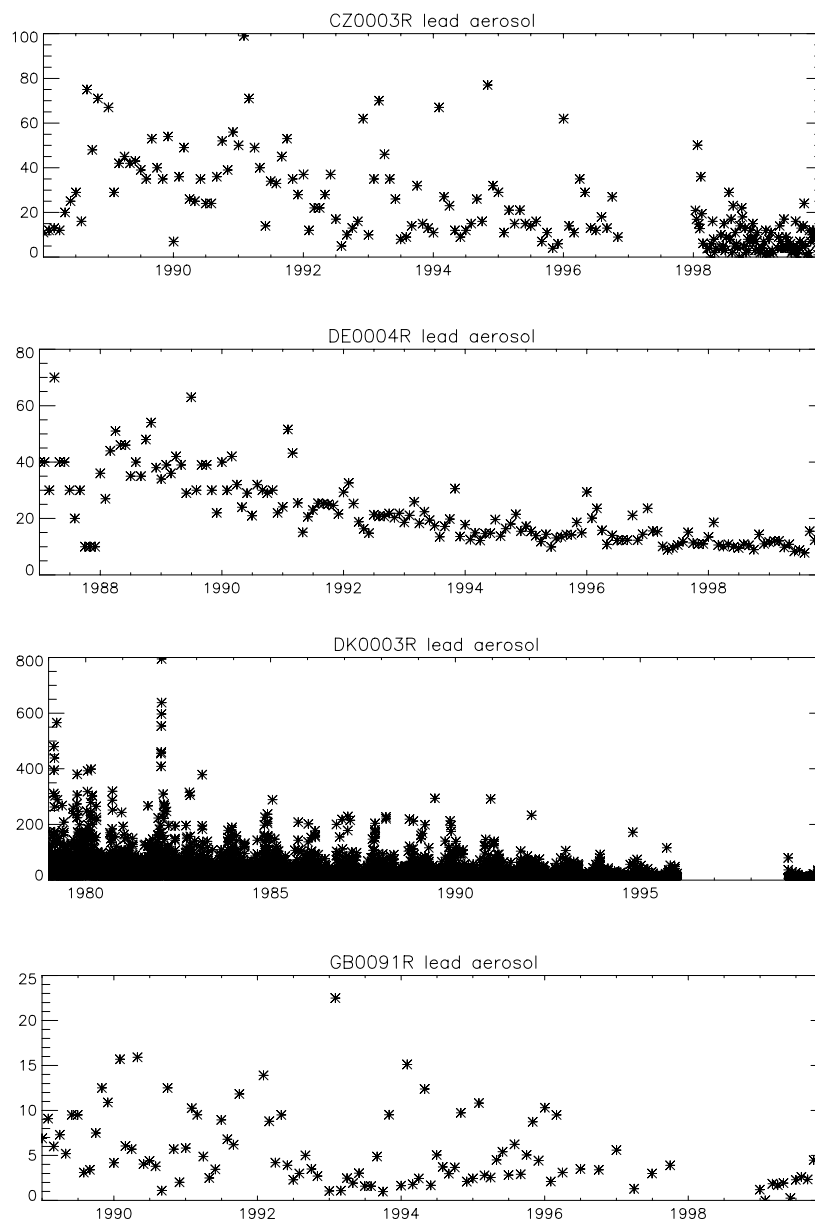


Figure 8: Temporal trends of Pb in aerosols at different EMEP sites.

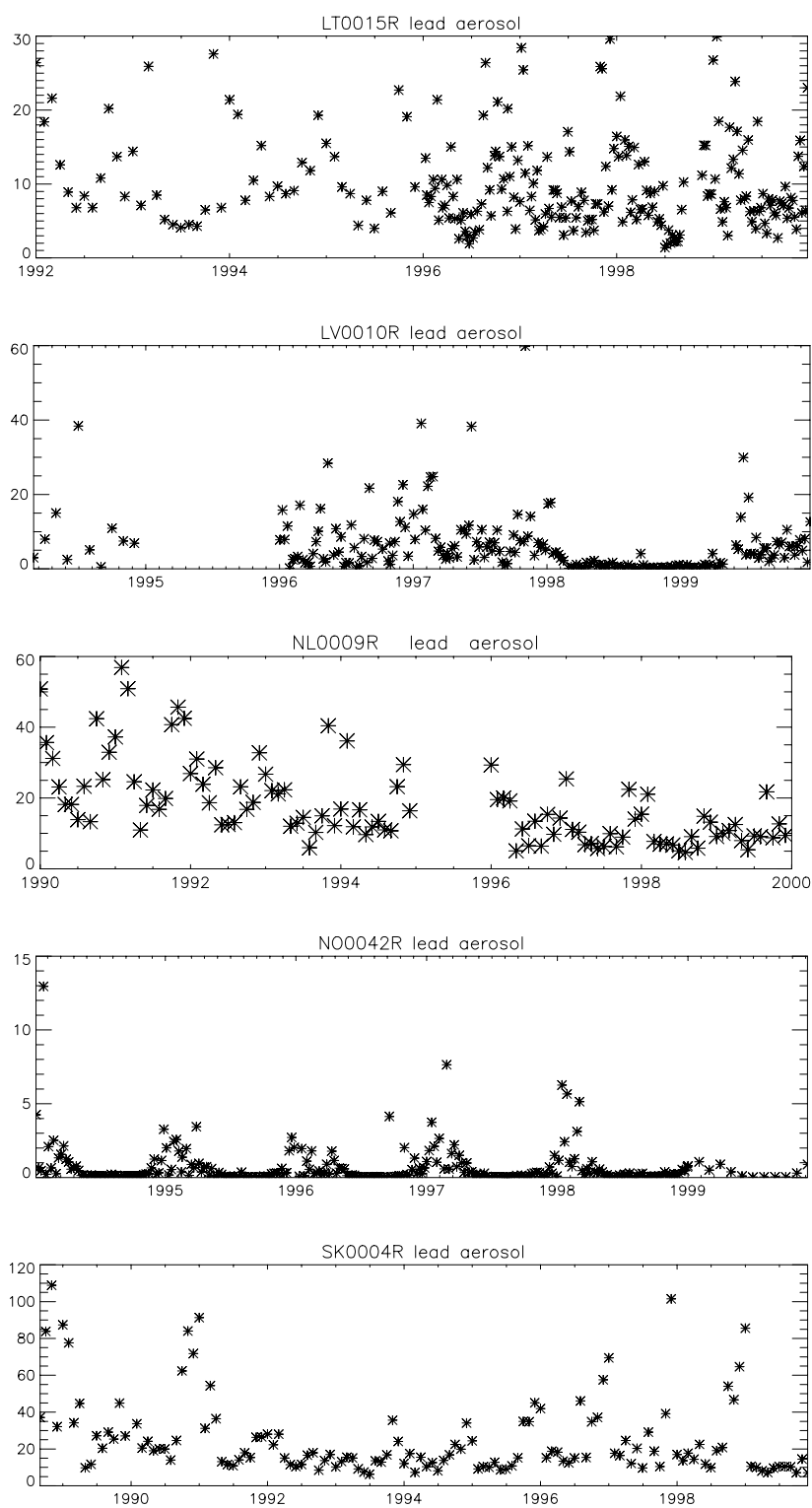


Figure 8, cont.

3.3 Concentrations of HCHs

Figure 9 and Figure 10 show temporal trends for α -HCH and γ -HCH in air at 6 stations. The concentration level of α -HCH at the Norwegian stations is relatively high compared to the other stations, but decreasing. This is probably due to higher input of technical HCH at high latitudes. Almost 80% of the remaining use of α -HCH in Europe in 1996 were assigned to the new states of the former Soviet Union (422 t of technical HCH) (Breivik et al., 1999). The other 20% were attributed to usage in some former eastern European countries (Breivik et al., 1999). Iceland is influenced by westerly airmasses which explain the lower concentrations seen at IS0091R.

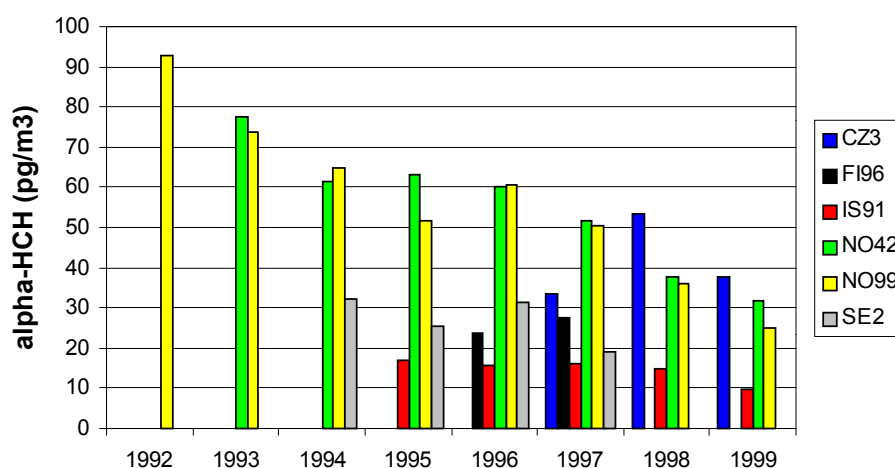


Figure 9: Annual weighted means for alpha-HCH during 1992-1999.

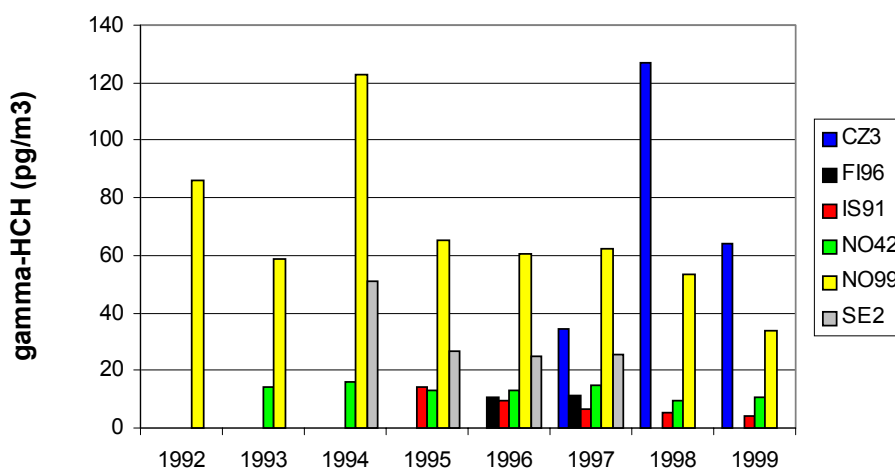


Figure 10: Annual weighted means for gamma-HCH during 1992-1999.

Lista (NO0099R) at the southern coast of Norway, shows high concentrations of γ -HCH in air, which may be due to long range transport from southern parts of Europe. According to Centre International d'Etudes du Lindane (CIEL, 1998), the average annual lindane consumption in Europe was 2130 t during the period from

1992 to 1997. France was the major user of lindane in Europe during this period, with an annual average consumption of 1600 t (CIEL, 1998).

3.4 Concentrations of benzo(a)pyrene

Benzo(a)pyrene (also other PAHs) is rapidly destroyed by UV. In the absence of local sources, therefore, a pronounced seasonal trend is to be expected, which is seen especially for CZ03 (Figure 11).

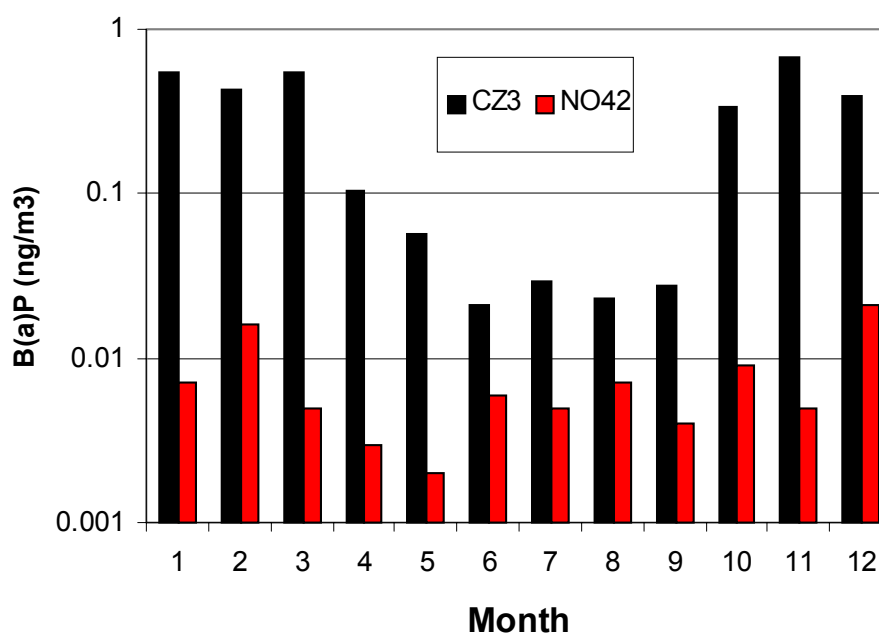


Figure 11: Concentrations of benzo(a)pyrene in air+aerosol at two EMEP-stations, 1999.

3.5 Annual summaries

Annual summaries of heavy metals in precipitation and air are given in Annex 1 and Annex 2, respectively. Annual summaries for POP data are seen in Annex 3 and Annex 4. The precipitation component summaries contain:

- the precipitation weighted arithmetic mean value,
- the minimum and maximum daily concentrations,
- the number of data below the detection limit,
- the number of samples for a specified component
- a flag which gives information about the quality of the data,
- and a sampling flag which gives information about the sampling procedures.

The wet depositions have been obtained by multiplying the weighted mean concentration by the total amount of precipitation in the period. The concentrations for days with missing precipitation data have consequently been assumed to be equal to the weighted average of the period.

For air components the arithmetic mean and the geometric mean have been computed together with their standard deviations. The definitions are given on the next three pages. The geometric standard deviation is a dimensionless factor. As a measure of the completeness of the dataset, the number of samples analysed in the period has been printed.

In the computations of mean values and other statistics, the concentrations below the detection limit have been set equal to one half of the actual limit. An overview of the statistics and definitions is given below.

W.mean $\hat{c}$ is the precipitation weighted arithmetic mean concentration used for precipitation components:

$$\hat{c} = \frac{I}{\sum_i p_i} \cdot \sum_i c_i \cdot p_i$$

where p_i is precipitation amount day i with the measured concentration c_i of a specific component.

Arit mean $\overline{c}_a$ is the arithmetic mean value used for air components only, and N is number of days with data:

$$\overline{c}_a = \frac{I}{N} \sum_i c_i$$

Arit sd sd_a is the arithmetic standard deviation from the arithmetic mean value. It is computed for air components only:

$$sd_a = \left(\frac{\sum_i (c_i - \overline{c}_a)^2}{N - I} \right)^{\frac{1}{2}}$$

Geom mean $\overline{c}_g$ is the geometric mean value used for air components only, and it is computed from the arithmetic mean of $\ln c$:

$$\overline{\ln c} = \frac{1}{N} \cdot \sum_i \ln c_i$$

$$\overline{c}_g = \exp(\overline{\ln c})$$

Geom sd sd_g is the geometric standard deviation from the geometric mean value. It is computed for air components only, and it is based on the standard deviation of $\ln c$:

$$sdlnc = \left(\frac{\sum_i (lnc_i - \overline{lnc})^2}{N - 1} \right)^{\frac{1}{2}}$$

$$sd_g = \exp(sdlnc)$$

Min	is the minimum value reported for a specific component, and it is printed both for precipitation and air components.
50%	is the 50 percentile, defined as above and computed for air data only.
Max	is the maximum value reported for a specific component, and it is given for precipitation and air components.
Dep	is the wet deposition of a specific precipitation component. The deposition is the product of the total precipitation amount measured and the weighted arithmetic mean of a component measured at a site.
Num bel	is the number of data below the detection limit (not used for precipitation amount).
Num samples	is the number of samples for a specific component.
Samp flag	is a two-character code which gives information on the resolution of the reported data. Usually the resolution reported is the same as the sampling period, but not always. The code used in this report is: H: hourly D: daily D1: one-day each week D2: two-days each week W: weekly WC: weekly with change the first day each month W1: one-week each month W2: two weekly W4: four-weekly M: monthly Y: yearly
QA:	is a flag which gives information on the quality of the data

The units used for the results in this report are given in Table 7.

Table 7: Units used for the measured components.

Components	Units for W. mean, Min Max	Units for depositions
Amount precipitation	mm	mm
Heavy metals in precipitation	µg/l	µg /m ²
Mercury in precipitation	ng/l	ng//m ²
Heavy metals in air	ng/m ³	
Mercury in air	ng/m ³	
POPs in precipitation	ng/l	ng/m ²
PAHs in air	ng/m ³	
Pesticides, HCB and PCBs in air	pg/m ³	

3.6 Monthly summaries

Monthly averages of heavy metals are given in Annexes 5-8. The monthly mean values of precipitation data are precipitation weighted arithmetic averages. Average air concentrations are arithmetic averages of the reported values.

Data which do not have monthly resolution, but have parts of the sample in one month and parts in the following have estimated monthly means. The precipitation data have been treated like this: If e.g. a weekly sample has 5 days in one month and 2 days in the next, 5/7 parts of the precipitation will be assigned to the first month and 2/7 parts to the next month, while the concentrations are assumed to be equal. The precipitation weighted monthly averages are then calculated as the estimated monthly deposition divided by the monthly precipitation amount.

For air samples starting and ending in different months weighted averages are calculated in a similar way. All values are multiplied with the number of days within a given month. The average is obtained by dividing the sum of these values with the number of days with measurements in that month.

3.7 Update

The data compiled in this report represent the best data available at present. If any further errors are detected, the data will be corrected in the database. It is important that the users make certain that they have access to the most recent version of the database. For the data presented here the latest alteration is 15 August 2001. Scientific use of the EMEP data should be based on fresh copies of the data. Copies can be requested from the CCC (e-mail: torunn.berg@nilu.no). Information about the EMEP measurement network can be found at CCC's internet pages at <http://www.nilu.no/projects/ccc/index.html>.

4. Conclusions and recommendations

The lowest concentrations of Pb and Cd are generally observed in northern Scandinavia, Greenland, Iceland, and the westernmost part of Europe. Increasing gradients can be seen eastward. Several countries in Europe have reduced their emissions of Pb which can be seen in the decreasing level in the Pb concentrations at several stations. However, no clear trends can be noticed for other stations.

The concentration level of α -HCH and γ -HCH at the Norwegian and the Icelandic stations are decreasing. For the other stations no clear trends can be noticed for the relatively short period of monitoring.

There is a general need for more measurement sites with high quality data. Few stations in central parts of Europe, the Mediterranean region and the most eastern part of Europe have reported data for heavy metals in precipitation. The site density is also low for heavy metals in air in Scandinavia, the Mediterranean region and eastern Europe. Data for POPs have been reported only from countries around the North and Baltic Seas, in the Arctic and from the Czech Republic.

Several countries have still not reported any data to the database. CCC has, however, got access to data from OSPARCOM (Oslo and Paris Conventions for the prevention of marine pollution), so a few of these countries are nevertheless included in the report. CCC will still appreciate receiving old data for the database. These data will be quality checked and transferred to the database in the same way as newer data. It is important that the participants give information on sampling, analytical methods and quality control.

5. Acknowledgements

A large number of anonymous co-workers in participating countries have been involved in this work. A list of participating institutes, which have provided data for 1999, can be seen below. The staff at CCC wishes to express their gratitude and appreciation for continued good co-operation and efforts.

Denmark	National Environmental Research Institute
Czech Republic	Czech Hydrometeorological Institute
Estonia	Estonian Environmental Research Centre
Finland	Finnish Meteorological Institute
Germany	Umweltbundesamt
Iceland	The Icelandic Meteorological Office
Ireland	Environmental Protection Agency (EPA)
Latvia	Latvian Hydrometeorological Agency
Lithuania	Institute of Physics
Netherlands	National Institute for Public Health and Environmental Protection (RIVM)
Norway	Norwegian Institute for Air Research (NILU)
Portugal	Ministerio do Ambiente, Instituto de Meteorologia
Sweden	Swedish Water and Air Pollution Research Institute (IVL)

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Annex 1

Annual statistics for heavy metals in precipitation

BE0004R Knokke Belgium
Bulk

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.28	0.24	1.00	13	13	1-4	M
Cd	0.87	0.03	4.17	3	10		M
Cu	5.20	2.00	26.35	9	11	1	M
Pb	4.22	2.06	6.36	1	9		M
Precip	-	53.2	125.6	0	9		M

BE0004R Knokke Belgium
Wet only

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.24	0.03	1.10	4	11		M
Cr	3.13	1.60	4.40	6	12	1	M
Cu	9.57	0.90	93.60	9	13	1	M
Hg	0.03	0.01	0.04	6	12	1	M
Ni	3.37	1.90	11.00	8	14	1	M
Pb	22.60	0.68	47.20	3	13	2,3,4	M
Precip	-	22.8	133.0	0	14		M
Zn	23.39	7.10	55.90	0	11		M

CZ0001R Svratouch Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.34	0.08	2.44	0	45		W
Mn	9.21	0.80	110.80	0	45		W
Ni	1.86	0.40	17.10	10	45		W
Pb	5.68	1.80	34.80	0	45		W
Precip	-	0.0	71.3	0	52		W

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.49	0.02	15.48	0	110		D
Mn	6.49	0.90	89.40	0	52		D
Ni	1.08	0.40	13.60	26	110		D
Pb	4.03	0.40	24.20	1	57		D
Precip	-	0.0	28.0	0	363		D

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.22	0.02	1.79	1	48	W
Mn	9.19	1.00	95.80	0	46	W
Ni	2.72	0.39	20.80	8	47	W
Pb	4.98	0.80	12.50	0	47	W
Precip	-	0.2	67.8	0	49	W

DE0001R Westerland Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.11	0.07	0.42	0	42	W
Cd	0.06	0.03	0.22	0	44	W
Co	0.04	0.01	0.12	0	42	W
Cr	0.15	0.04	0.51	0	42	W
Cu	2.50	1.10	13.00	0	45	W
Fe	12.76	1.00	75.50	0	42	W
Hg	12.79	6.40	73.20	0	42	W
Mn	1.63	0.30	17.00	0	45	W
Ni	0.89	0.46	4.03	0	42	W
Pb	1.20	0.63	3.86	0	44	W
Precip	-	13.2	154.6	0	45	W
V	0.45	0.05	1.35	0	42	W
Zn	19.06	9.10	72.40	0	43	W

DE0002R Langenbrugge Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.14	0.02	0.87	0	130	D
Cd	0.17	0.01	1.29	0	129	D
Co	0.08	0.01	0.70	0	131	D
Cr	0.38	0.07	2.47	0	127	D
Cu	2.56	0.40	21.00	0	129	D
Fe	59.38	5.00	540.00	0	131	D
Mn	4.74	0.48	47.36	0	130	D
Ni	1.93	-0.27	21.40	0	126	D
Pb	2.88	0.30	31.26	0	130D	D
Precip	-	0.0	16.5	0	365	D
V	0.63	0.08	3.93	0	131	D
Zn	28.95	3.00	247.00	0	130	D

DE0004R Deuselbach Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.12	0.04	0.39	0	40		W
Cd	0.11	0.04	0.36	0	40		W
Co	0.06	0.01	0.27	0	40		W
Cr	0.28	0.12	0.74	0	39		W
Cu	1.50	0.23	4.50	0	40		W
Fe	60.29	15.00	221.00	0	40		W
Mn	4.52	1.08	18.07	0	39		W
Ni	1.12	0.23	2.86	0	39		W
Pb	2.44	0.51	8.17	0	40		W
Precip	-	0.7	73.9	0	47		W
V	0.46	0.13	1.38	0	40		W
Zn	31.09	0.00	85.70	0	41		W

DE0009R Zingst Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.12	0.03	0.90	0	42		W
Co	0.02	0.01	0.08	0	41		W
Cr	0.13	0.03	0.33	0	40		W
Cu	3.03	0.10	21.30	0	44		W
Fe	20.72	10.10	53.50	0	41		W
Hg	11.69	5.00	85.40	0	43		W
Mn	2.09	0.47	8.00	0	43		W
Ni	0.87	0.25	4.79	0	41		W
Pb	1.21	0.47	5.07	0	44		W
Precip	-	0.8	39.0	0	44		W
V	0.49	0.02	1.61	0	42		W
Zn	10.29	2.10	68.20	0	42		W

DK0008R Anholt Denmark

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.24	0.03	0.82	0	9		M
Cd	0.05	0.03	0.17	0	12		M
Cr	0.24	0.12	0.55	0	11		M
Cu	1.48	0.35	3.29	0	9		M
Fe	88.35	22.00	274.00	0	12		M
Ni	0.36	0.13	1.03	0	11		M
Pb	1.80	0.67	3.93	0	12		M
Precip	-	7.0	166.3	0	12		M
Zn	11.84	6.00	38.00	0	12		M

DK0031R Ulborg Denmark

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.08	0.02	0.17	0	9	M
Cd	0.03	0.01	0.09	0	12	M
Cr	0.09	0.00	0.41	0	10	M
Cu	0.56	0.00	1.28	0	9	M
Fe	34.56	13.00	186.00	0	12	M
Ni	0.22	0.13	0.58	0	12	M
Pb	0.90	0.42	2.40	0	12	M
Precip	-	24.6	183.3	0	12	M
Zn	6.90	4.00	17.00	0	12	M

EE0009R Lahemaa Estonia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.41	0.10	0.80	3	29	M
Cd	0.04	0.01	0.26	15	64	M
Cr	0.52	0.50	1.60	28	29	M
Cu	3.76	0.50	25.80	7	64	M
Ni	0.51	0.50	1.20	28	29	M
Pb	1.08	0.50	16.80	42	64	M
Precip	-	0.0	42.4	0	365	D
Zn	10.71	5.00	130.00	33	66	M

EE0011R Vilsandi Estonia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.53	0.20	0.70	0	6	D
Cd	0.07	0.01	0.60	2	30	D
Cr	0.50	0.50	0.50	7	7	D
Cu	7.77	0.50	40.60	2	31	D
Ni	0.70	0.50	2.20	5	6	D
Pb	0.88	0.50	3.20	25	31	6 D
Precip	-	0.0	34.2	0	365	D
Zn	33.24	5.00	120.00	7	31	D

FI0009R Uto Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.08	0.03	0.60	0	12	M
Cu	2.71	0.56	19.10	0	12	M
Fe	84.60	17.96	302.58	0	12	M
Mn	4.23	0.93	12.86	0	12	M
Ni	0.51	0.25	2.87	0	12	M
Pb	3.00	0.75	27.63	0	12	M
Precip	-	3.7	71.0	0	12	M
V	1.02	0.55	6.08	0	12	M
Zn	7.84	2.92	42.37	0	12	M

FI0017R Virolahti II Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.33	0.16	1.29	0	12		M
Cd	0.12	0.04	0.91	0	12		M
Cr	0.39	0.10	2.31	0	12		M
Cu	1.20	0.64	3.30	0	12		M
Fe	65.91	19.16	208.95	0	12		M
Mn	4.30	1.34	14.22	0	12		M
Ni	0.47	0.29	1.92	0	12		M
Pb	2.71	1.07	12.50	0	12		M
Precip	-	10.5	50.8	0	12		M
V	1.04	0.54	5.45	0	12		M
Zn	6.94	3.67	25.17	0	12		M

FI0036R

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.09	0.04	0.27	0	12		M
Cd	0.02	0.01	0.09	0	12		M
Cr	0.09	0.03	0.36	0	12		M
Cu	0.67	0.34	2.59	0	12		M
Fe	6.70	0.75	16.33	2	12		M
Mn	1.14	0.24	3.03	0	12		M
Ni	0.18	0.08	0.56	0	12		M
Pb	0.73	0.25	2.29	0	12		M
Precip	-	17.0	101.7	0	12		M
V	0.22	0.12	0.60	0	12		M
Zn	2.54	1.03	6.29	0	12		M

FI0053R Hailuoto Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.14	0.07	0.63	0	11		M
Cd	0.08	0.03	0.29	0	11		M
Cr	0.14	0.02	0.79	0	11		M
Cu	1.13	0.47	3.95	0	11		M
Fe	25.32	5.86	152.41	0	10		M
Mn	5.04	0.97	33.95	0	11		M
Ni	0.29	0.14	1.45	0	11		M
Pb	1.80	0.72	8.32	0	11		M
Precip	-	4.1	65.7	0	12		M
V	0.60	0.25	2.66	0	11		M
Zn	9.48	1.86	33.81	0	11		M

FI0092R Hietajarvi Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.11	0.06	2.16	0	12	M
Cd	0.04	0.01	0.78	0	12	M
Cr	0.09	0.01	1.68	2	12	M
Cu	0.58	0.13	10.34	0	12	M
Fe	15.18	1.91	398.98	0	12	M
Mn	1.92	0.32	89.80	0	12	M
Ni	0.21	0.12	3.16	0	12	M
Pb	1.14	0.55	25.02	0	12	M
Precip	-	2.1	70.2	0	12	M
V	0.40	0.17	6.14	0	12	M
Zn	2.81	1.79	59.16	0	12	M

FI0093R Kotinen Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.16	0.06	0.54	0	12	M
Cd	0.04	0.01	0.12	0	12	M
Cr	0.10	0.01	0.28	1	12	M
Cu	0.71	0.19	1.88	0	12	M
Fe	17.85	3.35	86.55	0	12	M
Mn	2.71	0.61	23.31	0	12	M
Ni	0.23	0.13	0.52	0	12	M
Pb	1.31	0.60	2.69	0	12	M
Precip	-	18.0	93.4	0	12	M
V	0.39	0.01	0.97	0	12	M
Zn	6.12	1.53	61.31	0	12	M

FI0094R Pesosjarvi Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.11	0.05	0.61	0	12	M
Cd	0.02	0.01	0.22	0	12	M
Cr	0.07	0.01	0.67	3	12	M
Cu	0.73	0.31	8.98	0	12	M
Fe	8.81	0.75	109.40	2	12	M
Mn	1.02	0.18	23.79	0	12	M
Ni	0.18	0.10	1.04	0	12	M
Pb	0.76	0.27	8.01	0	12	M
Precip	-	2.4	76.6	0	12	M
V	0.27	0.10	1.90	0	12	M
Zn	1.92	0.66	18.27	0	12	M

FI0095R Vuoskojarvi Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.10	0.04	0.77	0	12		M
Cd	0.01	0.00	0.18	0	12		M
Cr	0.11	0.01	1.02	1	12		M
Cu	0.83	0.32	7.04	0	12		M
Fe	6.77	0.75	68.19	2	12		M
Mn	0.55	0.20	7.73	0	12		M
Ni	0.32	0.11	3.05	0	12		M
Pb	0.50	0.16	5.94	0	12		M
Precip	-	4.4	123.9	0	12		M
V	0.11	0.00	1.58	0	12		M
Zn	1.33	0.35	18.26	0	12		M

FI0096R Pallas Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Hg	5.03	2.30	7.60	0	12		M
Precip	-	9.0	83.0	0	12		M

FR0090R Porspoder France

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.09	0.02	0.43	0	12		M
Cd	0.02	0.01	0.07	0	12		M
Cr	0.16	0.06	0.43	0	12		M
Cu	0.92	0.49	3.03	0	12		M
Ni	0.30	0.10	0.73	0	12		M
Pb	1.86	0.57	10.71	0	12		M
Precip	-	9.0	213.0	0	12		M
Zn	2.47	1.22	15.68	0	12		M

GB0014R High Muffles United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.24	0.07	0.79	0	12		M
Cd	0.07	0.03	0.31	0	12		M
Cr	0.19	0.00	1.00	1	11		M
Cu	1.41	0.45	3.50	0	12		M
Ni	0.31	0.10	1.10	0	12		M
Pb	2.46	1.00	4.70	0	12		M
Precip	-	24.6	178.1	0	12		M
Zn	5.07	0.80	8.80	0	11		M

GB0090R East Ruston United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.13	0.08	0.25	0	10	M
Cd	0.04	0.02	0.15	0	11	M
Cr	0.29	0.06	2.50	0	10	M
Cu	1.28	0.60	2.90	0	11	M
Ni	0.35	0.20	0.89	0	11	M
Pb	1.89	1.00	5.10	0	11	M
Precip	-	31.8	152.0	0	11	M
Zn	5.53	2.50	14.00	0	10	M

GB0091R Banchory United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.10	0.03	0.26	0	11	M
Cd	0.06	0.02	0.12	0	12	M
Cr	0.17	0.00	0.41	2	11	M
Cu	1.17	0.30	5.40	0	11	M
Ni	0.30	0.14	0.94	0	12	M
Pb	0.91	0.31	3.00	0	12	M
Precip	-	31.9	133.0	0	12	M
Zn	3.23	0.80	5.30	0	11	M

IE0001R Valentia Obs. Ireland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.34	0.25	0.60	7	11 1	M
Cd	0.03	0.03	0.07	10	11	M
Cr	0.26	0.25	0.60	10	11 1	M
Cu	0.74	0.25	2.00	2	11	M
Mn	1.34	0.25	5.20	1	11	M
Ni	0.28	0.25	0.50	11	11	M
Pb	0.30	0.25	0.90	9	11	M
Precip	-	52.2	304.4	0	12	M
V	1.29	0.25	5.00	4	11	M
Zn	15.04	5.40	38.30	0	11	M
Al	18.81	6.90	70.70	0	11	M

IE0002R Turlough Hill Ireland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.25	0.00	0.60	7	10	1	M
Cd	0.04	0.03	0.13	6	10		M
Cr	0.26	0.25	0.50	9	10	1	M
Cu	0.86	0.25	1.70	1	10		M
Mn	1.93	0.70	5.10	0	10		M
Ni	0.31	0.25	0.60	8	10		M
Pb	0.55	0.25	1.40	4	10		M
Precip	-	36.8	269.8	0	12		M
V	1.36	0.25	5.00	3	10		M
Zn	4.37	2.60	7.30	0	10		M
Al	18.13	9.60	51.60	0	10		M

IS0002R Irafoss Iceland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.04	0.01	0.13	26	34		W
Cd	0.01	0.01	0.20	21	34		W
Cr	0.12	0.05	0.90	30	34		W
Cu	1.49	0.32	12.20	0	34		W
Fe	148.37	5.00	1968.00	7	34		W
Mn	3.58	0.20	33.10	0	34		W
Ni	0.24	0.05	1.10	12	34		W
Pb	1.39	0.03	7.03	0	34		W
Precip	-	0.0	182.3	0	39		W
V	0.36	0.05	3.46	5	34		W
Zn	11.39	1.60	74.30	0	34		W
Al	100.61	5.00	1021.00	3	34		W

IS0090R Reykjavik Iceland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.05	0.03	0.32	21	39		W
Cd	0.01	0.01	0.10	22	39		W
Cr	0.38	0.05	6.60	8	39		W
Cu	2.29	0.61	43.82	0	39		W
Fe	191.66	5.00	4566.00	2	39		W
Mn	4.93	0.90	137.00	0	39		W
Ni	0.92	0.05	36.03	9	39		W
Pb	0.74	0.15	6.12	0	39		W
Precip	-	0.0	53.0	0	49		W
V	0.44	0.05	6.41	1	39		W
Zn	11.09	1.80	224.70	0	39		W
Al	188.16	31.60	5440.40	0	39		W

LT0015R Preila Lithuania

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.10	0.01	2.91	0	49	WC
Cu	1.01	0.10	14.00	0	49	WC
Pb	3.31	0.50	86.00	0	49	WC
Precip	-	0.0	86.2	0	50	WC
Zn	10.61	3.30	286.00	0	49	WC

LV0010R Rucava Latvia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.15	0.05	0.57	0	11	M
Cu	1.55	0.60	4.90	0	11	M
Pb	2.28	0.20	7.00	0	11	M
Precip	-	21.7	155.9	0	12	M
Zn	14.41	6.50	30.90	0	11	M

NL0009R Kollumerwaard Netherlands

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.32	0.23	0.68	9	12	W4
Cd	0.13	0.06	0.41	0	12	W4
Cr	0.21	0.21	0.21	12	12	W4
Cu	1.76	0.64	7.66	0	12	W4
Ni	0.34	0.20	0.83	8	12	W4
Pb	1.65	1.10	2.32	0	12	W4
Precip	-	13.5	79.7	0	12	W4
Zn	9.59	5.00	22.20	0	12	W4

NL0091R

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.23	0.23	0.23	12	12	W4
Cd	0.05	0.02	0.15	3	12	W4
Cr	0.21	0.21	0.21	12	12	W4
Cu	1.50	0.88	3.42	0	12	W4
Hg	11.13	5.00	95.00	0	46	W
Ni	0.36	0.20	0.75	5	12	W4
Pb	2.71	1.40	5.59	0	12	W4
Precip	-	16.5	141.6	0	51	
Zn	6.27	1.65	20.90	1	12	W4

NO0001R Birkenes Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.04	0.00	0.26	12	54		WC
Pb	1.50	0.12	5.59	0	52		WC
Precip	-	0.0	128.0	0	60		WC
Zn	4.38	0.52	63.15	0	53		WC

NO0039R Kaarvatn Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.02	0.00	0.10	19	54		WC
Pb	0.20	0.04	1.60	0	54		WC
Precip	-	0.0	95.0	1	62		WC
Zn	2.05	0.23	11.69	0	54		WC

NO0041R Osen Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.04	0.00	0.33	2	49		WC
Pb	1.05	0.10	6.74	0	49		WC
Precip	-	0.0	47.8	1	57		WC
Zn	7.07	1.04	36.43	0	46		WC

NO0047R Svanvik Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	1.41	0.05	37.02	3	52		WC
Cd	0.08	0.00	1.34	4	52		WC
Cr	0.32	0.10	31.19	24	52		WC
Co	0.37	0.00	22.29	1	52		WC
Cu	13.99	0.40	765.45	0	52		WC
Pb	0.82	0.03	16.24	0	52		WC
Ni	11.07	0.10	598.97	2	52		WC
Precip	-	0.0	70.9	0	60		WC
Zn	8.36	0.76	157.70	0	52		WC

NO0055R Karasjok Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cd	0.03	0.00	0.15	8	48		WC
Pb	0.44	0.00	4.24	1	48		WC
Precip	-	0.1	89.3	0	60		WC
Zn	5.76	0.10	53.90	1	48		WC

NO0056R Hurdal Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.03	0.00	0.19	8	52	WC
Pb	1.18	0.16	5.83	0	52	WC
Precip	-	0.0	93.4	1	51	WC
Zn	6.26	1.73	43.15	0	51	WC

NO0092R Øverbygd Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.08	0.05	0.54	33	49	WC
Cd	0.01	0.00	0.07	23	49	WC
Cr	0.12	0.10	0.72	44	49	WC
Co	0.01	0.00	0.09	30	49	WC
Cu	0.34	0.05	2.43	3	49	WC
Fe	8.9	5.0	123.9	34	49	WC
Pb	0.55	0.07	4.27	0	48	WC
Mn	1.30	0.25	24.36	11	49	WC
Ni	0.14	0.10	0.68	35	49	WC
Precip	-	0.0	75.5	6	55	WC
V	0.07	0.05	0.38	32	49	WC
Zn	5.65	0.69	87.46	0	49	WC

NO0093R Valdalen Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.08	0.05	0.42	38	54	WC
Cd	0.10	0.01	0.86	0	53	WC
Cr	0.37	0.10	4.11	31	54	WC
Co	0.03	0.00	0.35	15	54	WC
Cu	1.13	0.12	5.51	0	54	WC
Fe	12.7	5.0	169.9	41	54	WC
Pb	0.69	0.11	3.83	0	54	WC
Mn	2.27	0.25	13.88	8	54	WC
Ni	0.47	0.10	10.87	18	54	WC
Precip	-	0.0	35.5	2	60	WC
V	0.15	0.05	0.80	19	54	WC
Zn	9.55	1.27	63.51	0	53	WC

NO0094R Moesvatn Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.09	0.05	0.51	29	47		WC
Cd	0.05	0.00	0.23	8	48		WC
Cr	0.13	0.10	4.67	42	48		WC
Co	0.02	0.00	0.08	19	48		WC
Cu	1.98	0.13	10.59	0	48		WC
Fe	6.2	5.0	59.9	40	49		WC
Pb	1.08	0.17	5.01	0	47		WC
Mn	1.42	0.25	11.53	8	49		WC
Ni	0.32	0.10	2.41	26	48		WC
Precip	-	0.0	61.5	1	50		WC
V	0.16	0.05	0.82	17	49		WC
Zn	6.64	0.88	44.18	0	48		WC

NO0095R Ualand Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.09	0.05	0.45	34	57		WC
Cd	0.02	0.00	0.14	20	57		WC
Cr	0.12	0.10	0.34	49	57		WC
Co	0.01	0.00	0.12	35	57		WC
Cu	0.22	0.05	1.66	13	57		WC
Fe	7.1	5.0	120.5	44	57		WC
Pb	0.86	0.05	4.25	0	57		WC
Mn	0.74	0.25	15.79	21	57		WC
Ni	0.12	0.10	1.29	46	57		WC
Precip	-	0.1	147.5	0	60		WC
V	0.41	0.05	1.53	1	57		WC
Zn	2.32	0.05	14.60	2	57		WC

NO0099R Lista Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.22	0.05	1.08	16	53		WC
Cd	0.03	0.00	0.45	12	53		WC
Cr	0.20	0.10	2.18	33	53		WC
Co	0.04	0.00	0.19	10	53		WC
Cu	1.73	0.05	15.37	1	52		WC
Hg	9.71	6.10	17.50	0	11		WC
Pb	1.50	0.15	6.96	0	52		WC
Ni	0.36	0.10	5.79	21	53		WC
Precip	-	0.0	81.5	0	59		WC
V	0.65	0.10	3.92	0	53		WC
Zn	7.44	0.36	36.03	0	51		WC

PL0004R Leba Poland

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cd	0.08	0.02	0.18	0	12	M
Cu	3.80	1.90	7.86	0	12	M
Pb	2.75	1.84	5.04	0	12	M
Precip	-	19.6	194.9	0	12	M
Zn	7.82	2.58	22.94	0	12	M

PT0001R Braganca Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cu	1.97	0.33	9.94	2	36	D
Mn	8.30	1.07	57.74	13	36	D
Ni	0.86	0.78	2.59	33	36	D
Pb	0.65	0.65	0.65	36	36	D
Precip off	-	4.60	55.80	0	36	D
Zn	154.41	2.00	3213.00	0	36	D

PT0003R V. Do Castelo Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cu	2.56	0.85	23.14	0	85	D
Mn	2.91	1.07	28.39	32	85	D
Ni	0.94	0.78	3.25	75	85	D
Pb	0.76	0.65	5.60	75	85	D
Precip off	-	4.00	176.70	0	86	D
Zn	14.81	2.00	110.00	0	85	D

PT0004R Monte Velho Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
Cu	1.34	0.33	8.24	3	50	D
Mn	3.80	1.07	15.91	20	50	D
Ni	1.06	0.78	5.03	38	50	D
Pb	0.68	0.14	1.87	48	50	D
Precip off	-	0.60	63.50	0	54	D
Zn	12.68	2.00	80.00	0	50	D

PT0010R

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Cu	1.94	0.33	7.05	2	38		D
Mn	9.27	1.07	50.91	7	40		D
Ni	2.25	0.78	24.41	18	40		D
Pb	1.05	0.65	13.99	28	40		D
Precip off	-	0.00	89.00	0	52		D
Zn	60.23	8.00	357.00	0	40		D

SE0002R

Rorvik

Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Hg	9.43	6.40	18.70	0	11		M
Precip	-	9.0	110.0	0	11		M

SE0005R

Bredkalen

Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
As	0.12	0.07	0.21	7	11		M
Cd	0.05	0.01	0.15	1	11		M
Co	0.01	0.01	0.03	3	11		M
Cr	0.27	0.10	0.94	2	11		M
Cu	1.02	0.42	1.84	0	11		M
Hg	4.17	2.00	6.60	0	12		M
Mn	5.51	0.50	14.80	0	11		M
Ni	0.22	0.05	0.66	1	11		M
Pb	0.71	0.34	2.42	0	11		M
Precip	-	12.0	97.0	0	12		M
V	0.18	0.05	0.53	0	11		M
Zn	14.08	3.13	34.15	0	11		M

SE0011R

Vavihill

Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Hg	10.38	6.90	20.50	0	12		M
Precip	-	15.0	107.0	0	12		M

SE0012R Aspvreten Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.21	0.10	0.71	1	10	M
Cd	0.08	0.03	0.26	0	10	M
Co	0.02	0.01	0.12	0	10	M
Cr	0.48	0.20	1.13	0	10	M
Cu	1.57	0.69	4.48	0	10	M
Hg	12.29	3.00	36.90	0	12	M
Mn	3.35	1.50	10.60	0	10	M
Ni	0.34	0.15	1.34	0	10	M
Pb	2.22	0.99	7.54	0	10	M
Precip	-	10.0	95.0	0	10	M
V	0.76	0.39	2.12	0	10	M
Zn	11.59	5.03	47.21	0	10	M

SE0051R Arup Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.14	0.10	0.25	4	12	M
Cd	0.10	0.01	0.43	0	12	M
Co	0.02	0.01	0.07	3	12	M
Cr	0.29	0.09	0.56	0	12	M
Cu	1.63	0.39	5.31	0	12	M
Mn	3.36	1.10	8.80	0	12	M
Ni	0.27	0.05	0.83	3	12	M
Pb	2.38	0.63	6.59	0	12	M
Precip	-	28.0	179.0	0	12	M
V	0.89	0.19	2.17	0	12	M
Zn	12.04	5.45	32.93	0	12	M

SE0097R Gårdsjon Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num QA sampl flag	Samp flag
As	0.10	0.08	0.11	8	11	M
Cd	0.05	0.01	0.11	0	11	M
Cr	0.24	0.15	0.39	0	11	M
Ni	0.21	0.05	0.45	1	11	M
Pb	1.65	0.99	2.91	0	11	M
Precip	-	34.0	199.0	0	11	M
Zn	11.73	2.98	26.06	0	11	M

SK0002R Chopok Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Al	24.73	11.00	54.00	0	12		M
Fe	42.49	17.00	122.00	0	12		M
Mn	5.19	1.80	14.30	0	12		M
Precip	-	26.5	227.0	0	12		M
Zn	40.20	11.00	106.00	0	12		M

SK0004R Stara Lesna Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Al	19.55	8.00	66.00	0	12		M
Fe	21.04	7.00	215.00	0	12		M
Mn	3.93	2.20	6.50	0	12		M
Precip	-	13.4	161.7	0	12		M
Zn	13.32	7.00	47.00	0	12		M

SK0005R Liesek Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Al	22.51	10.00	78.00	0	12		M
Fe	17.26	3.00	63.00	0	12		M
Mn	4.87	2.20	13.80	0	12		M
Precip	-	16.5	193.3	0	12		M
Zn	89.94	9.00	437.00	0	12		M

SK0006R Starina Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Al	24.40	13.00	74.00	0	12		M
Fe	17.34	7.00	57.00	0	12		M
Mn	3.27	1.00	6.40	0	12		M
Precip	-	24.3	121.0	0	12		M
Zn	15.54	7.00	23.00	0	12		M

Annex 2

Annual statistics for heavy metals in air

BE0004R Knokke Belgium

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	2.00	0.00	2.00	1.00	2.00	2.00	2.00	100.0	12	12		M
Cu	24.28	4.84	23.89	1.19	20.00	22.00	38.00	100.0	1	12		M
Ni	12.91	1.88	12.79	1.16	10.00	13.00	16.00	100.0	2	12		M
Pb	23.19	4.16	22.93	1.19	20.00	20.00	30.00	100.0	6	12		M
Zn	36.62	17.65	32.26	1.76	13.00	41.00	65.00	100.0	0	12		M

CZ0001R Svratouch Czech Republic

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.31	0.41	0.19	2.63	0.02	0.18	2.85	14.8	0	54		D1
Pb	8.38	5.68	6.76	1.96	2.00	7.00	31.00	14.5	0	53		D1

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.41	0.54	0.27	2.53	0.03	0.32	3.80	15.3	0	56		D1
Pb	6.61	4.88	5.25	2.20	0.00	6.00	24.00	15.3	0	56		D1

DE0001R Westerland Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.55	0.33	0.47	1.80	0.17	0.46	1.34	100.0	0	12		M
Cd	0.17	0.10	0.15	1.94	0.04	0.16	0.36	100.0	0	12		M
Cu	1.84	0.83	1.67	1.60	0.64	1.49	3.60	100.0	0	12		M
Fe	90.41	33.94	83.97	1.50	37.00	90.00	155.00	100.0	0	12		M
Mn	3.12	1.26	2.86	1.56	1.11	2.98	5.52	100.0	0	12		M
Ni	1.06	0.46	0.94	1.71	0.36	1.07	1.62	100.0	0	12		M
Pb	5.24	2.35	4.78	1.57	2.26	4.79	9.61	100.0	0	12		M

DE0002R Langenbrugge Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.75	0.34	0.69	1.50	0.39	0.70	1.65	100.0	0	12		M
Cd	0.21	0.09	0.20	1.55	0.11	0.18	0.36	100.0	0	12		M
Cu	2.60	0.95	2.46	1.42	1.47	2.22	4.75	100.0	0	12		M
Fe	99.46	38.42	93.23	1.46	46.00	92.00	186.00	100.0	0	12		M
Mn	3.85	1.42	3.65	1.39	2.02	3.50	7.58	100.0	0	12		M
Ni	1.04	0.49	0.95	1.54	0.45	0.84	2.23	100.0	0	12		M
Pb	8.67	3.53	7.98	1.57	3.89	9.41	14.65	100.0	0	12		M

DE0003R Schauinsland Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.24	0.14	0.20	2.05	0.05	0.21	0.50	100.0	0	12		M
Cd	0.09	0.04	0.09	1.53	0.03	0.09	0.16	100.0	0	12		M
Cu	1.38	0.57	1.25	1.67	0.44	1.35	2.17	100.0	0	12		M
Fe	65.02	33.81	53.99	2.06	9.00	60.00	118.00	100.0	0	12		M
Mn	2.02	0.81	1.83	1.67	0.52	1.92	3.41	100.0	0	12		M
Ni	0.64	0.48	0.44	2.81	0.05	0.62	1.49	100.0	0	12		M
Pb	3.81	1.19	3.62	1.45	1.41	3.71	5.91	100.0	0	12		M

DE0004R Deuselbach Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.47	0.12	0.46	1.28	0.30	0.46	0.72	100.0	0	12		M
Cd	0.20	0.05	0.20	1.29	0.13	0.21	0.30	100.0	0	12		M
Cu	2.42	0.46	2.37	1.27	1.21	2.54	3.02	100.0	0	12		M
Fe	127.81	27.23	124.39	1.29	61.00	128.00	160.00	100.0	0	12		M
Mn	5.18	0.85	5.11	1.21	3.07	5.26	6.53	100.0	0	12		M
Pb	11.01	2.92	10.69	1.30	7.02	10.83	16.51	100.0	0	12		M

DE0005R Brotjacklriegel Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.65	0.44	0.54	1.95	0.20	0.46	1.45	100.0	0	12		M
Cd	0.12	0.04	0.12	1.42	0.06	0.12	0.19	100.0	0	12		M
Cu	1.15	0.45	1.05	1.64	0.30	1.03	1.79	100.0	0	12		M
Fe	67.37	25.82	62.29	1.52	36.00	69.00	103.00	100.0	0	12		M
Mn	2.33	0.78	2.20	1.43	1.39	2.46	3.55	100.0	0	12		M
Ni	0.94	0.62	0.80	1.77	0.36	0.75	2.23	100.0	0	12		M
Pb	4.83	1.27	4.67	1.32	2.59	4.69	7.15	100.0	0	12		M

DE0007R Neuglobsow Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.92	0.35	0.86	1.48	0.50	0.71	1.58	100.0	0	12		M
Cd	0.30	0.20	0.24	1.99	0.08	0.23	0.68	100.0	0	12		M
Cu	1.66	0.61	1.55	1.48	0.76	1.45	2.56	100.0	0	12		M
Fe	72.89	31.68	67.71	1.47	40.00	65.00	156.00	100.0	0	12		M
Mn	3.01	1.43	2.78	1.50	1.63	2.58	7.00	100.0	0	12		M
Ni	0.88	0.32	0.82	1.52	0.33	0.85	1.52	100.0	0	12		M
Pb	8.57	3.83	7.79	1.60	3.82	7.63	14.82	100.0	0	12		M

DE0008R Schmucke Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.44	0.20	0.36	2.19	0.05	0.50	0.72	100.0	0	12		M
Cd	0.27	0.13	0.23	1.67	0.10	0.22	0.51	100.0	0	12		M
Cu	1.66	0.66	1.54	1.46	0.92	1.39	2.92	100.0	0	12		M
Fe	78.05	38.38	69.11	1.68	30.00	73.00	151.00	100.0	0	12		M
Mn	3.31	1.27	3.10	1.45	1.84	2.84	5.90	100.0	0	12		M
Ni	0.80	0.38	0.73	1.52	0.45	0.62	1.65	100.0	0	12		M
Pb	7.01	2.39	6.68	1.40	4.05	6.82	12.12	100.0	0	12		M

DE0009R Zingst Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.60	0.27	0.54	1.70	0.16	0.49	1.04	100.0	0	12		M
Cd	0.18	0.07	0.16	1.57	0.08	0.18	0.30	100.0	0	12		M
Cu	2.36	1.11	2.12	1.60	1.10	1.76	4.50	100.0	0	12		M
Fe	74.42	36.80	67.67	1.56	35.00	67.00	170.00	100.0	0	12		M
Mn	3.01	1.36	2.78	1.48	1.50	2.67	6.69	100.0	0	12		M
Ni	1.46	0.51	1.37	1.46	0.75	1.30	2.26	100.0	0	12		M
Pb	7.25	3.71	6.40	1.69	3.10	5.80	13.80	100.0	0	12		M

DK0003R Tange Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.62	0.64	0.40	2.73	0.00	0.38	4.00	97.3	18	355		D
Cd	0.28	0.23	0.19	2.81	0.00	0.23	2.32	96.7	282	353		D
Cr	0.65	0.69	0.39	3.19	0.00	0.46	6.74	96.4	209	352		D
Cu	1.62	1.91	0.99	3.12	0.01	1.08	21.99	96.7	50	353		D
Fe	108.36	140.19	61.65	2.83	2.38	52.64	1034.23	97.3	0	355		D
Ni	1.39	3.88	0.77	3.00	0.00	0.92	61.96	96.7	17	353		D
Pb	5.98	8.18	3.54	2.86	0.07	3.64	88.14	97.3	3	355		D
Zn	13.71	11.69	9.67	2.42	0.77	10.06	94.11	97.0	2	354		D

DK0005R Keldsnor Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.54	0.65	0.33	2.87	0.00	0.36	5.34	83.0	34	303		D
Cd	0.28	0.23	0.18	2.95	0.00	0.22	1.27	83.0	254	303		D
Cr	0.61	0.66	0.35	3.38	0.00	0.39	5.19	83.0	196	303		D
Cu	2.06	2.29	1.21	3.28	0.00	1.37	24.32	83.0	25	303		D
Fe	98.69	99.97	61.69	2.79	2.86	61.49	614.95	83.0	0	303		D
Ni	2.13	2.00	1.43	2.64	0.05	1.56	15.00	83.0	7	303		D
Pb	7.91	9.48	4.52	3.20	0.10	5.05	105.29	83.0	4	303		D
Zn	15.15	12.94	10.20	2.69	0.16	11.23	66.62	83.0	5	303		D

DK0008R Anholt Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.41	0.62	0.25	2.76	0.00	0.24	5.22	97.8	37	357		D
Cd	0.21	0.18	0.14	3.01	0.00	0.18	1.81	97.8	332	357		D
Cr	0.59	0.85	0.35	2.85	0.00	0.38	11.18	97.8	243	357		D
Cu	1.15	1.25	0.67	3.14	0.00	0.70	7.07	97.8	116	357		D
Fe	64.77	80.60	35.28	3.11	0.97	33.45	624.27	97.8	16	357		D
Ni	1.54	1.48	1.03	2.60	0.02	1.13	13.88	97.8	11	357		D
Pb	4.79	7.30	2.36	3.60	0.01	2.51	73.79	97.8	39	357		D
Zn	9.46	8.62	6.15	2.83	0.00	6.45	47.24	97.8	38	357		D

DK0010G Greenland Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.08	0.11	0.03	4.99	0.00	0.04	0.46	100.0	14	53		W
Cr	0.07	0.05	0.05	2.39	0.01	0.06	0.25	100.0	39	53		W
Cu	0.13	0.12	0.07	3.98	0.00	0.08	0.44	100.0	16	53		W
Mn	0.34	0.35	0.20	3.24	0.00	0.22	2.07	100.0	3	53		W
Ni	0.07	0.06	0.05	3.01	0.00	0.06	0.21	100.0	16	53		W
Pb	0.53	0.65	0.20	5.25	0.01	0.26	2.52	100.0	5	53		W
Se	0.03	0.02	0.02	3.15	0.00	0.03	0.11	100.0	11	53		W
Zn	0.69	0.79	0.33	4.07	0.01	0.33	2.92	100.0	22	53		W
Al	20.51	44.30	9.32	3.43	0.24	8.82	320.52	100.0	16	53		W

DK0031R Ulborg Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.43	1.54	0.20	3.21	0.00	0.23	28.23	96.7	64	353		D
Cd	0.23	0.19	0.15	2.83	0.00	0.18	1.37	96.7	306	353		D
Cr	0.59	1.38	0.29	3.42	0.00	0.31	22.83	96.7	243	353		D
Cu	1.10	1.22	0.59	3.72	0.00	0.73	10.25	96.7	84	353		D
Fe	65.99	90.26	33.70	3.23	1.03	30.09	528.30	96.7	0	353		D
Ni	1.08	1.20	0.68	2.91	0.01	0.77	12.48	96.7	29	353		D
Pb	5.14	11.72	2.38	3.83	0.01	2.57	193.80	96.7	12	353		D
Zn	11.38	25.60	6.15	3.20	0.04	6.98	448.17	96.7	20	353		D

FI0096R Pallas Finland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Hg	1.42	0.24	1.40	1.18	1.00	1.40	2.10	9.3	0	34		D1

GB0014R High Muffles United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.61	0.34	0.52	2.09	0.08	0.55	1.37	100.0	0	12		M
Cd	0.14	0.12	0.10	2.16	0.04	0.06	0.44	100.0	5	12		M
Cr	0.15	0.29	0.04	4.08	0.02	0.02	0.79	100.0	8	12		M
Cu	4.82	3.15	3.97	1.96	1.46	3.18	9.15	100.0	0	12		M
Ni	0.63	0.69	0.24	5.57	0.04	0.36	2.16	90.4	5	11		M
Pb	8.95	5.18	7.25	2.39	0.60	8.20	21.10	100.0	0	12		M
Zn	39.35	37.76	27.82	2.43	7.70	29.10	126.10	90.4	0	11		M

GB0090R East Ruston United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	1.13	0.87	1.02	2.04	0.36	0.85	3.13	100.0	0	11		M
Cd	0.25	0.22	0.19	2.42	0.04	0.20	0.80	100.0	3	11		M
Cr	0.75	1.08	0.17	7.87	0.01	0.22	3.49	100.0	5	11		M
Cu	3.50	1.36	3.16	1.61	1.26	3.21	5.47	100.0	0	11		M
Ni	0.73	0.77	0.17	7.00	0.03	0.04	1.84	100.0	6	11		M
Pb	16.93	11.48	12.66	2.78	1.00	13.90	34.70	100.0	0	11		M
Zn	18.54	9.96	14.98	2.17	2.40	16.55	32.50	100.0	0	11		M

GB0091R Banchory United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.27	0.21	0.22	1.89	0.10	0.20	0.83	89.9	0	11		M
Cd	0.07	0.04	0.07	1.65	0.03	0.07	0.13	89.9	6	11		M
Cr	0.86	1.09	0.21	8.67	0.01	0.36	3.25	82.7	0	10		M
Cu	1.20	0.95	0.93	2.14	0.27	0.84	3.43	89.9	0	11		M
Ni	0.10	0.14	0.06	2.01	0.05	0.05	0.51	89.9	9	11		M
Pb	2.26	1.12	1.87	2.13	0.25	2.11	4.48	89.9	0	11		M
Zn	15.57	9.98	11.48	2.40	2.63	14.17	32.56	82.2	0	10		M

IE0031R Mace Head Ireland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Hg	1.75	0.27	1.73	1.17	0.57	1.74	5.40	96.1	0	8419		H

IS0091R Storchofdi Iceland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.08	0.12	0.05	2.31	0.01	0.05	0.63	100.0	0	25		W2
Cd	0.20	0.49	0.04	4.86	0.01	0.02	2.21	100.0	0	25		W2
Cr	7.24	4.06	6.16	1.90	1.73	6.97	17.66	100.0	0	25		W2
Cu	1.12	1.23	0.80	2.11	0.30	0.63	5.71	100.0	0	25		W2
Fe	318.66	349.99	204.41	2.44	48.76	161.14	1648.20	100.0	0	25		W2
Hg	0.53	0.30	0.45	1.96	0.09	0.50	1.16	100.0	0	25		W2
Mn	5.80	5.88	3.68	2.58	0.80	2.83	24.28	100.0	0	25		W2
Ni	11.15	27.09	5.03	3.08	0.44	5.12	138.99	100.0	0	25		W2
Pb	1.00	1.12	0.70	2.19	0.21	0.54	5.32	100.0	0	25		W2
V	1.26	1.51	0.74	2.59	0.19	0.50	7.18	100.0	0	25		W2
Zn	16.42	17.73	11.23	2.41	2.52	9.59	80.94	100.0	0	25		W2
Al	169.74	183.86	105.11	2.79	10.43	95.18	875.47	100.0	0	25		W2

LT0015R Preila Lithuania

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.29	0.23	0.23	2.00	0.06	0.21	1.42	99.2	0	52		W
Cu	1.78	0.90	1.60	1.56	0.76	1.50	5.34	99.2	0	52		W
Pb	9.94	6.22	8.49	1.75	2.70	7.67	29.95	99.2	0	52		W
V	2.95	1.54	2.59	1.71	0.47	2.52	7.42	99.2	0	52		W
Zn	20.31	10.87	17.85	1.67	6.90	17.10	50.50	99.2	0	52		W

LV0010R Rucava Latvia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.13	0.09	0.09	2.71	0.01	0.11	0.34	89.3	11	47		W
Cu	0.93	0.83	0.73	2.78	0.00	0.70	2.80	89.3	26	47		W
Pb	4.90	5.47	2.59	3.60	0.20	3.75	29.90	89.3	3	47		W
Zn	17.93	18.62	10.32	3.09	1.30	12.60	69.70	89.3	5	47		W

LV0016R Zoseni Latvia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.17	0.10	0.14	1.85	0.03	0.14	0.46	98.6	0	52		W
Cu	1.37	2.12	0.83	2.74	0.00	0.90	11.40	98.6	23	52		W
Pb	4.84	3.71	3.82	1.99	0.90	3.65	19.20	97.8	0	51		W
Zn	18.31	15.69	14.01	2.04	4.20	14.00	69.70	98.6	0	52		W

NL0009R Kollumerwaard Netherlands

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.68	0.60	0.47	2.42	0.13	0.49	3.28	49.0	39	179		D
Cd	0.21	0.19	0.14	2.61	0.04	0.15	1.12	49.0	50	179		D
Pb	10.63	9.02	7.57	2.37	0.63	7.25	56.64	49.3	0	180		D
Zn	31.82	30.02	24.61	1.99	5.17	22.58	252.54	48.2	0	176		D

NO0042G Zeppelin, Spitsbergen Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.10	0.16	0.05	5.18	0.00	0.04	0.85	100.0	3	47		D2
Cd	0.02	0.03	0.01	5.08	0.00	0.01	0.14	100.0	9	47		D2
Co	0.06	0.12	0.04	2.16	0.02	0.03	0.78	100.0	39	46		D2
Cr	0.14	0.25	0.08	2.82	0.03	0.05	1.21	100.0	31	47		D2
Cu	0.29	0.31	0.20	3.07	0.04	0.24	1.70	100.0	12	47		D2
Hg	2.04	0.70	1.91	1.48	0.70	1.80	3.00	4.7	0	17	4	D1
Mn	0.48	0.56	0.32	3.24	0.06	0.30	2.55	100.0	13	47		D2
Ni	0.14	0.12	0.13	1.86	0.07	0.12	0.60	100.0	37	47		D2
Pb	0.48	0.76	0.20	4.63	0.02	0.29	4.54	29.6	9	47		D2
V	0.17	0.28	0.10	4.45	0.02	0.09	1.44	100.0	4	47		D2
Zn	1.56	2.14	0.87	3.47	0.10	0.89	10.08	100.0	7	47		D2

NO0099R Lista Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
As	0.26	0.10	0.24	1.46	0.11	0.22	0.43	100.0	0	12		M
Cd	0.06	0.03	0.06	1.53	0.03	0.05	0.12	100.0	0	12		M
Cr	1.52	0.46	1.47	1.31	0.92	1.43	2.66	100.0	0	12		M
Cu	0.73	0.35	0.66	1.57	0.29	0.61	1.50	100.0	0	12		M
Hg	1.85	0.33	1.83	1.18	1.50	1.75	2.60	74.8	0	9		M
Ni	0.57	0.20	0.54	1.35	0.35	0.52	1.08	100.0	0	12		M
Pb	2.21	0.89	2.07	1.45	1.25	1.72	4.23	100.0	0	12		M
V	1.01	0.48	0.92	1.54	0.54	0.76	2.15	100.0	0	12		M

SE0002R Rorvik Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Hg	1.41	0.25	1.39	1.18	1.00	1.30	2.30	17.0	0	62		D1

SK0002R Chopok Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.27	0.14	0.23	1.71	0.10	0.20	0.50	100.0	0	12		M
Cr	2.65	1.32	2.44	1.49	1.60	2.20	6.30	100.0	0	12		M
Cu	2.78	0.96	2.64	1.38	1.70	2.40	4.80	100.0	0	12		M
Mn	1.61	0.91	1.46	1.54	0.90	1.40	4.10	100.0	0	12		M
Ni	2.08	1.93	1.49	2.25	0.50	1.00	7.00	100.0	0	12		M
Pb	2.50	1.30	2.19	1.73	0.90	1.50	4.50	100.0	0	12		M
V	0.17	0.18	0.18	1.94	0.00	0.10	0.60	100.0	0	12		M
Zn	85.23	27.79	81.67	1.33	61.00	77.70	152.90	91.5	0	11		M

SK0004R Stara Lesna Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.46	0.21	0.43	1.41	0.30	0.40	1.10	100.0	0	12		M
Cr	1.60	0.54	1.52	1.40	1.00	1.60	2.70	100.0	0	12		M
Cu	3.82	2.00	3.48	1.51	2.10	3.50	9.60	100.0	0	12		M
Mn	5.94	1.88	5.65	1.40	3.40	5.40	8.60	100.0	0	12		M
Ni	1.76	1.23	1.36	2.21	0.40	1.40	4.40	100.0	0	12		M
Pb	16.04	22.04	11.28	1.96	7.10	10.00	85.60	100.0	0	12		M
V	0.27	0.26	0.24	2.20	0.00	0.20	0.80	100.0	0	12		M
Zn	36.50	20.49	30.50	1.96	11.30	34.80	72.00	100.0	0	12		M

SK0005R Liesek Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.64	0.26	0.60	1.42	0.40	0.50	1.30	100.0	0	12		M
Cr	4.31	4.03	3.33	2.05	1.60	2.20	14.80	100.0	0	12		M
Cu	24.42	11.95	21.76	1.68	9.90	19.30	43.60	100.0	0	12		M
Mn	22.07	12.05	19.40	1.73	9.00	16.50	46.30	100.0	0	12		M
Ni	2.99	2.31	2.38	2.05	0.80	1.70	8.60	100.0	0	12		M
Pb	15.33	6.51	14.32	1.45	8.80	12.10	30.20	100.0	0	12		M
V	0.71	1.01	0.49	2.97	0.00	0.30	3.50	100.0	0	12		M
Zn	110.16	136.38	64.23	2.81	19.30	47.60	477.10	100.0	0	12		M

SK0006R Starina Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Cd	0.65	0.29	0.60	1.48	0.40	0.50	1.30	83.0	0	10		M
Cr	2.11	1.39	1.87	1.58	1.20	1.60	5.90	83.0	0	10		M
Cu	5.30	1.83	5.05	1.39	3.20	4.30	8.70	83.0	0	10		M
Mn	5.64	2.51	5.10	1.62	2.50	5.00	9.70	83.0	0	10		M
Ni	6.42	7.46	3.13	3.65	0.70	1.30	20.90	83.0	0	10		M
Pb	15.92	9.61	13.60	1.81	5.00	11.60	33.40	83.0	0	10		M
V	0.67	0.66	0.44	2.72	0.10	0.30	1.90	83.0	0	10		M
Zn	92.72	22.37	90.27	1.27	62.50	84.70	131.60	83.0	0	10		M

Annex 3

Annual statistics for POPs in precipitation

BE0004R	Knokke	Belgium					
January 1999 - December 1999							
Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Precip	-	22.800	133.000	0	14		M
alpha_HCH	3.922	0.500	8.000	9	10	1	M
gamma_HCH	16.947	6.000	59.000	1	7	1	M
IE0002R	Turlough Hill	Ireland					
January 1999 - December 1999							
Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Precip	-	36.800	269.800	0	12		M
alpha_HCH	1.604	0.500	5.000	12	10	.1	M
gamma_HCH	5.210	0.500	25.500	12	12	1	M
IS0091R	Storhofdi	Iceland					
January 1999 - December 1999							
Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
alpha_HCH	0.243	0.120	0.484	0	24		W2
beta_HCH	0.006	0.000	0.026	19	24		W2
cis_CD	0.007	0.000	0.017	16	23		W2
HCB	0.016	0.008	0.033	0	23		W2
op_DDT	0.003	0.000	0.021	21	24		W2
pp_DDD	0.008	0.000	0.035	17	23		W2
pp_DDE	0.006	0.000	0.036	18	23		W2
pp_DDT	0.010	0.000	0.100	16	23		W2
trans_CD	0.000	0.000	0.003	23	23		W2
trans_NO	0.003	0.000	0.010	21	23		W2
PCB_101	0.017	0.000	0.065	8	23		W2
PCB_105	0.004	0.000	0.020	20	24		W2
PCB_118	0.019	0.000	0.071	6	23		W2
PCB_138	0.021	0.000	0.090	11	23		W2
PCB_153	0.020	0.000	0.084	11	23		W2
PCB_156	0.003	0.000	0.012	22	24		W2
PCB_180	0.013	0.000	0.058	15	23		W2
PCB_28	0.078	0.000	0.222	12	24		W2
PCB_31	0.079	0.000	0.188	10	24		W2
PCB_52	0.022	0.000	0.073	15	24		W2
Precip	-	10.000	52.000	0	24		W2
dieldrin	0.029	0.000	0.070	7	23		W2
gamma_HCH	0.121	0.000	0.718	6	24		W2
NL0091R							
January 1999 - December 1999							
Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
Precip	-	16.500	141.600	0	13		W4
gamma_HCH	14.315	5.000	60.000	2	13		W4
NO0099R	Lista	Norway					
January 1999 - December 1999							
Component	W. mean	Min	Max	Num bel	Num sampl	QA flag	Samp flag
HCB	0.695	0.150	3.500	0	53		W
Precip	-	0.000	40.400	0	365		D
alpha_HCH	3.674	0.450	27.700	0	53		W
gamma_HCH	6.174	0.360	25.400	0	53		W

Annex 4

Annual statistics for POPs in air

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
alpha_HCH	37.810	20.171	33.234	1.667	11.000	33.500	95.000	14.0	0	51		W
gamma_HCH	64.106	59.792	45.856	2.257	10.000	47.000	277.000	14.0	0	51		W
pp_DDD	2.612	1.823	2.131	1.873	1.200	1.200	10.000	13.7	25	50		W
pp_DDE	31.127	19.245	24.830	2.082	4.250	27.000	77.000	14.0	0	51		W
pp_DDT	9.878	6.137	7.934	2.013	3.300	9.000	25.000	13.7	17	50		W
PCB_101	9.870	3.319	9.260	1.472	2.000	10.000	21.000	14.0	0	51		W
PCB_118	3.592	1.506	3.272	1.602	0.600	4.000	10.000	14.0	1	51		W
PCB_138	9.515	2.917	8.938	1.517	1.000	9.000	18.000	14.0	0	51		W
PCB_153	12.261	3.340	11.703	1.415	2.000	12.000	23.000	14.0	0	51		W
PCB_180	6.337	2.692	5.799	1.558	1.000	6.000	15.000	14.0	0	51		W
PCB_28	13.693	5.556	12.624	1.512	5.000	12.000	29.000	14.0	0	51		W
PCB_52	16.716	9.630	14.337	1.753	5.000	13.000	46.000	14.0	0	51		W
acenaphthene	0.173	0.199	0.093	3.356	0.006	0.108	0.912	13.4	0	49		W
anthracene	0.145	0.152	0.080	3.307	0.005	0.085	0.646	14.0	0	51		W
benz_a_anthracene	0.304	0.401	0.121	4.469	0.013	0.137	1.568	13.7	0	50		W
benzo_a_pyrene	0.269	0.320	0.108	4.670	0.007	0.138	1.134	14.0	0	51		W
fluoranthene	1.925	1.865	1.176	2.888	0.169	1.346	7.588	14.0	0	51		W
fluorene	2.452	2.556	1.139	4.551	0.009	1.502	9.774	14.0	0	51		W
inden_123cd_pyrene	0.383	0.446	0.173	4.068	0.018	0.247	1.552	14.0	0	51		W
naphtalene	0.632	0.756	0.353	3.068	0.027	0.342	3.460	14.0	0	51		W
phenanthrene	5.467	4.605	3.524	2.844	0.216	3.899	16.250	14.0	0	51		W
pyrene	1.196	1.244	0.678	3.141	0.083	0.757	5.553	14.0	0	51		W

IS0091R Storhofdi Iceland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
HCB	5.94	3.34	5.35	1.56	2.82	4.54	16.94	98.9	0	24		W2
alpha_HCH	9.75	4.18	9.09	1.44	5.28	8.28	21.34	98.9	0	24		W2
beta_HCH	0.40	0.52	0.93	1.41	0.00	0.00	1.24	98.9	24	24		W2
cis_CD	0.88	0.29	0.83	1.40	0.41	0.90	1.54	98.9	0	24		W2
dieldrin	1.32	0.46	1.25	1.40	0.67	1.10	2.60	98.9	0	24		W2
gamma_HCH	4.05	2.74	2.82	3.32	0.00	3.99	10.82	98.9	6	24		W2
op_DDT	0.04	0.11	0.09	2.43	0.00	0.00	0.50	98.9	23	24		W2
pp_DDD	0.00	0.00	-	-	0.00	0.00	0.00	98.9	24	24		W2
pp_DDE	0.09	0.10	0.10	1.98	0.00	0.05	0.36	98.9	22	24		W2
pp_DDT	0.03	0.14	0.17	7.38	0.00	0.00	0.70	98.9	23	24		W2
trans_CD	0.28	0.29	0.55	1.15	0.00	0.00	0.72	98.9	12	24		W2
trans_NO	0.54	0.20	0.48	1.67	0.14	0.60	0.82	98.9	4	24		W2
PCB_101	0.267	0.292	0.234	2.953	0.000	0.100	0.871	98.9	13	24		W2
PCB_105	0.02	0.04	0.06	1.65	0.00	0.00	0.18	98.9	24	24		W2
PCB_118	0.095	0.205	0.113	3.082	0.000	0.000	0.700	98.9	21	24		W2
PCB_138	0.034	0.096	0.110	2.289	0.000	0.000	0.435	98.9	24	24		W2
PCB_153	0.063	0.104	0.111	2.150	0.000	0.000	0.400	98.9	23	24		W2
PCB_156	0.00	0.00	-	-	0.00	0.00	0.00	98.9	24	24		W2
PCB_180	0.041	0.110	0.078	2.365	0.000	0.000	0.522	98.9	23	24		W2
PCB_28	3.467	2.775	2.371	3.811	0.000	3.445	9.591	98.9	8	24		W2
PCB_31	1.690	1.873	1.456	3.171	0.000	0.680	6.334	98.9	14	24		W2
PCB_52	0.831	0.949	0.586	3.346	0.000	0.300	2.639	98.9	15	24		W2

NO0042G Zeppelin, Spitsbergen Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
alpha_HCH	31.96	7.37	30.06	1.28	14.40	31.10	53.40	30.4	0	52		W
HCB	87.92	16.11	86.52	1.18	61.80	84.70	162.00	30.4	0	52		W
cis_CD	0.81	0.19	0.78	1.28	0.38	0.77	1.32	30.4	0	52		W
cis_NO	0.08	0.06	0.06	1.95	0.01	0.07	0.44	30.4	0	52		W
gamma_HCH	10.85	5.00	9.43	1.75	2.19	10.50	27.00	30.4	0	52		W
op_DDD	0.06	0.05	0.04	2.12	0.01	0.04	0.27	29.3	0	52		W
op_DDE	0.12	0.08	0.09	2.21	0.02	0.09	0.30	29.3	0	52		W
op_DDT	0.43	0.28	0.37	1.70	0.13	0.35	1.60	29.3	0	52		W
pp_DDD	0.08	0.10	0.05	2.77	0.01	0.04	0.51	29.3	3	52		W
pp_DDE	0.79	0.53	0.62	2.00	0.16	0.59	2.11	29.3	0	52		W
pp_DDT	0.54	0.55	0.38	2.25	0.09	0.32	2.19	29.3	0	52		W
trans_CD	0.37	0.20	0.34	1.64	0.13	0.33	1.03	30.4	0	52		W
trans_NO	0.64	0.16	0.62	1.29	0.30	0.62	0.95	30.4	0	52		W
PCB_101	1.480	2.112	0.958	2.264	0.290	0.790	12.200	29.0	0	52		W
PCB_105	0.37	0.47	0.22	2.69	0.04	0.16	2.28	29.0	0	52		W
PCB_114	0.03	0.03	0.02	2.09	0.01	0.02	0.18	29.0	3	52		W
PCB_118	0.819	1.089	0.508	2.493	0.120	0.390	5.740	29.0	0	52		W
PCB_122	0.02	0.02	0.01	1.77	0.01	0.01	0.08	29.0	14	52		W
PCB_123	0.02	0.02	0.02	1.83	0.01	0.01	0.12	29.0	1	52		W
PCB_128	0.31	0.34	0.18	2.91	0.03	0.17	1.32	29.0	0	52		W
PCB_138	1.136	1.309	0.686	2.749	0.120	0.530	5.680	29.0	0	52		W
PCB_141	0.24	0.34	0.13	2.80	0.02	0.11	1.61	29.0	0	52		W
PCB_149	0.977	1.413	0.593	2.473	0.140	0.490	7.910	29.0	0	52		W
PCB_153	1.219	1.543	0.732	2.633	0.170	0.610	6.890	29.0	0	52		W
PCB_156	0.17	0.19	0.10	2.99	0.02	0.09	0.89	29.0	0	52		W
PCB_157	0.03	0.03	0.02	2.30	0.01	0.02	0.10	29.0	3	52		W
PCB_167	0.07	0.07	0.04	2.54	0.01	0.04	0.27	29.0	0	52		W
PCB_170	0.28	0.35	0.13	3.82	0.01	0.09	1.26	29.0	0	52		W
PCB_18	16.164	12.943	12.125	2.242	1.890	12.700	68.600	29.0	0	52		W
PCB_180	0.506	0.578	0.276	3.141	0.040	0.220	2.160	29.0	0	52		W
PCB_183	0.12	0.14	0.07	2.82	0.01	0.06	0.60	29.0	0	52		W
PCB_187	0.25	0.30	0.15	2.70	0.03	0.14	1.37	29.0	0	52		W
PCB_189	0.02	0.02	0.02	1.93	0.01	0.01	0.06	29.0	12	52		W
PCB_194	0.05	0.05	0.03	2.79	0.01	0.02	0.22	29.0	9	52		W
PCB_206	0.01	0.01	0.01	1.42	0.01	0.01	0.03	29.0	11	52		W
PCB_209	0.03	0.06	0.02	2.44	0.01	0.01	0.29	29.0	2	52		W
PCB_28	7.539	6.287	5.551	2.295	0.790	5.920	32.000	29.0	0	52		W
PCB_31	7.553	5.952	5.740	2.193	0.910	6.160	31.000	29.0	0	52		W
PCB_33	5.41	4.47	4.03	2.26	0.56	4.29	21.70	29.0	0	52		W
PCB_37	0.83	0.97	0.55	2.43	0.09	0.57	4.52	29.0	0	52		W
PCB_47	1.37	1.23	1.06	2.01	0.27	0.99	5.94	29.0	0	52		W
PCB_52	2.676	2.174	2.175	1.855	0.720	2.000	10.900	29.0	0	52		W
PCB_60	0.17	0.21	0.11	2.46	0.01	0.10	1.15	29.0	0	52		W
PCB_66	0.87	1.04	0.63	2.06	0.22	0.55	5.58	29.0	0	52		W
PCB_74	0.55	0.64	0.40	2.01	0.15	0.35	3.35	29.0	0	52		W
PCB_99	0.48	0.54	0.36	1.96	0.11	0.31	3.25	29.0	0	52		W
acenaphtene	0.01	0.01	0.01	2.40	0.00	0.01	0.07	27.7	0	50		W
acenaphtylene	0.00	0.00	0.00	2.87	0.00	0.00	0.01	27.7	0	50		W
anthanthrene	0.00	0.00	0.00	1.53	0.00	0.00	0.01	27.7	37	50		W
anthracene	0.01	0.01	0.00	2.54	0.00	0.00	0.03	27.7	4	50		W
benz_a_anthracene	0.00	0.01	0.00	4.12	0.00	0.00	0.03	27.7	1	50		W
benzo_a_pyrene	0.007	0.007	0.005	2.236	0.001	0.005	0.036	27.7	1	50		W
benzo_e_pyrene	0.01	0.01	0.00	3.54	0.00	0.00	0.03	27.1	7	49		W
benzo_ghi_perylene	0.01	0.01	0.00	3.06	0.00	0.00	0.03	27.7	20	50		W
biphenyl	1.00	1.55	0.38	4.66	0.00	0.33	8.45	27.7	0	50		W
chrysene triphenylene	0.01	0.01	0.01	3.14	0.00	0.00	0.06	27.7	0	50		W
N1methylphenanthrene	0.03	0.02	0.02	1.96	0.01	0.02	0.09	27.7	0	50		W
N2methylanthracene	0.00	0.01	0.00	2.85	0.00	0.00	0.04	27.7	0	50		W
N2methylphenanthrene	0.03	0.02	0.02	2.25	0.00	0.02	0.13	27.7	0	50		W
coronene	0.00	0.00	0.00	3.29	0.00	0.00	0.02	27.7	11	50		W
dibenzo_ac_ah_anthracenes	0.00	0.01	0.00	2.64	0.00	0.00	0.04	27.7	11	50		W
dibenzofuran	1.13	1.33	0.51	4.11	0.00	0.41	6.42	27.7	0	50		W
dibenzothiophene	0.03	0.02	0.02	2.53	0.00	0.02	0.11	27.7	0	50		W
fluoranthene	0.05	0.05	0.03	2.45	0.00	0.03	0.22	27.7	0	50		W
fluorene	0.37	0.44	0.18	3.49	0.00	0.13	1.98	27.7	0	50		W
inden_123cd_pyrene	0.01	0.01	0.00	4.28	0.00	0.00	0.04	27.7	10	50		W
naphtalene	0.99	1.14	0.48	3.57	0.01	0.39	3.86	27.7	0	50		W
perylene	0.00	0.00	0.00	1.75	0.00	0.00	0.00	27.7	33	50		W
phenanthrene	0.16	0.09	0.13	2.01	0.01	0.12	0.45	27.7	0	50		W
pyrene	0.03	0.03	0.02	2.18	0.00	0.02	0.14	27.7	0	50		W

NO0099R Lista Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
HCB	82.81	16.44	81.35	1.21	48.70	79.90	138.00	14.2	0	52		W
alpha_HCH	25.17	10.10	23.14	1.53	7.68	23.00	46.60	14.2	0	52		W
gamma_HCH	33.84	30.07	24.00	2.35	3.40	24.50	174.00	114.2	0	64		W

Annex 5

Monthly mean values for heavy metals in precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BE0004R arsenic (B)	0.513	0.240	0.240	0.240	-	0.240	0.240	0.240	0.240	0.240	0.240	-
BE0004R arsenic (WO)	1.591	2.546	2.421	2.565	2.509	2.520	3.400	3.400	3.329	3.317	3.400	2.405
BE0004R cadmium (WO)	0.236	0.120	0.114	0.110	-	0.255	0.072	0.189	0.402	0.110	0.240	0.458
BE0004R cadmium (B)	0.600	3.292	1.521	0.170	-	0.236	0.040	0.075	0.110	0.080	0.080	-
BE0004R chromium (WO)	1.858	3.999	3.743	3.300	-	2.911	3.400	3.400	3.329	3.317	3.400	2.547
BE0004R copper (B)	2.718	2.000	2.000	2.000	-	25.297	7.607	2.000	2.000	2.000	2.000	-
BE0004R copper (WO)	33.830	18.301	1.780	1.877	1.900	3.840	5.600	5.600	9.267	9.916	5.500	7.347
BE0004R lead (W)	4.519	4.044	4.248	4.650	-	6.092	2.291	3.215	4.810	5.200	5.200	-
BE0004R lead (D)	24.037	23.033	37.583	5.720	0.682	28.990	32.687	19.216	23.576	13.700	33.100	29.263
BE0004R mercury (WO)	0.034	0.040	0.040	0.040	-	0.030	0.030	0.030	0.030	0.030	0.030	0.021
BE0004R nickel (WO)	1.936	3.396	3.879	2.231	1.909	1.929	3.200	3.235	3.277	3.117	3.200	6.895
BE0004R zinc (WO)	28.249	37.759	49.825	55.900	-	33.148	19.146	11.655	12.554	7.100	11.200	30.999
CZ0001R cadmium	0.365	0.324	0.564	0.450	0.334	0.149	0.160	0.214	0.419	0.330	1.188	0.098
CZ0001R lead	6.199	5.192	5.867	4.478	5.803	4.159	3.100	3.046	8.910	3.602	25.160	3.238
CZ0001R manganese	5.466	4.369	8.464	12.944	15.599	7.127	2.400	9.336	14.121	15.818	29.084	2.773
CZ0001R nickel	1.449	1.317	1.361	1.863	1.531	0.721	0.900	0.420	2.149	1.919	11.739	2.566
CZ0003R cadmium (D)	0.187	1.480	1.369	-	0.300	0.335	0.303	0.261	0.113	0.869	0.199	0.250
CZ0003R cadmium (W)	0.613	0.107	0.288	0.454	0.416	0.167	0.237	0.160	0.094	0.270	0.953	0.152
CZ0003R lead (W)	2.800	8.078	7.410	5.853	4.885	3.751	1.837	2.257	3.089	5.995	8.880	4.130
CZ0003R lead (D)	3.033	3.401	5.409	-	3.663	4.139	1.754	11.931	4.159	9.477	0.564	0.400
CZ0003R manganese (D)	7.842	5.767	7.476	-	5.852	-	-	-	-	-	-	-
CZ0003R manganese (W)	7.858	5.108	9.974	42.100	9.431	5.779	4.661	16.593	3.243	3.830	23.538	13.323
CZ0003R nickel (D)	1.543	0.852	1.315	-	0.992	0.435	1.848	-	0.400	1.339	0.400	0.451
CZ0003R nickel (W)	4.304	0.815	2.155	4.120	10.552	1.075	1.974	1.307	0.629	3.500	6.707	8.114
DE0001R arsenic	0.108	0.176	0.079	0.094	0.172	0.072	0.107	0.080	0.100	0.128	0.159	0.107
DE0001R cadmium	0.074	0.112	0.068	0.059	0.075	0.055	0.068	0.054	0.051	0.044	0.087	0.029
DE0001R chromium	0.175	0.196	0.121	0.094	0.192	0.168	0.132	0.112	0.147	0.144	0.153	0.164
DE0001R cobalt	0.032	0.030	0.019	0.041	0.071	0.035	0.033	0.028	0.036	0.028	0.047	0.063
DE0001R copper	1.449	2.220	1.012	2.796	3.307	1.536	1.449	1.914	1.102	2.542	3.620	5.224
DE0001R iron	16.894	10.739	9.536	12.064	47.902	19.111	14.637	7.230	11.920	6.089	7.186	15.255
DE0001R lead	2.130	1.656	0.953	1.558	2.216	0.873	1.380	0.624	1.122	1.135	1.024	0.631
DE0001R manganese	1.323	1.332	0.989	1.866	4.801	1.510	2.084	1.626	1.527	1.175	1.020	2.056
DE0001R mercury	16.680	12.485	6.717	12.249	9.223	35.838	60.600	10.643	6.874	7.477	6.387	6.583
DE0001R nickel	1.215	0.866	0.661	1.233	1.535	0.673	1.142	1.230	0.490	0.483	1.484	0.816
DE0001R vanadium	0.656	0.501	0.472	0.416	0.866	0.430	1.455	0.492	0.364	0.412	0.408	0.230
DE0001R zinc	23.627	23.300	20.854	21.734	34.003	20.162	13.818	20.713	17.660	9.744	11.976	12.100
DE0002R arsenic	0.145	0.176	0.127	0.149	0.184	0.118	0.248	0.120	0.172	0.147	0.192	0.094
DE0002R cadmium	0.112	0.077	0.063	0.205	0.118	0.237	0.239	0.282	0.206	0.282	0.236	0.120
DE0002R chromium	0.208	0.231	0.179	0.419	0.745	0.325	1.196	0.409	0.543	0.362	0.311	0.194
DE0002R cobalt	0.050	0.038	0.041	0.080	0.078	0.095	0.218	0.082	0.136	0.144	0.067	0.052
DE0002R copper	3.046	2.030	1.460	2.822	2.327	4.159	4.643	2.553	3.669	3.044	1.983	1.584
DE0002R iron	30.233	29.398	31.069	75.391	82.159	154.387	154.387	54.017	148.056	62.546	45.010	24.875
DE0002R lead	2.550	2.214	1.672	1.769	1.789	2.645	3.758	8.796	3.068	2.539	1.835	1.497
DE0002R manganese	2.727	2.445	2.069	4.583	5.684	6.718	13.099	5.228	11.059	5.032	3.498	1.987
DE0002R nickel	1.562	0.389	0.488	1.318	1.501	1.071	3.730	5.530	4.037	0.697	0.964	1.862
DE0002R vanadium	0.804	0.809	0.331	0.716	0.758	0.539	1.151	0.622	0.727	0.682	0.787	0.356
DE0002R zinc	22.592	12.341	11.474	31.091	21.315	51.064	45.619	66.042	32.048	47.989	21.556	12.269
DE0004R arsenic	0.144	0.089	0.117	0.108	0.261	0.187	0.240	0.119	0.086	0.071	0.164	0.064

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
DE0004R cadmium	0.111	0.076	0.078	0.116	0.239	0.102	0.206	0.077	0.120	0.086	0.243	0.084	
DE0004R chromium	0.259	0.180	0.248	0.274	0.593	0.480	0.350	0.297	0.268	0.222	0.292	0.183	
DE0004R cobalt	0.084	0.028	0.052	0.032	0.166	0.047	0.194	0.113	0.038	0.048	0.047	0.027	
DE0004R copper	1.269	0.501	2.239	1.407	3.820	1.565	2.432	1.469	0.910	1.051	1.679	1.411	
DE0004R iron	60.322	27.605	41.368	32.788	80.068	88.708	162.878	115.841	52.888	48.877	61.169	25.294	
DE0004R lead	3.181	2.133	2.133	3.023	4.495	3.853	6.160	7.913	3.183	1.617	2.819	1.551	
DE0004R manganese	3.818	2.419	3.801	5.223	15.668	7.743	6.160	7.913	3.996	3.569	3.234	1.567	
DE0004R nickel	1.290	0.942	1.006	1.056	1.887	0.934	1.719	1.005	1.452	1.223	1.168	0.886	
DE0004R vanadium	0.614	0.410	0.366	0.421	0.900	0.677	0.848	0.590	0.320	0.317	0.498	0.245	
DE0004R zinc	32.068	33.216	28.632	37.160	60.353	29.368	47.341	27.984	21.102	27.919	38.021	24.134	
DE0009R arsenic	0.096	0.121	0.150	0.169	0.123	0.146	0.114	0.106	0.123	0.113	0.181	0.094	
DE0009R cadmium	0.101	0.052	0.059	0.047	0.034	0.031	0.034	0.022	0.077	0.079	0.049	0.030	
DE0009R chromium	0.120	0.237	0.171	0.112	0.099	0.118	0.124	0.182	0.172	0.122	0.042	0.069	
DE0009R cobalt	0.034	0.024	0.015	0.022	0.027	0.023	0.022	0.035	0.030	0.031	0.019	0.012	
DE0009R copper	1.400	4.752	8.701	1.730	1.554	1.379	0.820	1.254	3.110	2.803	5.484	3.782	
DE0009R iron	25.926	21.955	18.998	19.745	23.853	18.636	17.649	32.771	22.192	17.506	16.185	13.954	
DE0009R lead	2.144	1.753	2.432	0.800	0.982	0.942	0.984	1.123	1.284	1.119	1.141	0.686	
DE0009R manganese	1.652	1.408	0.722	1.931	1.934	2.177	1.985	2.634	3.296	2.184	3.451	2.096	
DE0009R mercury	12.021	11.038	8.294	14.717	19.828	11.738	12.981	8.516	11.806	18.416	15.632	7.574	
DE0009R nickel	0.537	0.606	0.539	0.587	0.425	0.663	0.639	0.747	1.864	1.635	2.234	0.970	
DE0009R vanadium	0.824	0.681	0.848	0.562	0.451	0.384	0.447	0.431	0.289	0.157	0.660	0.404	
DE0009R zinc	17.514	15.655	7.636	12.578	7.643	5.809	7.119	12.093	15.312	9.259	9.200	10.535	
DE0009R zinc	17.514	16.077	7.636	12.578	7.643	5.809	7.119	12.093	15.312	9.259	9.200	10.535	
DK0008R arsenic	-	-	0.080	0.083	0.142	0.034	0.310	0.157	0.752	0.383	0.629	0.250	
DK0008R cadmium	0.050	0.051	0.069	0.041	0.067	0.031	0.083	0.031	0.089	0.061	0.123	0.030	
DK0008R chromium	0.550	0.531	0.269	0.237	0.381	0.123	0.299	0.133	0.407	0.261	0.343	0.170	
DK0008R copper	1.451	2.748	1.750	-	-	3.230	3.064	1.230	2.029	1.038	1.587	0.350	
DK0008R iron	58.611	168.263	75.527	109.753	259.716	58.464	86.487	67.068	154.289	71.751	129.053	22.000	
DK0008R lead	1.662	2.282	3.272	2.921	3.755	1.312	2.505	0.694	2.649	1.635	2.755	0.680	
DK0008R nickel	0.334	0.507	0.457	0.329	0.540	0.430	0.471	0.322	0.467	0.335	0.728	0.130	
DK0008R zinc	6.263	17.394	9.056	12.553	24.942	10.165	19.689	9.047	12.980	12.174	27.948	8.000	
DK0031R arsenic	-	-	0.050	0.052	0.139	0.021	0.139	0.111	0.137	0.061	0.106	0.050	
DK0031R cadmium	0.088	0.021	0.040	0.030	0.052	0.020	0.049	0.030	0.030	0.020	0.038	0.010	
DK0031R chromium	0.155	0.000	0.050	0.056	0.339	0.061	0.169	0.149	0.127	0.040	0.060	0.060	
DK0031R copper	1.241	0.039	0.920	-	-	0.940	0.934	0.799	0.567	0.196	0.561	0.180	
DK0031R iron	26.000	26.211	31.422	56.132	153.118	25.335	57.724	51.563	42.036	13.096	19.212	22.000	
DK0031R lead	1.175	1.014	1.341	1.436	2.063	0.753	1.038	0.789	0.943	0.427	0.823	0.470	
DK0031R nickel	0.346	0.232	0.269	0.206	0.498	0.191	0.259	0.236	0.159	0.132	0.254	0.180	
DK0031R zinc	6.091	8.874	6.018	7.065	9.570	4.132	16.449	5.000	5.000	5.160	14.435	7.000	
EE0009R arsenic	0.273	0.584	0.600	-	-	-	-	-	-	-	-	-	
EE0009R cadmium	0.051	0.034	0.038	0.076	0.027	0.014	0.015	-	0.010	-	0.060	-	
EE0009R chromium	0.526	0.500	0.500	-	-	-	-	-	-	-	-	-	
EE0009R copper	3.706	3.857	7.914	5.962	4.821	2.188	4.080	-	3.700	-	3.100	-	
EE0009R lead	0.956	0.500	1.148	0.556	1.038	1.764	0.774	-	1.600	-	2.000	-	
EE0009R nickel	0.509	0.500	0.500	-	-	-	-	-	-	-	-	-	
EE0009R zinc	17.798	5.000	10.000	9.448	7.241	7.660	18.281	-	5.000	-	5.000	-	
EE0011R arsenic	0.532	-	-	-	-	-	-	-	-	-	-	-	
EE0011R cadmium	0.050	0.044	0.095	0.169	0.010	-	-	-	0.040	0.030	-	-	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
EE0011R chromium	0.500	-	-	-	-	-	-	-	-	-	-	-	
EE0011R copper	3.799	7.093	15.097	11.380	1.500	-	-	-	-	12.700	-	-	
EE0011R lead	0.500	0.500	0.500	0.572	1.600	-	-	-	3.200	0.500	-	-	
EE0011R nickel	0.703	-	-	-	-	-	-	-	-	-	-	-	
EE0011R zinc	33.431	48.080	74.082	17.918	5.000	-	-	-	20.000	20.000	-	-	
FI0009R cadmium	0.115	0.050	0.188	0.087	0.072	0.081	0.088	0.025	0.028	0.133	0.599	0.115	
FI0009R copper	1.210	1.670	19.100	7.680	2.960	1.780	1.230	0.560	0.580	2.620	8.580	2.380	
FI0009R iron	17.960	31.500	104.920	89.550	302.580	168.300	158.810	120.700	90.820	30.700	164.080	27.070	
FI0009R lead	4.950	1.550	7.000	3.250	3.030	2.550	2.250	2.910	1.160	5.350	27.630	3.350	
FI0009R manganese	0.930	1.020	4.680	12.860	12.630	6.970	5.590	2.910	3.060	3.170	11.750	1.460	
FI0009R nickel	0.550	0.760	1.670	0.500	0.800	0.400	0.350	0.430	0.250	0.570	2.870	0.400	
FI0009R vanadium	1.370	1.140	2.780	0.990	1.400	0.850	0.770	0.630	0.550	1.370	6.080	0.950	
FI0009R zinc	8.000	8.500	22.740	9.930	7.330	7.670	9.660	2.920	3.660	9.800	42.370	9.400	
FI0017R arsenic	0.511	0.240	1.293	0.289	0.239	0.239	0.199	0.164	0.224	0.275	0.390	0.372	
FI0017R cadmium	0.081	0.042	0.912	0.086	0.054	0.151	0.043	0.055	0.040	0.067	0.099	0.202	
FI0017R chromium	0.200	0.180	0.940	0.190	0.260	0.380	0.270	1.010	2.310	0.100	0.200	0.170	
FI0017R copper	0.800	0.650	3.300	1.290	1.670	2.240	1.700	1.010	2.310	0.640	1.320	0.910	
FI0017R iron	39.050	32.840	174.380	31.480	114.490	208.950	161.830	80.570	115.730	19.160	45.280	40.230	
FI0017R lead	3.080	1.410	12.500	2.400	2.110	3.030	1.580	1.300	1.070	2.850	2.880	2.960	
FI0017R manganese	1.500	1.340	10.480	8.730	6.300	14.220	8.640	3.160	6.760	2.180	2.000	2.060	
FI0017R nickel	0.500	0.440	1.920	0.450	0.590	0.540	0.500	0.320	0.340	0.290	0.500	0.430	
FI0017R vanadium	1.390	1.130	5.450	0.810	0.710	0.800	0.660	0.540	0.560	0.560	1.320	1.020	
FI0017R zinc	6.550	3.670	25.170	6.480	8.680	10.570	6.380	4.700	8.940	4.540	7.270	7.220	
FI0036R arsenic	0.123	0.100	0.226	0.266	0.236	0.103	0.076	0.045	0.080	0.061	0.042	0.079	
FI0036R cadmium	0.026	0.027	0.037	0.069	0.094	0.022	0.019	0.010	0.020	0.012	0.013	0.013	
FI0036R chromium	0.110	0.360	0.090	0.180	0.150	0.120	0.040	0.110	0.060	0.030	0.050	0.030	
FI0036R copper	0.470	2.590	1.050	0.630	2.390	0.820	0.410	1.250	0.520	0.400	0.350	0.380	
FI0036R iron	0.750	3.840	3.090	14.610	16.330	15.770	6.980	7.790	7.020	4.850	0.750	2.880	
FI0036R lead	0.870	2.150	1.250	2.290	2.280	0.700	0.280	0.250	0.790	0.450	0.370	0.770	
FI0036R manganese	0.260	0.380	0.610	3.030	1.750	2.310	1.180	1.250	2.290	0.520	0.240	0.250	
FI0036R nickel	0.150	0.560	0.250	0.240	0.500	0.210	0.080	0.120	0.120	0.190	0.110	0.160	
FI0036R vanadium	0.310	0.250	0.510	0.600	0.480	0.260	0.120	0.160	0.190	0.170	0.120	0.170	
FI0036R zinc	3.820	4.950	2.880	3.730	5.700	1.770	2.490	1.290	6.290	1.120	1.030	1.140	
FI0053R arsenic	0.125	0.215	0.579	0.633	0.166	0.119	0.067	0.116	0.087	-	0.132	0.152	
FI0053R cadmium	0.028	0.037	0.249	0.290	0.088	0.030	0.185	0.039	0.036	-	0.027	0.035	
FI0053R chromium	0.020	0.180	0.320	0.790	0.120	0.220	0.090	0.110	0.110	-	0.280	0.030	
FI0053R copper	0.470	1.470	2.290	3.950	2.360	0.890	0.670	1.230	0.820	-	1.510	0.780	
FI0053R iron	14.410	43.150	42.770	152.410	37.030	32.950	21.740	14.380	42.740	-	-	5.860	
FI0053R lead	1.450	1.340	6.480	8.320	2.220	1.140	2.850	1.100	0.900	-	-	0.720	
FI0053R manganese	2.510	4.460	5.130	33.950	5.590	3.280	2.520	10.410	4.020	-	5.610	0.970	
FI0053R nickel	0.240	0.280	0.740	1.450	0.720	0.320	0.140	0.200	0.230	-	0.280	0.250	
FI0053R vanadium	0.820	1.480	2.050	2.660	0.690	0.550	0.250	0.270	0.740	-	0.850	0.410	
FI0053R zinc	4.210	4.610	16.570	22.750	6.520	3.370	2.020	33.810	4.160	-	3.820	1.860	
FI0092R arsenic	0.119	0.164	0.463	2.162	0.111	0.066	0.057	0.088	0.160	0.084	0.087	0.083	
FI0092R cadmium	0.033	0.058	0.115	0.777	0.043	0.036	0.025	0.015	0.044	0.037	0.023	0.036	
FI0092R chromium	0.110	0.130	0.320	1.680	0.120	0.100	0.070	0.130	0.120	0.010	0.020	0.010	
FI0092R copper	0.130	0.730	1.370	10.340	0.580	0.680	0.550	0.510	1.300	0.390	0.390	0.360	
FI0092R iron	1.910	4.910	37.940	398.980	28.890	22.370	15.700	24.990	29.960	5.780	3.540	3.440	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
FI0092R lead	1.150	1.250	3.690	25.020	1.320	0.820	0.910	0.550	1.550	0.920	0.860	0.790	
FI0092R manganese	0.320	0.580	3.390	89.800	3.550	3.750	1.690	1.780	2.230	0.880	0.470	0.320	
FI0092R nickel	0.190	0.250	0.250	3.160	0.240	0.170	0.150	0.220	0.230	0.520	0.170	0.120	
FI0092R vanadium	0.480	0.660	1.260	6.140	0.550	0.250	0.170	0.280	0.410	0.300	0.320	0.300	
FI0092R zinc	1.890	2.530	8.100	59.160	3.260	2.580	3.180	1.790	3.790	2.030	1.890	2.020	
FI0093R arsenic	0.270	0.088	0.218	0.310	0.179	0.540	0.060	0.095	0.148	0.141	0.192	0.084	
FI0093R cadmium	0.044	0.016	0.065	0.097	0.050	0.125	0.012	0.019	0.032	0.036	0.083	0.027	
FI0093R chromium	0.160	0.060	0.180	0.250	0.180	0.280	0.130	0.100	0.110	0.070	0.060	0.010	
FI0093R copper	0.750	0.190	1.110	1.180	0.970	1.590	0.610	0.760	1.880	0.350	1.250	0.310	
FI0093R iron	3.350	5.030	17.830	38.480	86.550	73.860	33.700	13.150	25.960	8.540	16.560	5.390	
FI0093R lead	2.100	0.600	1.950	1.840	1.950	2.690	0.630	0.680	1.010	1.490	1.680	0.870	
FI0093R manganese	0.650	0.680	1.940	23.310	5.340	10.560	3.450	1.210	3.190	1.640	2.000	0.610	
FI0093R nickel	0.250	0.140	0.370	0.380	0.310	0.520	0.260	0.150	0.290	0.230	0.310	0.130	
FI0093R vanadium	0.600	0.390	0.970	0.630	0.560	0.010	0.320	0.220	0.340	0.280	0.680	0.260	
FI0093R zinc	3.660	1.530	5.270	8.680	4.780	7.360	3.230	2.440	61.310	2.990	6.380	2.060	
FI0094R arsenic	0.102	0.164	0.250	0.610	0.356	0.060	0.063	0.049	0.096	0.085	0.058	0.151	
FI0094R cadmium	0.017	0.025	0.075	0.218	0.040	0.009	0.007	0.005	0.027	0.021	0.010	0.025	
FI0094R chromium	0.050	0.040	0.130	0.670	0.130	0.090	0.090	0.080	0.090	0.010	0.010	0.010	
FI0094R copper	0.310	0.650	2.170	8.980	1.260	0.480	0.480	0.440	1.110	0.520	0.610	0.620	
FI0094R iron	0.750	2.170	10.860	109.400	19.550	15.280	9.070	8.120	13.860	4.950	3.440	0.750	
FI0094R lead	0.640	0.960	2.200	8.010	1.130	0.370	0.420	0.270	1.280	0.820	0.470	0.590	
FI0094R manganese	0.220	0.540	1.240	23.790	2.890	1.470	0.760	0.550	1.480	0.630	0.330	0.180	
FI0094R nickel	0.160	0.120	0.280	1.040	0.410	0.190	0.130	0.100	0.220	0.150	0.130	0.150	
FI0094R vanadium	0.370	0.380	0.670	1.900	0.560	0.190	0.120	0.100	0.300	0.170	0.200	0.330	
FI0094R zinc	1.100	1.390	4.250	18.270	5.100	1.150	1.770	0.660	3.210	1.410	0.980	1.250	
FI0095R arsenic	0.230	0.157	0.246	0.771	0.502	0.179	0.041	0.045	0.052	0.059	0.092	0.102	
FI0095R cadmium	0.018	0.019	0.026	0.185	0.046	0.027	0.004	0.005	0.006	0.005	0.010	0.019	
FI0095R chromium	0.110	0.040	0.160	1.020	0.220	0.170	0.100	0.090	0.090	0.010	0.080	0.340	
FI0095R copper	1.820	1.600	1.400	6.660	7.040	0.900	0.450	0.380	1.310	0.320	0.920	1.040	
FI0095R iron	3.550	0.750	6.150	68.190	26.940	12.670	7.500	3.370	8.220	0.750	5.270	8.670	
FI0095R lead	0.560	0.620	0.780	5.940	0.850	0.940	0.200	0.160	0.210	0.220	0.350	2.560	
FI0095R manganese	0.230	0.520	0.460	7.730	2.290	1.090	0.500	0.210	0.580	0.200	0.230	0.240	
FI0095R nickel	0.810	0.220	0.670	3.050	1.110	0.520	0.180	0.140	0.110	0.170	0.310	0.540	
FI0095R vanadium	0.470	0.260	0.460	1.580	0.390	0.000	0.060	0.040	0.070	0.070	0.110	0.230	
FI0095R zinc	1.860	1.540	1.950	18.260	3.730	2.150	0.860	0.740	1.520	0.350	0.820	1.110	
FI0096R mercury	2.400	3.300	4.900	5.800	4.500	7.100	7.600	4.900	3.600	3.200	2.300	3.300	
FR0090R arsenic	0.260	0.170	0.160	0.050	0.110	0.140	0.430	0.040	0.020	0.040	0.100	0.030	
FR0090R cadmium	0.020	0.010	0.020	0.010	0.070	0.030	0.040	0.020	0.010	0.030	0.040	0.010	
FR0090R chromium	0.170	0.130	0.190	0.100	0.190	0.270	0.300	0.110	0.090	0.060	0.430	0.190	
FR0090R copper	0.830	0.920	1.490	0.490	3.030	1.870	1.600	0.980	0.520	0.900	1.050	0.740	
FR0090R lead	1.130	1.020	1.550	0.570	10.710	3.570	3.000	1.630	1.000	0.660	4.660	2.020	
FR0090R nickel	0.390	0.310	0.360	0.260	0.550	0.730	0.700	0.320	0.230	0.460	0.320	0.100	
FR0090R zinc	1.730	1.780	3.110	1.570	15.680	4.900	5.900	1.700	1.220	1.990	5.850	1.380	
GB0014R arsenic	0.250	0.187	0.179	0.130	0.276	0.773	0.200	0.072	0.284	0.200	0.200	0.200	
GB0014R cadmium	0.060	0.060	0.079	0.040	0.272	0.046	0.040	0.030	0.061	0.080	0.061	0.050	
GB0014R chromium	0.090	0.907	0.164	0.050	0.050	0.003	0.200	0.101	0.208	0.320	0.207	0.200	
GB0014R copper	1.900	1.990	1.125	1.900	3.273	2.906	2.000	0.469	1.177	0.850	0.784	0.660	
GB0014R lead	2.800	2.261	3.071	1.900	4.304	2.356	2.400	1.017	3.322	2.200	2.200	1.900	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
GB0014R nickel	0.260	0.359	0.271	0.190	0.971	0.397	0.460	0.104	0.357	0.310	0.329	0.200	
GB0014R zinc	4.700	3.992	4.388	4.300	7.133	1.029	8.800	8.800	8.574	5.300	4.639	6.800	
GB0090R arsenic	0.094	0.120	0.245	0.250	0.141	0.137	0.100	0.091	0.100	0.169	0.141	0.090	
GB0090R cadmium	0.023	0.030	0.068	0.075	0.141	0.040	0.040	0.031	0.040	0.063	0.054	0.021	
GB0090R chromium	0.166	0.370	0.322	0.461	2.308	0.480	0.480	0.101	0.100	0.100	0.173	0.200	
GB0090R copper	0.682	0.840	1.954	2.058	2.753	1.136	1.600	1.844	0.900	1.084	1.155	2.364	
GB0090R lead	1.305	1.700	2.468	2.668	4.797	1.400	1.400	1.518	1.900	2.084	1.355	2.361	
GB0090R nickel	0.227	0.280	0.462	0.497	0.849	0.398	0.500	0.300	0.200	0.251	0.361	0.341	
GB0090R zinc	2.877	3.600	6.865	7.000	3.600	4.351	14.000	4.820	4.100	6.169	5.620	5.569	
GB0091R arsenic	0.063	0.080	0.088	0.074	0.260	0.260	0.071	0.101	0.200	0.050	0.050	0.032	
GB0091R cadmium	0.032	0.040	0.040	0.055	0.095	0.036	0.040	0.041	0.050	0.120	0.101	0.029	
GB0091R chromium	0.313	0.180	0.180	0.147	0.002	0.002	0.059	0.100	0.100	0.410	0.410	0.064	
GB0091R copper	4.674	1.100	1.181	0.662	3.400	3.400	0.905	0.961	0.600	0.700	0.700	0.345	
GB0091R lead	0.817	1.100	0.850	1.142	3.000	0.707	0.737	0.922	1.500	0.320	0.311	0.390	
GB0091R nickel	0.145	0.170	0.792	0.153	0.710	0.653	0.223	0.200	0.200	0.294	0.211	0.211	
GB0091R zinc	2.349	2.100	1.939	3.133	4.600	1.014	2.723	5.184	4.100	3.900	3.617	3.600	
IE0001R aluminium	18.100	-	29.800	20.000	70.700	69.300	26.400	18.500	6.900	23.500	8.500	8.300	
IE0001R arsenic	0.250	-	0.600	0.250	0.250	0.600	0.600	0.600	0.250	0.250	0.250	0.250	
IE0001R cadmium	0.025	-	0.070	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	
IE0001R chromium	0.250	-	0.250	0.250	0.250	0.600	0.250	0.250	0.250	0.250	0.250	0.250	
IE0001R copper	0.250	-	0.800	0.600	2.000	1.100	1.300	1.100	0.600	0.250	1.400	0.500	
IE0001R lead	0.250	-	0.600	0.250	0.900	0.250	0.250	0.250	0.250	0.250	0.250	0.250	
IE0001R manganese	0.250	-	1.400	1.800	5.200	3.500	3.400	2.000	0.800	0.600	0.600	0.900	
IE0001R nickel	0.500	-	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	
IE0001R vanadium	5.000	-	1.300	1.000	1.300	1.200	1.200	1.100	1.000	0.250	0.250	0.250	
IE0001R zinc	6.000	-	11.300	10.100	16.400	11.700	7.900	8.300	7.200	5.400	23.300	38.300	
IE0002R aluminium	12.400	-	-	11.300	30.100	43.500	51.600	34.500	12.700	27.500	11.500	9.600	
IE0002R arsenic	0.250	-	-	0.250	0.250	0.600	0.600	0.600	0.250	0.250	0.250	0.000	
IE0002R cadmium	0.025	-	-	0.025	0.070	0.025	0.090	0.130	0.025	0.060	0.025	0.025	
IE0002R chromium	0.250	-	-	0.250	0.250	0.250	0.500	0.250	0.250	0.250	0.250	0.250	
IE0002R copper	0.250	-	-	1.000	1.100	1.300	1.700	1.400	0.700	0.800	0.500	1.100	
IE0002R lead	0.250	-	-	0.700	1.000	0.900	1.100	1.400	0.250	0.900	0.250	0.250	
IE0002R manganese	2.700	-	-	1.400	3.300	2.400	3.400	5.100	1.300	2.200	0.800	0.700	
IE0002R nickel	0.500	-	-	0.250	0.250	0.250	0.600	0.500	0.250	0.250	0.250	0.250	
IE0002R vanadium	5.000	-	-	1.100	1.300	1.400	1.400	1.500	1.100	0.500	0.250	0.250	
IE0002R zinc	2.600	-	-	4.800	6.200	4.700	5.700	7.300	4.100	5.700	2.800	3.600	
IS0002R aluminium	199.100	-	-	-	43.497	98.760	192.527	81.154	65.239	210.933	52.037	25.796	
IS0002R arsenic	0.013	-	-	-	0.061	0.057	0.027	0.031	0.029	0.025	0.047	0.025	
IS0002R cadmium	0.196	-	-	-	0.011	0.005	0.008	0.005	0.024	0.009	0.005	0.015	
IS0002R chromium	0.700	-	-	-	0.050	0.058	0.055	0.050	0.050	0.395	0.050	0.050	
IS0002R copper	12.200	-	-	-	2.930	1.174	0.809	1.198	1.056	1.112	0.551	0.771	
IS0002R iron	230.100	-	-	-	38.597	106.050	318.754	77.748	84.451	394.706	31.304	39.078	
IS0002R lead	3.130	-	-	-	4.033	1.189	0.549	0.735	0.725	0.427	0.425	0.568	
IS0002R manganese	3.800	-	-	-	1.845	3.726	7.046	2.861	1.894	7.067	2.707	0.917	
IS0002R nickel	0.300	-	-	-	0.330	0.101	0.213	0.364	0.147	0.399	0.054	0.058	
IS0002R vanadium	0.900	-	-	-	0.144	0.272	0.577	0.222	0.228	0.832	0.228	0.148	
IS0002R zinc	57.000	-	-	-	7.870	7.208	5.098	5.256	6.088	12.000	6.838	41.899	
IS0090R aluminium	-	-	587.822	647.071	249.013	62.354	81.390	119.876	171.996	98.588	286.171	215.671	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
IS0090R arsenic	-	-	0.123	0.150	0.058	0.104	0.025	0.035	0.025	0.027	0.054	0.027	
IS0090R cadmium	-	-	0.024	0.024	0.011	0.006	0.006	0.012	0.005	0.006	0.007	0.007	
IS0090R chromium	-	-	0.756	1.178	0.298	0.054	0.284	0.086	0.277	0.445	0.730	0.609	
IS0090R copper	-	-	6.828	6.713	2.409	1.248	1.059	1.426	1.740	1.458	3.162	4.636	
IS0090R iron	-	-	694.497	677.394	302.733	42.841	108.106	102.165	142.222	91.239	289.677	159.508	
IS0090R lead	-	-	0.853	1.447	0.780	0.618	0.594	0.808	0.613	0.316	0.682	1.908	
IS0090R manganese	-	-	16.874	16.835	8.664	2.036	3.629	2.499	2.642	1.782	7.395	3.031	
IS0090R nickel	-	-	2.684	9.087	1.148	0.466	0.341	0.370	0.131	0.308	0.315	0.212	
IS0090R vanadium	-	-	0.500	0.650	0.528	0.101	0.326	0.301	0.495	0.365	0.893	0.594	
IS0090R zinc	-	-	18.248	22.986	7.655	10.123	5.759	7.269	5.637	23.461	9.789	2.887	
IT0015R cadmium	0.127	0.126	0.189	0.132	0.077	0.046	0.064	0.077	0.134	0.174	0.365	0.038	
IT0015R copper	2.292	3.171	3.199	0.825	0.950	0.445	1.312	0.309	1.145	1.296	1.652	0.766	
IT0015R lead	3.668	4.400	8.097	9.672	5.170	1.642	2.507	1.149	3.167	2.020	14.575	1.569	
IT0015R zinc	10.931	24.904	28.035	9.207	10.041	6.828	14.138	6.156	5.800	10.145	32.746	12.097	
IV0010R cadmium	0.100	0.150	-	0.190	0.150	0.230	0.050	0.100	0.570	0.050	0.290	0.220	
IV0010R copper	0.600	0.700	-	2.300	4.900	2.500	0.800	1.500	3.400	0.700	1.700	1.600	
IV0010R lead	2.000	3.200	-	0.200	4.200	1.700	1.100	2.700	2.100	1.100	7.000	3.800	
IV0010R zinc	11.300	10.100	-	14.400	30.900	16.200	9.400	12.200	30.500	6.500	28.400	21.600	
NL0009R arsenic	0.225	0.225	0.225	0.225	0.547	0.362	0.225	0.225	0.495	0.478	0.225	-	
NL0009R cadmium	0.381	0.206	0.080	0.107	0.090	0.064	0.099	0.069	0.170	0.097	0.106	-	
NL0009R chromium	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	-	
NL0009R copper	1.230	1.309	1.701	1.950	2.001	1.647	4.421	1.412	4.717	0.764	0.640	-	
NL0009R lead	1.222	1.395	1.556	1.954	1.882	1.584	1.747	1.271	2.261	2.129	1.240	-	
NL0009R nickel	0.459	0.205	0.308	0.336	0.205	0.205	0.205	0.205	0.782	0.503	0.205	-	
NL0009R zinc	20.509	11.972	7.585	10.071	9.969	7.831	8.673	5.127	11.322	7.533	6.200	-	
NL0091R arsenic	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	-	
NL0091R cadmium	0.083	0.043	0.028	0.081	0.091	0.033	0.026	0.017	0.057	0.040	0.097	-	
NL0091R chromium	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	-	
NL0091R copper	1.174	1.134	1.479	2.671	2.512	1.254	1.819	1.027	1.215	1.054	2.280	-	
NL0091R lead	2.049	2.585	2.446	3.771	4.607	2.828	2.376	2.207	2.825	1.641	4.020	-	
NL0091R mercury	8.351	8.679	11.857	13.862	22.961	12.641	16.637	13.076	13.414	10.266	8.072	7.103	
NL0091R nickel	0.589	0.331	0.205	0.336	0.705	0.358	0.302	0.450	0.217	0.225	0.420	-	
NL0091R zinc	4.708	6.163	6.525	11.805	12.945	6.489	5.990	4.661	5.458	2.289	8.600	-	
NO0001R cadmium	0.036	0.007	0.047	0.018	0.023	0.023	0.037	0.015	0.061	0.073	0.105	0.025	
NO0001R lead	1.017	0.349	2.027	0.499	1.098	1.026	0.932	0.956	2.719	2.162	3.231	0.749	
NO0001R precipitation_amount	230.527	100.764	162.803	80.669	82.803	214.239	40.319	202.452	243.153	133.471	125.033	211.879	
NO0001R zinc	3.945	2.554	5.281	2.449	3.799	3.082	3.391	4.391	4.578	4.349	13.720	1.797	
NO0039R cadmium	0.003	0.004	0.003	0.019	0.043	0.005	0.039	0.028	0.041	0.033	0.008	0.007	
NO0039R lead	0.045	0.083	0.056	0.450	0.283	0.241	0.203	0.219	0.565	0.151	0.130	0.094	
NO0039R precipitation_amount	59.299	183.917	59.523	138.217	54.810	99.108	190.510	50.160	60.892	121.338	152.931	144.987	
NO0039R zinc	1.440	0.985	1.898	2.080	3.274	2.825	4.587	1.607	1.787	0.929	2.343	0.283	
NO0041R cadmium	0.014	0.030	0.074	0.018	0.054	0.024	0.046	0.080	0.073	0.042	0.027	0.035	
NO0041R lead	0.502	1.852	2.384	0.541	1.886	1.476	0.816	0.738	0.997	0.586	0.810	0.271	
NO0041R precipitation_amount	73.790	39.587	65.477	37.611	33.216	49.363	75.923	27.484	99.203	56.466	42.802	84.459	
NO0041R zinc	5.948	5.061	20.876	12.385	10.536	7.354	3.884	6.757	4.559	3.561	7.339	1.903	
NO0047R arsenic	2.465	2.623	6.339	20.974	3.293	3.903	2.306	0.275	0.550	0.445	0.470	0.771	
NO0047R cadmium	0.137	0.170	0.368	0.783	0.110	0.138	0.117	0.020	0.116	0.032	0.026	0.082	
NO0047R chromium	0.135	0.587	3.816	3.079	1.548	0.497	0.273	0.109	0.132	0.100	0.103	0.212	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
NO0047R cobalt	0.282	0.694	3.239	6.591	0.746	0.465	0.474	0.067	0.201	0.162	0.186	0.182	
NO0047R copper	22.592	32.713	126.267	304.027	32.330	18.739	15.335	2.251	5.854	3.702	6.426	9.017	
NO0047R lead	1.492	1.542	4.184	9.964	1.205	1.424	1.320	0.238	0.703	0.334	0.481	0.602	
NO0047R nickel	7.967	21.930	100.921	240.621	25.886	13.977	13.083	1.552	4.961	4.176	5.932	4.891	
NO0047R precipitation_amount	10.764	10.159	10.567	10.701	13.854	16.179	86.751	151.178	19.236	86.115	18.567	16.020	
NO0047R zinc	11.708	20.760	12.766	34.048	10.487	11.678	7.600	6.589	26.844	5.309	3.280	4.269	
NO0055R cadmium	0.033	0.023	0.034	0.082	0.105	0.034	0.005	0.007	0.029	0.037	0.020	0.063	
NO0055R lead	0.536	0.322	0.756	1.697	2.070	0.737	0.242	0.206	0.553	0.294	0.298	0.513	
NO0055R precipitation_amount	14.014	22.734	25.709	14.522	6.624	55.383	65.256	121.337	20.095	56.814	22.230	15.637	
NO0055R zinc	2.900	0.871	3.557	9.966	31.397	5.920	16.272	1.490	5.981	3.703	4.379	3.329	
NO0056R cadmium	0.029	0.013	0.041	0.022	0.094	0.028	0.031	0.019	0.031	0.024	0.089	0.028	
NO0056R lead	1.251	0.327	1.111	0.444	2.291	1.203	1.194	1.536	1.770	1.259	1.631	0.529	
NO0056R precipitation_amount	112.930	50.191	122.289	85.573	7.134	117.261	48.759	35.008	206.604	90.585	40.064	121.608	
NO0056R zinc	4.567	4.548	6.354	5.017	16.721	3.477	3.001	5.131	11.013	5.581	11.736	2.964	
NO0092R arsenic	0.050	0.128	0.055	0.114	0.148	0.201	0.050	0.050	0.050	0.079	0.050	0.057	
NO0092R cadmium	0.012	0.051	0.049	0.020	0.005	0.008	0.016	0.003	0.005	0.011	0.004	0.002	
NO0092R chromium	0.100	0.422	0.120	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.253	
NO0092R cobalt	0.006	0.029	0.008	0.013	0.011	0.013	0.005	0.006	0.005	0.008	0.006	0.006	
NO0092R copper	0.280	0.785	0.660	0.517	0.478	0.259	0.369	0.191	0.288	0.401	0.130	0.418	
NO0092R iron	5.000	28.486	8.901	8.160	12.746	11.606	5.000	5.000	5.000	5.000	6.974	27.170	
NO0092R lead	0.314	1.090	0.655	0.568	0.352	0.330	0.425	0.274	1.805	1.010	0.133	0.246	
NO0092R manganese	1.812	3.289	1.096	1.337	1.492	2.806	1.543	0.400	2.180	0.297	0.470	0.898	
NO0092R nickel	0.224	0.473	0.330	0.190	0.100	0.102	0.100	0.106	0.100	0.115	0.110	0.161	
NO0092R precipitation_amount	45.128	25.013	32.038	59.682	31.369	69.872	132.134	73.503	63.217	79.076	115.797	55.350	
NO0092R vanadium	0.050	0.198	0.061	0.091	0.050	0.079	0.075	0.051	0.091	0.050	0.054	0.119	
NO0092R zinc	15.396	28.767	40.339	4.912	1.966	2.121	2.826	1.481	1.735	2.918	1.492	3.808	
NO0093R arsenic	0.064	0.052	0.082	0.063	0.154	0.113	0.050	0.099	0.060	0.070	0.050	0.050	
NO0093R cadmium	0.085	0.066	0.175	0.077	0.184	0.108	0.061	0.036	0.045	0.086	0.319	0.046	
NO0093R chromium	0.646	0.154	1.486	0.154	0.317	0.100	0.128	0.461	0.124	0.119	0.100	1.023	
NO0093R cobalt	0.087	0.027	0.034	0.013	0.046	0.013	0.014	0.025	0.009	0.019	0.019	0.012	
NO0093R copper	1.993	0.745	2.865	0.530	2.317	0.772	0.408	1.262	0.502	1.417	0.871	0.552	
NO0093R iron	18.635	51.490	37.133	9.269	20.958	5.000	5.000	11.382	5.000	5.000	5.000	5.197	
NO0093R lead	0.391	0.210	1.444	0.543	1.070	0.814	0.774	0.735	0.627	0.355	0.596	0.402	
NO0093R manganese	0.729	4.718	2.204	1.512	3.792	4.126	2.476	2.634	1.244	1.047	1.013	0.283	
NO0093R nickel	2.619	0.732	0.498	0.262	0.461	0.113	0.190	0.240	0.212	0.246	0.227	0.292	
NO0093R precipitation_amount	56.434	34.999	53.854	30.796	41.370	129.969	53.948	40.064	88.534	57.071	35.986	48.216	
NO0093R vanadium	0.096	0.054	0.189	0.105	0.195	0.150	0.194	0.243	0.169	0.073	0.180	0.089	
NO0093R zinc	22.335	16.553	13.735	8.791	18.769	5.425	7.024	9.061	4.392	9.809	7.295	4.613	
NO0094R arsenic	0.108	0.065	0.094	0.050	0.080	0.052	0.053	0.129	0.130	0.070	0.096	0.050	
NO0094R cadmium	0.167	0.014	0.024	0.070	0.043	0.016	0.016	0.056	0.061	0.070	0.019	0.011	
NO0094R chromium	0.153	0.100	0.274	0.250	0.100	0.100	0.100	0.100	0.126	0.112	0.104	0.100	
NO0094R cobalt	0.043	0.005	0.018	0.018	0.022	0.005	0.006	0.012	0.021	0.040	0.007	0.007	
NO0094R copper	7.217	0.910	0.593	3.132	1.185	1.187	0.584	2.001	1.864	2.474	0.584	2.760	
NO0094R iron	8.620	5.000	10.344	5.000	5.000	5.000	5.000	5.000	6.467	8.796	5.685	5.000	
NO0094R lead	2.618	1.312	0.880	0.866	1.093	0.523	0.863	0.841	1.142	1.076	1.610	1.467	
NO0094R manganese	0.856	0.982	0.900	1.095	2.350	0.759	0.915	2.599	1.927	1.885	0.689	2.442	
NO0094R nickel	1.048	0.100	0.188	0.464	0.140	0.100	0.136	0.460	0.423	0.566	0.168	0.122	
NO0094R precipitation_amount	33.248	35.572	55.128	15.765	16.019	135.542	60.478	40.893	146.083	37.006	50.000	73.057	

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NO0094R vanadium	0.113	0.150	0.164	0.083	0.243	0.056	0.245	0.272	0.215	0.198	0.125	0.108	
NO0094R zinc	16.107	2.100	2.586	17.510	4.774	3.501	2.673	8.679	9.823	11.950	2.918	3.159	
NO0095R arsenic	0.103	0.081	0.144	0.059	0.060	0.060	0.050	0.108	0.202	0.070	0.122	0.079	
NO0095R cadmium	0.019	0.034	0.038	0.012	0.015	0.020	0.003	0.005	0.025	0.005	0.046	0.031	
NO0095R chromium	0.100	0.100	0.107	0.100	0.100	0.100	0.100	0.100	0.111	0.100	0.154	0.201	
NO0095R cobalt	0.005	0.005	0.015	0.014	0.013	0.006	0.006	0.015	0.030	0.010	0.007	0.005	
NO0095R copper	0.175	0.154	0.426	0.132	0.256	0.101	0.282	0.370	0.609	0.188	0.299	0.140	
NO0095R iron	5.000	5.000	11.602	11.671	6.713	5.091	5.000	7.449	17.836	5.000	9.604	5.000	
NO0095R lead	1.087	0.765	1.499	0.744	0.898	0.628	0.495	1.199	1.776	0.512	1.116	0.521	
NO0095R manganese	0.349	0.444	1.210	1.334	1.420	0.598	0.373	1.393	2.254	0.671	0.546	0.405	
NO0095R nickel	0.100	0.100	0.136	0.100	0.100	0.100	0.116	0.160	0.233	0.100	0.214	0.100	
NO0095R precipitation_amount	370.955	265.154	125.068	169.140	99.809	250.350	110.542	104.709	121.847	268.440	232.325	435.462	
NO0095R vanadium	0.325	0.311	0.648	0.365	0.393	0.314	0.333	0.472	0.555	0.303	0.737	0.382	
NO0095R zinc	1.337	1.295	3.109	1.190	2.334	0.965	1.379	2.734	3.436	1.289	2.039	5.301	
NO0099R mercury	8.800	8.100	9.100	11.800	17.500	-	8.500	14.100	14.300	6.500	14.100	6.100	
NO0099R arsenic	0.070	0.096	0.104	0.150	0.178	0.098	0.099	0.187	0.207	0.184	0.779	0.561	
NO0099R cadmium	0.016	0.013	0.020	0.011	0.150	0.010	0.007	0.021	0.036	0.026	0.076	0.031	
NO0099R chromium	0.100	0.139	0.105	0.170	0.140	0.100	0.281	0.100	0.156	0.132	0.302	0.609	
NO0099R cobalt	0.015	0.022	0.018	0.036	0.057	0.014	0.061	0.013	0.059	0.033	0.074	0.058	
NO0099R copper	0.406	0.604	0.357	0.540	2.375	0.655	2.284	4.360	2.071	0.719	4.102	4.843	
NO0099R lead	0.833	1.124	1.575	1.226	2.022	0.755	1.228	4.545	2.412	1.433	2.092	1.746	
NO0099R nickel	0.134	0.111	0.108	0.198	0.393	0.110	1.291	1.288	0.396	0.205	0.646	0.533	
NO0099R precipitation_amount	114.012	109.299	170.606	71.752	46.371	147.580	62.903	71.082	86.465	156.338	70.158	153.694	
NO0099R vanadium	0.491	0.384	0.565	0.356	0.517	0.283	0.623	0.564	0.619	0.713	1.459	1.197	
NO0099R zinc	3.935	7.417	3.128	5.450	6.358	2.210	6.875	15.717	10.122	5.929	13.838	14.633	
PL0004R cadmium	0.170	0.080	0.110	0.080	0.060	0.090	0.040	0.020	0.170	0.120	0.180	0.090	
PL0004R copper	5.100	5.720	4.190	4.480	1.900	4.230	3.830	1.960	3.660	2.500	3.670	7.860	
PL0004R lead	3.460	2.600	4.060	3.220	2.280	3.630	2.130	1.970	5.040	3.160	3.520	1.840	
PL0004R zinc	19.850	15.660	22.940	7.380	5.700	12.280	10.820	2.580	13.280	3.850	8.050	6.360	
PT0001R copper	0.924	-	0.860	1.857	2.593	-	-	1.923	1.726	3.241	-	1.675	
PT0001R lead	0.645	-	0.645	0.645	0.645	-	-	0.645	0.645	0.645	-	0.645	
PT0001R manganese	10.773	-	1.075	3.392	7.145	-	-	2.161	7.799	26.567	-	1.672	
PT0001R nickel	0.775	-	0.775	1.522	0.775	-	-	1.054	0.775	0.775	-	0.775	
PT0001R zinc	40.853	-	26.762	14.075	76.871	-	-	11.208	4.657	869.267	-	64.867	
PT0003R copper	2.673	2.389	1.942	2.371	2.163	2.720	3.185	3.866	2.456	2.219	2.536	3.097	
PT0003R lead	1.589	0.645	0.645	0.645	0.879	0.645	0.645	0.645	0.645	0.775	0.867	0.645	
PT0003R manganese	5.153	3.544	3.346	2.246	2.384	3.432	6.876	2.717	2.909	2.236	3.470	2.472	
PT0003R nickel	1.629	0.775	0.874	0.775	1.474	1.514	0.775	1.529	0.775	0.775	0.775	0.775	
PT0003R zinc	24.214	28.582	15.089	25.487	12.474	23.224	60.409	12.939	7.360	7.753	19.663	17.797	
PT0004R copper	0.791	2.075	0.707	2.712	1.854	-	-	2.430	1.500	1.370	0.933	1.359	
PT0004R lead	0.545	0.645	0.645	0.645	0.692	-	-	0.645	0.645	0.645	1.125	0.645	
PT0004R manganese	5.006	2.902	1.490	5.054	3.249	-	-	1.075	6.530	2.664	8.385	1.075	
PT0004R nickel	1.064	0.775	0.775	2.019	2.246	-	-	2.090	0.775	0.775	0.775	0.775	
PT0004R zinc	19.858	27.339	10.755	20.474	13.465	-	-	14.000	22.002	5.708	6.333	4.187	
PT0010R copper	1.945	3.298	1.230	1.045	1.080	2.194	4.523	1.975	3.249	1.383	1.702	2.378	
PT0010R lead	0.645	0.645	1.121	1.137	0.814	0.703	6.157	1.230	1.910	1.142	0.730	0.645	
PT0010R manganese	5.844	13.713	2.608	6.207	3.843	3.651	12.783	2.607	4.366	3.871	13.058	25.476	
PT0010R nickel	7.024	11.317	2.348	4.364	1.726	2.438	5.406	1.326	0.775	0.775	0.775	0.775	

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PT0010R zinc	99.606	150.971	32.898	12.442	12.236	16.380	53.363	18.180	19.426	16.484	91.395	124.940	
SE0002R mercury	7.300	8.900	11.400	9.000	18.700	11.100	12.700	6.400	9.100	6.800	13.800	—	
SE0005R arsenic	—	0.100	0.098	0.070	0.200	0.208	0.150	0.103	0.100	0.100	0.100	0.100	
SE0005R cadmium	—	0.010	0.136	0.070	0.090	0.098	0.050	0.013	0.038	0.030	0.030	0.040	
SE0005R chromium	—	0.330	0.852	0.200	0.570	0.456	0.120	0.101	0.100	0.100	0.261	0.160	
SE0005R cobalt	—	0.010	0.019	0.020	0.030	0.019	0.010	0.010	0.010	0.010	0.019	0.010	
SE0005R copper	—	0.740	1.354	0.440	1.340	1.706	1.840	0.951	0.640	0.420	1.665	0.490	
SE0005R lead	—	0.360	2.191	0.920	0.600	0.679	0.890	0.390	0.891	0.340	0.634	0.360	
SE0005R manganese	—	0.800	1.792	1.300	13.800	13.071	14.800	2.313	4.765	2.900	4.470	0.500	
SE0005R mercury	4.800	2.400	4.500	3.800	6.600	3.600	6.600	3.000	5.400	2.000	3.400	4.300	
SE0005R nickel	—	0.250	0.600	0.150	0.240	0.326	0.220	0.071	0.135	0.050	0.382	0.260	
SE0005R vanadium	—	0.200	0.487	0.200	0.240	0.283	0.120	0.094	0.156	0.080	0.115	0.050	
SE0005R zinc	—	4.290	10.570	3.130	22.290	19.308	32.690	6.760	30.194	8.170	9.827	8.430	
SE0011R mercury	13.000	10.800	20.500	13.200	9.700	9.900	11.600	6.900	12.000	8.200	11.900	9.300	
SE0012R arsenic	0.100	0.111	0.250	0.239	0.180	0.100	0.120	0.120	0.133	0.510	0.663	0.130	
SE0012R cadmium	0.070	0.075	0.137	0.061	0.100	0.070	0.050	0.050	0.041	0.180	0.241	0.030	
SE0012R chromium	0.500	0.486	0.319	0.312	0.940	0.450	0.200	0.211	0.455	1.130	0.767	0.510	
SE0012R cobalt	0.020	0.020	0.020	0.020	0.030	0.020	0.010	0.010	0.011	0.120	0.038	0.010	
SE0012R copper	1.390	1.349	0.889	1.858	1.760	1.900	1.090	1.072	0.716	4.290	4.189	0.860	
SE0012R lead	1.300	1.434	2.985	1.120	1.130	1.510	2.230	2.227	2.209	7.540	6.066	0.990	
SE0012R manganese	4.100	3.924	1.804	1.906	2.200	4.300	8.500	8.219	2.162	10.600	4.626	1.500	
SE0012R mercury	4.500	8.500	11.700	7.200	9.000	—	36.900	10.300	7.800	16.100	16.600	7.600	
SE0012R nickel	0.440	0.435	0.373	0.204	0.400	0.230	0.270	0.265	0.159	1.340	0.790	0.220	
SE0012R vanadium	0.850	0.878	1.189	0.422	0.520	0.390	0.450	0.448	0.408	1.500	1.998	0.610	
SE0012R zinc	7.660	7.587	6.798	9.711	47.210	12.900	12.470	12.143	5.156	22.350	20.962	5.800	
SE0051R arsenic	0.100	0.100	0.230	0.103	0.230	0.170	0.240	0.102	0.130	0.120	0.250	0.100	
SE0051R cadmium	0.090	0.090	0.430	0.040	0.040	0.060	0.050	0.013	0.050	0.060	0.120	0.040	
SE0051R chromium	0.440	0.460	0.560	0.262	0.320	0.490	0.380	0.116	0.190	0.240	0.090	0.090	
SE0051R cobalt	0.030	0.010	0.070	0.020	0.020	0.030	0.050	0.010	0.010	0.010	0.010	0.010	
SE0051R copper	2.250	1.360	2.920	1.069	1.390	1.440	5.310	1.323	2.180	1.260	1.820	0.390	
SE0051R lead	2.400	1.790	6.590	2.071	1.000	1.880	2.550	0.707	1.600	2.610	3.110	1.400	
SE0051R manganese	2.100	1.900	5.100	2.113	2.600	6.300	8.800	1.526	6.500	1.900	3.800	2.600	
SE0051R nickel	0.370	0.350	0.830	0.132	0.210	0.290	0.790	0.050	0.050	0.050	0.240	0.050	
SE0051R vanadium	0.980	1.110	2.170	0.629	0.580	0.500	0.670	0.210	0.440	0.640	0.970	0.760	
SE0051R zinc	8.630	5.450	16.350	31.417	9.370	11.060	8.340	11.273	11.540	32.930	13.430	5.480	
SE0097R arsenic	0.100	0.100	0.100	0.100	0.100	0.110	0.100	0.101	0.110	0.100	0.100	0.080	
SE0097R cadmium	0.069	0.030	0.109	0.050	0.011	0.050	0.030	0.031	0.040	0.030	0.030	0.010	
SE0097R chromium	0.155	0.360	0.389	0.250	0.201	0.360	0.174	0.230	0.287	0.180	0.180	0.160	
SE0097R lead	1.088	1.420	2.898	2.630	1.191	1.600	1.434	2.320	1.729	0.990	0.990	1.010	
SE0097R nickel	0.194	0.340	0.447	0.060	0.080	0.290	0.095	0.061	0.218	0.130	0.130	0.170	
SE0097R zinc	3.985	5.820	8.898	15.470	13.463	16.300	11.042	23.611	25.694	12.680	12.680	2.980	
SK0002R aluminium	41.000	11.000	47.000	33.000	38.000	13.000	16.000	12.000	31.000	22.000	54.000	41.000	
SK0002R iron	78.000	40.000	69.000	38.000	58.000	17.000	30.000	57.000	40.000	34.000	122.000	44.000	
SK0002R manganese	11.200	1.800	9.000	5.800	8.600	3.500	3.600	6.200	14.300	3.700	7.800	4.500	
SK0002R zinc	106.000	26.000	83.000	89.000	81.000	16.000	11.000	21.000	31.000	46.000	77.000	48.000	
SK0004R aluminium	8.000	54.000	11.000	21.000	14.000	13.000	10.000	9.000	20.000	24.000	39.000	66.000	
SK0004R iron	215.000	37.000	8.000	13.000	8.000	7.000	7.000	7.000	11.000	30.000	47.000	75.000	
SK0004R manganese	5.200	5.200	2.200	4.000	6.500	4.200	3.400	2.700	5.800	3.700	3.600	6.000	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
SK0004R zinc	24.000	25.000	8.000	8.000	11.000	7.000	13.000	8.000	17.000	12.000	18.000	47.000	
SK0005R aluminium	78.000	33.000	74.000	28.000	22.000	21.000	13.000	10.000	16.000	16.000	33.000	38.000	
SK0005R iron	63.000	41.000	32.000	13.000	14.000	15.000	15.000	4.000	3.000	9.000	35.000	38.000	
SK0005R manganese	8.900	4.100	13.800	6.800	6.600	5.100	4.300	4.400	2.600	2.200	4.000	10.700	
SK0005R zinc	62.000	37.000	34.000	13.000	12.000	17.000	437.000	17.000	18.000	9.000	51.000	23.000	
SK0006R aluminium	74.000	37.000	27.000	20.000	41.000	13.000	14.000	26.000	16.000	40.000	16.000	14.000	
SK0006R iron	57.000	20.000	15.000	10.000	19.000	18.000	9.000	7.000	12.000	11.000	11.000	42.000	
SK0006R manganese	2.800	2.700	2.700	4.700	4.000	6.400	3.400	2.000	2.800	1.700	1.000	2.600	
SK0006R zinc	17.000	23.000	10.000	12.000	15.000	14.000	19.000	16.000	14.000	19.000	7.000	18.000	

Annex 6

Monthly mean values for heavy metals in air

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BE0004R cadmium	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
BE0004R copper	22.000	22.000	26.000	21.000	20.000	23.000	22.000	22.000	22.000	27.000	26.000	38.000
BE0004R lead	22.000	30.000	29.000	20.000	20.000	20.000	20.000	20.000	28.000	22.000	28.000	20.000
BE0004R nickel	13.000	15.000	16.000	14.000	15.000	12.000	12.000	12.000	10.000	13.000	13.000	10.000
BE0004R zinc	41.000	46.000	65.000	53.000	29.000	13.000	18.000	17.000	56.000	42.000	45.000	16.000
CZ0001R cadmium	0.228	0.280	0.460	0.080	0.798	0.216	0.216	0.202	0.276	0.300	0.278	0.305
CZ0001R lead	4.500	5.000	9.000	5.000	6.200	13.500	8.000	7.200	16.200	10.333	9.200	6.667
CZ0003R cadmium	0.335	0.240	1.078	0.140	0.422	0.235	0.140	0.308	0.406	0.212	0.446	0.792
CZ0003R lead	3.250	4.600	5.200	6.500	9.400	6.000	5.833	5.200	10.000	6.200	9.200	7.200
DE0001R arsenic	0.460	0.240	0.700	0.590	0.330	0.170	0.300	0.340	0.960	0.560	0.570	1.340
DE0001R cadmium	0.358	0.271	0.209	0.161	0.098	0.043	0.065	0.082	0.345	0.198	0.161	0.124
DE0001R copper	1.920	1.150	2.550	1.750	1.360	0.640	1.160	1.390	2.820	1.490	2.200	3.600
DE0001R iron	63.000	37.000	99.000	116.000	94.000	62.000	90.000	130.000	155.000	60.000	67.000	108.000
DE0001R lead	8.450	4.790	7.830	5.920	4.170	2.260	2.920	3.040	9.610	4.810	5.730	3.430
DE0001R manganese	2.380	1.110	2.980	3.950	3.290	2.010	3.180	3.960	5.520	1.880	2.350	4.680
DE0001R nickel	1.300	0.570	1.620	1.580	1.330	0.550	1.290	1.070	1.550	0.460	1.010	0.360
DE0002R arsenic	0.730	0.890	1.020	0.580	0.700	0.400	0.530	0.790	1.850	0.510	0.810	0.390
DE0002R cadmium	0.270	0.177	0.215	0.228	0.148	0.108	0.126	0.362	0.349	0.119	0.334	0.141
DE0002R copper	4.750	2.770	2.550	2.220	2.700	2.140	1.600	2.110	3.560	1.800	3.550	1.470
DE0002R iron	110.000	75.000	92.000	120.000	149.000	84.000	75.000	98.000	186.000	62.000	97.000	46.000
DE0002R lead	12.690	9.530	10.210	9.410	6.960	4.130	3.890	5.130	14.650	10.460	11.760	5.460
DE0002R manganese	4.410	3.110	3.500	4.180	5.020	3.030	3.160	3.760	7.580	2.700	3.720	2.020
DE0002R nickel	1.490	1.060	0.690	0.890	1.370	0.690	0.760	0.740	0.840	0.450	1.310	2.230
DE0003R arsenic	0.280	0.410	0.050	0.140	0.150	0.500	0.340	0.360	0.250	0.210	0.070	0.120
DE0003R cadmium	0.086	0.146	0.111	0.085	0.096	0.095	0.088	0.100	0.158	0.060	0.056	0.033
DE0003R copper	1.410	1.350	0.790	1.210	1.320	1.970	2.080	1.600	1.890	2.170	0.440	0.550
DE0003R iron	96.000	37.000	56.000	39.000	87.000	112.000	71.000	60.000	64.000	118.000	28.000	9.000
DE0003R lead	3.640	5.910	4.460	3.320	4.560	3.830	4.390	3.710	5.110	2.820	2.760	1.410
DE0003R manganese	2.110	1.920	1.880	1.270	2.500	3.410	2.490	1.810	2.290	2.970	1.070	0.520
DE0003R nickel	1.490	0.310	0.050	1.170	0.370	1.370	0.620	0.650	0.690	0.630	0.130	0.160
DE0004R arsenic	0.500	0.350	0.360	0.460	0.460	0.300	0.550	0.440	0.570	0.570	0.720	0.390
DE0004R cadmium	0.245	0.237	0.219	0.209	0.218	0.126	0.168	0.146	0.204	0.217	0.299	0.138
DE0004R copper	2.260	2.660	2.610	2.450	2.580	1.930	2.570	2.540	3.020	2.530	2.750	1.210
DE0004R iron	122.000	110.000	158.000	150.000	160.000	128.000	132.000	119.000	152.000	128.000	113.000	61.000
DE0004R lead	11.580	11.930	12.040	9.780	10.830	8.330	8.800	7.820	15.490	12.280	16.510	7.020
DE0004R manganese	5.040	5.260	5.610	5.490	5.730	4.840	5.680	4.330	6.530	5.260	5.390	3.070
DE0005R arsenic	1.180	1.360	1.450	0.850	0.340	0.200	0.290	0.250	0.560	0.460	0.500	0.450
DE0005R cadmium	0.076	0.089	0.180	0.177	0.122	0.104	0.101	0.142	0.189	0.115	0.116	0.062
DE0005R copper	0.730	0.300	1.030	1.030	1.570	0.990	1.370	1.560	1.790	1.680	0.840	0.880
DE0005R iron	41.000	36.000	83.000	97.000	96.000	51.000	69.000	85.000	103.000	71.000	36.000	38.000
DE0005R lead	3.570	4.750	6.770	5.740	5.010	3.850	4.690	4.830	7.150	4.680	4.320	2.590
DE0005R manganese	1.450	1.480	3.080	3.120	2.730	1.800	2.540	2.900	3.550	2.460	1.440	1.390
DE0005R nickel	0.360	0.620	0.370	0.830	0.750	0.810	0.560	0.930	0.880	2.230	0.690	2.200
DE0007R arsenic	1.190	1.190	1.580	0.630	1.070	0.630	0.500	0.530	1.210	0.710	1.160	0.660
DE0007R cadmium	0.265	0.161	0.285	0.231	0.152	0.076	0.098	0.191	0.509	0.337	0.681	0.615
DE0007R copper	2.550	1.560	2.330	1.180	1.450	1.220	0.940	0.760	2.560	1.850	2.100	1.440
DE0007R iron	68.000	44.000	65.000	97.000	80.000	42.000	75.000	87.000	156.000	58.000	62.000	40.000
DE0007R lead	14.820	8.860	11.900	7.630	6.650	4.700	3.820	3.990	12.470	8.560	13.660	6.000

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DE0007R manganese	2.900	1.630	2.530	3.440	3.380	1.750	3.170	3.610	7.000	2.390	2.580	1.740
DE0007R nickel	1.520	0.980	1.130	1.170	0.550	0.330	0.520	1.000	0.960	0.850	0.790	0.810
DE0008R arsenic	0.480	0.980	0.530	0.540	0.720	0.200	0.200	0.470	0.610	0.140	0.050	0.510
DE0008R cadmium	0.151	0.117	0.189	0.240	0.312	0.096	0.213	0.507	0.439	0.223	0.291	0.388
DE0008R copper	1.490	0.920	0.940	1.470	2.730	1.390	2.310	1.810	2.920	1.380	1.250	1.210
DE0008R iron	48.000	30.000	73.000	95.000	151.000	79.000	96.000	85.000	137.000	64.000	34.000	41.000
DE0008R lead	6.820	9.890	7.500	6.980	12.120	4.930	5.440	4.120	8.800	7.600	6.150	4.050
DE0008R manganese	2.420	1.840	2.630	3.600	5.900	3.570	4.030	3.400	5.200	2.220	1.950	2.840
DE0008R nickel	0.970	0.660	1.270	0.510	1.650	0.490	1.110	0.540	0.450	0.620	0.580	0.710
DE0009R arsenic	0.890	0.160	0.920	0.380	0.490	0.650	0.380	0.450	0.740	0.740	1.040	0.390
DE0009R cadmium	0.241	0.108	0.289	0.185	0.150	0.093	0.1095	0.084	0.296	0.184	0.229	0.188
DE0009R copper	4.500	1.580	2.760	1.760	2.420	1.480	1.300	1.300	2.910	3.800	3.300	1.100
DE0009R iron	78.000	41.000	89.000	107.000	78.000	48.000	64.000	67.000	170.000	44.000	72.000	35.000
DE0009R lead	13.800	5.800	12.500	7.600	5.400	3.700	3.100	3.300	10.400	6.800	10.400	4.100
DE0009R manganese	2.670	1.500	2.970	3.450	2.900	1.980	2.510	2.630	6.690	1.830	2.710	4.190
DE0009R nickel	1.810	1.150	2.120	1.710	2.260	1.520	1.930	0.970	1.300	0.780	1.210	0.750
DK0003R arsenic	0.730	0.945	0.699	0.715	0.408	0.380	0.528	0.458	0.772	0.597	0.942	0.660
DK0003R cadmium	0.298	0.268	0.354	0.227	0.175	0.196	0.203	0.243	0.389	0.351	0.394	0.249
DK0003R chromium	0.532	0.371	0.623	0.840	0.626	0.359	0.725	0.626	0.849	0.728	0.690	0.819
DK0003R copper	1.505	0.944	1.528	1.401	1.550	0.875	1.412	1.715	2.882	1.481	2.168	2.201
DK0003R iron	60.263	39.177	70.551	153.254	200.171	81.006	151.694	148.776	234.864	50.553	76.377	38.210
DK0003R lead	9.209	4.989	7.618	5.629	4.883	3.400	2.879	2.879	7.911	5.361	8.793	7.618
DK0003R nickel	1.172	0.889	1.324	1.239	3.391	0.921	0.948	0.732	3.460	0.632	1.127	0.740
DK0003R zinc	16.664	12.991	15.778	13.715	11.535	8.360	8.377	11.002	17.627	14.819	19.762	13.155
DK0005R arsenic	0.382	0.362	0.952	0.420	0.456	0.515	-	0.380	0.704	0.465	0.850	0.255
DK0005R cadmium	0.304	0.281	0.416	0.265	0.190	0.131	-	0.229	0.282	0.269	0.287	0.390
DK0005R chromium	0.728	0.444	0.584	0.702	0.323	0.234	-	0.463	1.472	0.424	0.570	0.688
DK0005R copper	2.879	1.902	2.328	1.512	1.388	1.331	-	1.168	3.821	1.579	2.970	1.032
DK0005R iron	77.365	41.435	100.652	116.654	116.810	80.217	-	101.580	230.734	52.416	83.283	60.010
DK0005R lead	10.600	6.057	11.448	7.101	5.677	4.624	-	3.984	11.732	7.477	11.431	3.375
DK0005R nickel	2.185	1.319	3.004	2.964	2.752	1.748	-	1.475	3.519	1.064	1.787	0.744
DK0005R zinc	15.253	13.269	21.416	14.961	10.689	8.956	-	9.524	22.898	14.211	20.816	9.785
DK0008R arsenic	0.486	0.260	0.753	0.437	0.297	0.257	0.255	0.249	0.486	0.509	0.700	0.229
DK0008R cadmium	0.201	0.138	0.227	0.212	0.214	0.171	0.184	0.225	0.266	0.190	0.300	0.201
DK0008R chromium	0.394	0.715	0.465	0.548	0.466	0.603	0.468	0.598	1.213	0.616	0.575	0.500
DK0008R copper	1.161	0.628	1.526	1.324	1.705	0.710	0.834	0.673	1.772	1.035	1.529	0.746
DK0008R iron	38.325	23.118	59.659	76.984	117.797	42.841	85.552	66.754	166.775	27.856	50.025	18.378
DK0008R lead	7.772	1.847	6.634	5.111	3.817	3.162	2.560	2.431	8.311	4.644	7.599	3.264
DK0008R nickel	1.403	1.435	2.121	2.355	1.669	1.102	2.010	1.413	2.123	0.703	1.313	0.762
DK0008R zinc	10.818	6.116	13.526	11.476	9.951	6.289	6.183	4.812	14.259	8.694	14.954	5.899
DK0010G aluminum	3.744	9.942	6.516	31.409	33.603	6.605	11.855	77.586	20.931	21.757	8.122	12.507
DK0010G arsenic	0.125	0.229	0.096	0.248	0.044	0.007	0.011	0.027	0.007	0.010	0.042	0.181
DK0010G chromium	0.065	0.105	0.050	0.085	0.060	0.069	0.097	0.137	0.053	0.028	0.038	0.046
DK0010G copper	0.193	0.232	0.151	0.258	0.064	0.011	0.034	0.081	0.024	0.072	0.125	0.275
DK0010G lead	0.832	1.308	0.611	1.296	0.310	0.039	0.052	0.054	0.046	0.063	0.302	1.534
DK0010G manganese	0.208	0.492	0.220	0.613	0.420	0.072	0.129	0.544	0.246	0.346	0.158	0.617
DK0010G nickel	0.105	0.119	0.099	0.141	0.074	0.010	0.040	0.064	0.023	0.043	0.064	0.118
DK0010G selenium	0.051	0.063	0.047	0.055	0.029	0.006	0.019	0.013	0.008	0.008	0.023	0.042

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DK0010G zinc	0.987	1.523	0.975	1.800	0.433	0.083	0.144	0.193	0.096	0.112	0.293	1.708
DK0031R arsenic	0.345	0.202	0.440	0.460	0.326	0.198	0.226	0.266	0.516	0.409	0.447	1.240
DK0031R cadmium	0.236	0.198	0.269	0.1294	0.172	0.142	0.142	0.142	0.280	0.309	0.226	0.248
DK0031R chromium	0.448	1.387	0.813	0.516	0.371	0.371	0.706	0.449	0.707	0.502	0.547	0.357
DK0031R copper	1.129	0.591	1.549	1.079	1.211	0.739	0.875	0.673	1.810	1.261	1.404	0.809
DK0031R iron	37.960	24.118	56.009	106.066	126.321	43.520	74.430	73.643	144.823	42.823	49.709	19.497
DK0031R lead	7.192	2.915	6.625	5.158	4.117	2.551	2.990	2.280	6.659	5.192	5.875	9.454
DK0031R nickel	0.989	0.761	1.435	1.772	1.389	1.126	1.622	0.725	1.218	0.555	0.910	0.442
DK0031R zinc	11.621	6.563	13.974	11.900	9.823	5.013	9.993	6.245	14.236	10.276	12.541	23.491
FI0096R mercury	1.500	1.600	1.850	1.600	1.400	1.300	1.233	1.333	1.100	1.300	1.375	1.500
GB0014R arsenic	0.080	0.479	0.687	0.680	0.567	0.449	0.310	0.796	0.831	0.290	1.298	0.870
GB0014R cadmium	0.200	0.191	0.199	0.180	0.075	0.041	0.055	0.060	0.064	0.050	0.059	0.440
GB0014R chromium	0.020	0.029	0.723	0.790	0.119	0.057	0.020	0.020	0.020	0.020	0.020	0.020
GB0014R copper	4.800	8.533	3.011	3.180	2.431	3.966	9.150	9.131	8.227	1.460	2.300	1.960
GB0014R lead	0.600	6.357	8.113	8.300	6.558	5.423	8.000	8.655	15.240	8.800	20.280	11.300
GB0014R nickel	0.680	2.054	0.970	0.820	1.134	1.151	0.040	0.040	0.045	-	0.040	0.045
GB0014R zinc	7.700	17.264	12.571	9.300	25.152	47.680	30.900	30.713	95.900	-	31.500	126.100
GB0090R arsenic	1.947	0.510	0.800	0.765	0.361	0.430	0.790	0.931	1.620	1.820	1.881	1.686
GB0090R cadmium	0.182	0.160	0.237	0.235	0.186	0.068	0.045	0.071	0.240	0.317	0.437	0.789
GB0090R chromium	0.628	0.820	0.665	0.633	0.379	0.047	0.015	3.163	1.900	0.687	0.024	0.015
GB0090R copper	3.041	3.200	2.919	2.745	1.266	1.716	4.110	3.963	5.470	5.399	3.855	4.236
GB0090R lead	4.948	1.000	12.419	12.210	6.939	8.790	15.000	18.048	28.500	30.823	28.810	34.465
GB0090R nickel	0.853	1.050	1.795	1.822	1.827	1.308	0.030	0.038	0.025	0.031	0.042	0.026
GB0090R zinc	8.945	10.700	14.861	15.310	17.858	12.470	29.300	22.977	28.500	11.661	23.470	25.823
GB0091R arsenic	0.180	-	0.100	0.119	0.100	0.757	0.315	0.268	0.220	0.160	0.363	0.311
GB0091R cadmium	0.130	-	0.110	0.127	0.030	0.030	0.073	0.070	0.080	0.060	0.070	0.057
GB0091R chromium	0.360	-	0.410	0.996	0.010	0.010	0.898	0.119	2.180	0.040	3.143	3.250
GB0091R copper	1.320	-	0.980	0.915	0.770	0.536	3.234	1.799	0.270	2.200	0.528	0.512
GB0091R lead	1.200	-	1.860	1.708	1.930	0.418	2.245	2.611	2.340	4.480	2.392	3.394
GB0091R nickel	0.050	-	0.050	0.065	0.510	0.096	0.050	0.050	0.050	0.050	0.050	0.050
GB0091R zinc	5.100	-	2.630	3.644	10.720	10.720	15.421	22.299	14.170	32.560	23.106	22.965
IE0031R mercury	1.893	1.700	1.849	1.636	1.596	1.686	1.569	1.507	1.541	1.904	1.956	2.104
IS0091R aluminum	542.953	119.840	135.692	241.819	276.972	160.215	70.294	43.831	59.221	249.261	32.056	93.869
IS0091R arsenic	0.105	0.052	0.070	0.364	0.101	0.051	0.043	0.040	0.056	0.072	0.030	0.030
IS0091R cadmium	0.066	0.115	0.030	0.107	0.238	0.557	0.028	0.009	0.031	0.018	0.128	1.010
IS0091R chromium	4.115	2.982	4.110	9.164	9.868	9.338	6.183	8.786	10.428	7.235	6.430	7.983
IS0091R copper	1.502	0.700	0.676	1.159	1.093	2.006	0.975	0.535	0.650	0.834	0.455	2.760
IS0091R iron	927.918	131.936	354.004	456.555	665.333	213.112	138.489	105.334	159.752	440.969	93.790	107.274
IS0091R lead	0.782	0.709	0.507	1.664	1.090	1.757	0.657	0.421	0.765	0.492	0.470	2.679
IS0091R manganese	14.557	2.416	4.919	9.341	8.279	9.736	2.159	1.597	2.420	8.277	1.513	4.090
IS0091R mercury	0.778	0.921	0.780	0.793	0.409	0.778	0.488	0.242	0.310	0.232	0.190	0.489
IS0091R nickel	3.816	2.711	3.259	5.779	6.348	70.098	4.204	4.849	8.077	6.093	5.110	14.123
IS0091R vanadium	4.052	0.782	2.374	1.853	1.989	0.622	0.407	0.281	0.429	1.601	0.303	0.321
IS0091R zinc	21.263	21.865	17.916	14.098	14.761	43.626	13.116	6.074	7.449	4.617	6.162	26.770
IT0015R cadmium	0.306	0.143	0.573	0.449	0.252	0.332	0.160	0.180	0.222	0.316	0.261	0.248
IT0015R copper	2.315	1.196	2.356	1.742	1.434	1.474	1.223	1.227	2.190	2.247	1.956	1.915
IT0015R lead	19.379	5.824	15.880	12.092	8.875	8.575	6.109	6.823	6.449	7.391	2.630	11.970
IT0015R vanadium	4.805	3.873	4.612	2.726	2.188	2.456	2.021	1.532	2.793	1.858	2.543	4.205

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
LT0015R zinc	31.513	17.121	26.406	19.007	20.732	19.940	15.226	16.339	16.793	16.381	20.763	23.375
LV0010R cadmium	0.020	0.020	0.092	0.052	0.190	0.193	0.139	0.109	0.137	0.231	0.219	0.165
IV0010R copper	0.625	0.025	0.174	0.190	1.900	1.517	0.948	1.165	1.843	1.055	0.983	1.800
LV0010R lead	0.600	0.250	1.277	1.372	6.400	13.117	8.281	4.442	4.467	6.635	5.880	7.027
LV0010R zinc	2.875	2.750	4.965	4.421	24.300	40.250	38.016	17.923	13.327	22.803	22.383	25.408
IV0011R cadmium	0.225	0.133	0.334	0.145	0.071	0.063	0.139	0.109	0.137	0.231	0.219	0.165
LV0011R copper	0.787	0.200	2.165	2.277	0.497	2.987	0.729	1.165	1.843	1.055	0.983	1.800
LV0011R lead	6.150	1.725	5.035	4.690	1.790	2.257	8.152	4.442	4.467	6.635	5.880	7.027
IV0011R zinc	16.842	13.475	21.710	15.293	5.594	7.350	37.771	17.923	13.327	22.803	22.383	25.408
NL0009R arsenic	0.492	0.485	0.734	0.809	0.628	0.329	0.629	0.682	1.584	0.685	0.758	0.373
NL0009R cadmium	0.210	0.157	0.210	0.275	0.175	0.104	0.175	0.187	0.413	0.188	0.287	0.147
NL0009R lead	10.169	9.993	10.819	12.489	7.975	5.372	9.243	9.076	21.729	8.747	12.669	9.440
NL0009R zinc	28.801	27.121	34.231	32.695	34.680	23.531	38.891	37.044	46.233	23.025	32.395	23.167
NO0042G arsenic	0.165	0.271	0.075	0.173	0.040	0.006	0.009	0.013	0.009	0.005	0.058	0.149
NO0042G arsenic	0.170	0.270	0.080	0.170	0.040	0.010	0.010	0.010	0.010	0.000	0.060	0.150
NO0042G cadmium	0.041	0.030	0.020	0.051	0.020	0.008	0.001	0.001	0.002	0.002	0.009	0.029
NO0042G cadmium	0.041	0.030	0.020	0.051	0.020	0.008	0.001	0.001	0.002	0.002	0.009	0.029
NO0042G chromium	0.335	0.440	0.040	0.040	0.053	0.034	0.033	0.044	0.068	0.303	0.051	0.067
NO0042G chromium	0.340	0.440	0.040	0.080	0.050	0.030	0.030	0.040	0.070	0.300	0.050	0.070
NO0042G chromium	0.340	0.440	0.040	0.080	0.050	0.030	0.030	0.040	0.070	0.300	0.050	0.070
NO0042G cobalt	0.117	0.061	0.085	0.111	0.063	0.027	0.026	0.028	0.026	0.026	0.028	0.027
NO0042G cobalt	0.120	0.060	0.090	0.110	0.060	0.030	0.030	0.030	0.020	0.030	0.030	0.030
NO0042G cobalt	0.120	0.060	0.090	0.110	0.060	0.030	0.030	0.030	0.020	0.030	0.030	0.030
NO0042G copper	0.230	0.380	0.290	0.400	0.440	0.150	0.070	0.080	0.100	0.040	0.420	0.730
NO0042G copper	0.230	0.380	0.290	0.400	0.440	0.150	0.070	0.080	0.100	0.040	0.420	0.730
NO0042G copper	0.233	0.376	0.285	0.398	0.442	0.149	0.070	0.080	0.098	0.040	0.424	0.726
NO0042G lead	0.788	1.065	0.503	0.900	0.382	0.096	0.034	0.036	0.053	0.039	0.300	0.880
NO0042G manganese	0.459	1.427	0.295	0.624	0.221	0.063	0.243	0.180	0.534	0.104	0.473	0.558
NO0042G manganese	0.460	1.430	0.300	0.620	0.220	0.060	0.240	0.180	0.530	0.100	0.470	0.560
NO0042G manganese	0.460	1.430	0.300	0.620	0.220	0.060	0.240	0.180	0.530	0.100	0.470	0.560
NO0042G mercury	2.133	2.933	1.825	2.600	1.600	-	-	-	1.750	1.200	-	1.650
NO0042G nickel	0.135	0.274	0.169	0.196	0.117	0.089	0.085	0.117	0.065	0.085	0.117	0.172
NO0042G nickel	0.140	0.270	0.170	0.200	0.120	0.090	0.090	0.120	0.070	0.090	0.120	0.170
NO0042G nickel	0.140	0.270	0.170	0.200	0.120	0.090	0.090	0.120	0.070	0.090	0.120	0.170
NO0042G vanadium	0.230	0.580	0.250	0.180	0.060	0.020	0.060	0.110	0.050	0.020	0.090	0.190
NO0042G vanadium	0.230	0.580	0.250	0.180	0.060	0.020	0.060	0.110	0.050	0.020	0.090	0.190
NO0042G vanadium	0.234	0.578	0.250	0.183	0.060	0.023	0.060	0.113	0.054	0.021	0.086	0.188
NO0042G zinc	2.348	3.528	1.230	3.753	1.875	0.628	0.365	0.316	0.321	0.095	0.753	1.486
NO0042G zinc	2.350	3.530	1.230	3.750	1.880	0.630	0.370	0.320	0.320	0.100	0.750	1.490
NO0042G zinc	2.350	3.530	1.230	3.750	1.880	0.630	0.370	0.320	0.320	0.100	0.750	1.490
NO0099R arsenic	0.260	0.220	0.350	0.250	0.190	0.220	0.110	0.220	0.430	0.280	0.410	0.180
NO0099R cadmium	0.083	0.047	0.116	0.091	0.052	0.045	0.032	0.043	0.100	0.042	0.064	0.037
NO0099R chromium	0.920	1.290	1.460	1.430	1.450	1.270	1.150	1.560	1.540	1.410	2.130	2.660
NO0099R copper	0.680	0.440	0.770	0.820	0.590	0.420	0.290	0.580	1.270	0.750	1.500	0.610
NO0099R lead	1.250	1.720	3.440	2.640	2.180	2.590	1.590	1.690	4.230	2.170	2.170	1.320
NO0099R mercury	1.800	1.700	2.100	1.900	1.600	-	-	-	2.600	1.500	1.800	1.700
NO0099R nickel	0.560	0.420	0.790	0.540	0.540	0.450	0.350	0.640	1.080	0.450	0.520	0.470
NO0099R vanadium	0.570	0.750	1.610	1.090	1.030	1.020	0.760	1.310	2.150	0.610	0.700	0.540

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SE0002R mercury	1.350	1.333	1.433	1.467	-	1.350	1.350	1.440	1.622	1.300	1.475	1.275
SK0002R cadmium	0.200	0.200	0.200	0.400	0.300	0.200	0.500	0.100	0.300	0.100	0.500	0.200
SK0002R chromium	1.800	2.900	2.300	2.000	1.600	2.000	2.000	2.300	1.600	1.600	2.300	6.300
SK0002R copper	4.400	2.800	2.200	2.100	1.700	2.900	3.200	4.800	2.800	2.400	2.000	2.000
SK0002R lead	3.400	1.400	2.500	4.500	3.200	3.900	1.500	1.400	4.300	1.500	1.500	0.900
SK0002R manganese	1.100	1.000	1.400	4.100	1.400	1.600	1.500	1.400	1.900	0.900	1.100	1.200
SK0002R nickel	1.000	0.900	0.600	1.000	0.500	1.000	7.000	4.400	2.100	2.500	1.000	2.700
SK0002R vanadium	0.200	0.200	0.100	0.600	0.100	0.400	0.000	0.200	0.000	0.100	0.000	0.100
SK0002R zinc	79.300	66.700	-	76.100	63.600	62.800	85.600	152.900	118.700	83.400	61.000	84.900
SK0004R cadmium	1.100	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.300	0.600	0.400
SK0004R chromium	1.000	1.600	1.100	1.900	1.100	1.200	1.900	1.900	1.600	1.000	2.700	2.200
SK0004R copper	9.600	3.000	2.200	2.200	2.100	3.100	4.500	3.600	3.800	3.500	4.400	3.700
SK0004R lead	85.600	10.600	10.000	8.100	7.200	9.600	10.600	10.500	10.300	7.100	14.500	7.100
SK0004R manganese	5.000	3.400	4.800	7.800	5.400	5.500	8.600	8.000	8.000	4.200	7.100	3.400
SK0004R nickel	0.400	2.200	0.600	1.400	0.500	0.600	1.400	2.300	1.600	1.600	2.600	4.400
SK0004R vanadium	0.700	0.000	0.800	0.500	0.300	0.200	0.100	0.200	0.100	0.000	0.200	0.100
SK0004R zinc	34.800	50.500	14.300	11.600	11.300	15.400	55.700	42.100	56.100	47.300	72.000	28.500
SK0005R cadmium	0.500	0.400	0.700	0.600	0.500	0.600	0.500	0.800	1.300	0.400	0.900	0.500
SK0005R chromium	1.600	14.800	2.400	2.200	2.100	2.000	2.200	3.300	4.800	1.800	5.900	9.600
SK0005R copper	14.600	31.500	19.300	43.600	42.000	9.900	11.600	32.100	22.900	35.000	18.300	12.800
SK0005R lead	20.100	11.900	13.300	11.800	11.200	12.100	12.500	17.200	30.200	8.800	24.700	10.400
SK0005R manganese	34.000	46.300	16.500	12.100	9.000	9.300	13.700	19.800	29.600	14.100	26.800	35.700
SK0005R nickel	1.700	8.600	1.400	1.400	1.400	0.800	3.200	3.900	3.100	1.200	3.700	5.900
SK0005R vanadium	3.500	1.700	1.100	0.300	0.200	0.100	0.200	0.000	0.700	0.000	0.400	0.400
SK0005R zinc	47.600	34.700	21.300	19.300	28.100	28.700	65.300	208.800	477.100	62.000	238.500	93.600
SK0006R cadmium	-	0.500	0.700	0.500	0.500	0.400	1.300	0.400	0.500	0.700	1.000	-
SK0006R chromium	-	1.400	1.600	1.700	1.400	1.200	1.600	2.700	1.800	1.800	5.900	-
SK0006R copper	-	5.200	4.300	3.800	4.000	3.200	5.800	4.000	8.700	6.300	7.800	-
SK0006R lead	-	11.500	19.900	11.600	10.800	5.000	12.600	7.200	33.400	15.900	31.400	-
SK0006R manganese	-	3.500	8.300	9.700	5.000	2.500	6.900	3.500	6.900	2.800	7.200	-
SK0006R nickel	-	1.300	1.200	1.000	0.900	0.700	20.900	18.200	5.900	5.000	8.300	-
SK0006R vanadium	-	1.900	0.800	0.300	0.200	0.200	0.100	0.200	0.600	0.700	1.800	-
SK0006R zinc	-	83.200	93.400	111.200	84.700	96.200	131.600	80.400	62.500	65.200	118.400	-

Annex 7

Monthly mean values on data for POPs in precipitation

QA

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
CZ0003R PCB_101	7.588	6.000	9.200	10.000	9.000	14.400	10.333	9.500	11.600	7.750	10.750	10.800	
CZ0003R PCB_118	1.650	2.750	4.000	3.750	3.000	5.400	6.000	3.575	3.660	3.250	3.000	3.200	
CZ0003R PCB_138	9.812	10.500	12.000	10.250	8.750	12.200	11.000	9.250	8.800	6.000	6.750	8.400	
CZ0003R PCB_153	12.575	12.250	13.800	13.000	11.000	15.600	13.333	11.250	12.800	9.000	10.250	11.400	
CZ0003R PCB_180	6.550	9.750	8.200	7.000	4.500	7.000	7.667	5.500	6.400	4.250	4.000	5.200	
CZ0003R PCB_28	8.337	10.000	13.800	15.000	12.750	19.000	9.667	9.250	17.400	13.250	19.250	13.400	
CZ0003R PCB_52	6.375	7.250	10.400	13.000	10.000	15.600	18.000	16.250	19.800	16.000	32.250	33.000	
CZ0003R acenaphthene	0.292	0.481	0.255	0.105	0.078	0.034	0.019	0.026	0.062	0.167	0.261	0.224	
CZ0003R alpha_HCH	35.575	28.000	48.400	56.500	69.250	47.800	35.000	24.750	39.000	20.750	26.500	20.400	
CZ0003R anthracene	0.282	0.297	0.252	0.082	0.044	0.029	0.029	0.017	0.023	0.201	0.281	0.193	
CZ0003R benz_a_anthracene	0.651	0.536	0.603	0.121	0.066	0.023	0.036	0.028	0.030	0.347	0.599	0.608	
CZ0003R benzo_a_pyrene	0.555	0.424	0.546	0.104	0.057	0.021	0.029	0.023	0.028	0.336	0.683	0.387	
CZ0003R fluoranthene	3.343	3.229	3.404	1.190	0.604	0.358	0.399	0.374	0.406	2.174	3.708	3.534	
CZ0003R fluorene	4.633	4.911	3.965	1.382	0.821	0.275	0.201	0.210	0.532	3.062	6.027	3.281	
CZ0003R gamma_HCH	45.100	32.750	40.600	97.500	151.500	111.200	63.000	66.250	76.800	25.250	18.750	37.800	
CZ0003R inden_123cd_pyrene	0.662	0.444	0.675	0.132	0.089	0.031	0.061	0.050	0.096	0.743	1.124	0.480	
CZ0003R naphthalene	1.044	1.761	1.020	0.606	0.385	0.163	0.077	0.130	0.191	0.483	1.194	0.545	
CZ0003R phenanthrene	9.187	9.231	8.997	3.767	1.950	1.326	1.258	1.145	1.563	6.287	11.854	8.385	
CZ0003R pp_DDD	1.650	3.550	3.640	3.300	1.900	1.960	1.667	2.400	4.520	1.900	2.150	1.900	
CZ0003R pp_DDE	17.562	10.000	44.600	62.000	33.500	36.600	28.000	34.500	46.400	22.250	22.250	11.450	
CZ0003R pp_DDT	6.400	4.225	11.400	12.250	9.075	15.400	13.650	15.650	16.920	4.387	3.300	3.300	
CZ0003R pyrene	2.206	1.845	2.056	0.666	0.315	0.176	0.214	0.197	0.229	1.449	2.415	2.334	
IS0091R HCB	6.380	7.065	4.914	5.669	3.430	3.554	3.147	4.218	4.337	5.835	11.574	11.341	
IS0091R PCB_101	0.052	0.663	0.378	0.385	0.674	0.654	0.061	0.021	0.205	0.021	0.021	0.101	
IS0091R PCB_105	0.000	0.084	0.000	0.000	0.024	0.069	0.045	0.022	0.047	0.000	0.000	0.000	
IS0091R PCB_118	0.000	0.285	0.328	0.000	0.024	0.023	0.087	0.046	0.351	0.000	0.000	0.000	
IS0091R PCB_138	0.000	0.286	0.000	0.000	0.000	0.023	0.023	0.000	0.092	0.000	0.000	0.000	
IS0091R PCB_153	0.000	0.205	0.023	0.000	0.194	0.047	0.087	0.023	0.163	0.021	0.001	0.000	
IS0091R PCB_156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
IS0091R PCB_180	0.000	0.327	0.048	0.000	0.024	0.000	0.023	0.021	0.071	0.000	0.000	0.000	
IS0091R PCB_28	0.764	8.008	2.570	2.452	4.855	4.049	6.736	5.599	5.181	0.021	0.120	1.269	
IS0091R PCB_31	0.000	5.043	0.351	1.035	2.835	1.211	3.880	1.888	2.966	0.000	0.059	1.066	
IS0091R PCB_52	0.221	2.410	0.779	1.058	2.161	2.201	0.190	0.126	0.353	0.000	0.059	0.502	
IS0091R alpha_HCH	9.740	11.342	7.223	8.120	5.926	6.250	6.688	8.102	10.438	11.453	16.584	15.337	
IS0091R beta_HCH	0.000	0.694	0.673	1.082	1.145	1.217	0.039	0.000	0.000	0.000	0.000	0.000	
IS0091R cis_CD	0.508	0.703	0.528	0.673	0.824	0.704	1.236	1.271	1.230	0.981	0.920	0.942	
IS0091R dieldrin	1.043	1.222	0.770	1.250	1.364	1.089	1.463	1.614	2.364	1.436	0.992	1.169	
IS0091R gamma_HCH	0.118	0.897	0.786	6.250	6.594	4.339	5.124	3.591	7.005	5.713	4.570	3.053	
IS0091R op_DDT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062	0.306	0.043	0.001	0.039	
IS0091R pp_DDD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
IS0091R pp_DDE	0.000	0.000	0.144	0.264	0.053	0.000	0.044	0.045	0.093	0.084	0.131	0.223	
IS0091R pp_DDT	0.000	0.325	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	
IS0091R trans_CD	0.000	0.000	0.000	0.000	0.000	0.000	0.606	0.546	0.523	0.467	0.525	0.620	
IS0091R trans_NO	0.170	0.179	0.385	0.529	0.584	0.472	0.708	0.677	0.712	0.638	0.655	0.690	
NO0042G HCB	95.280	75.767	76.322	88.544	103.250	95.600	81.878	85.225	87.160	90.815	92.686	83.875	
NO0042G N1methylphenanthrene	0.025	0.019	0.017	0.011	0.023	0.024	0.043	0.030	0.024	0.019	0.036	0.029	
NO0042G N2methylanthracene	0.004	0.005	0.009	0.011	0.002	0.002	0.002	0.005	0.001	0.002	0.002	0.002	
NO0042G N2methylphenanthrene	0.020	0.016	0.012	0.007	0.015	0.022	0.039	0.032	0.028	0.022	0.057	0.030	

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NO0042G PCB_101	0.668	0.504	0.543	0.546	0.588	3.831	2.318	0.903	1.620	1.020	1.306	3.807
NO0042G PCB_105	0.150	0.084	0.102	0.100	0.257	0.951	1.189	0.400	0.268	0.160	0.304	0.282
NO0042G PCB_114	0.016	0.013	0.024	0.022	0.070	0.050	0.061	0.017	0.020	0.025	0.030	0.033
NO0042G PCB_118	0.324	0.217	0.251	0.244	0.390	2.053	2.404	0.697	0.640	0.548	0.707	0.980
NO0042G PCB_122	0.010	0.013	0.039	0.012	0.010	0.028	0.028	0.010	0.010	0.010	0.013	0.010
NO0042G PCB_123	0.012	0.010	0.017	0.012	0.042	0.036	0.036	0.015	0.016	0.015	0.019	0.022
NO0042G PCB_128	0.134	0.052	0.083	0.081	0.290	0.728	0.925	0.452	0.284	0.140	0.196	0.140
NO0042G PCB_138	0.530	0.221	0.314	0.301	0.830	2.569	3.509	1.320	0.876	0.962	0.824	0.805
NO0042G PCB_141	0.090	0.040	0.066	0.061	0.140	0.637	0.799	0.245	0.188	0.077	0.133	0.223
NO0042G PCB_149	0.380	0.226	0.322	0.300	0.490	2.672	2.554	0.700	0.942	0.430	0.653	1.633
NO0042G PCB_153	0.564	0.254	0.361	0.326	0.575	2.642	3.438	1.013	0.912	1.630	1.083	1.378
NO0042G PCB_156	0.070	0.029	0.043	0.039	0.140	0.357	0.537	0.262	0.166	0.090	0.124	0.063
NO0042G PCB_157	0.018	0.010	0.020	0.016	0.032	0.070	0.079	0.047	0.034	0.022	0.027	0.012
NO0042G PCB_167	0.030	0.016	0.026	0.021	0.050	0.136	0.189	0.097	0.066	0.058	0.056	0.035
NO0042G PCB_170	0.072	0.029	0.040	0.036	0.095	0.453	0.975	0.615	0.422	0.212	0.199	0.100
NO0042G PCB_18	12.632	6.293	6.881	7.546	9.757	16.613	19.436	21.685	28.080	26.457	11.951	26.205
NO0042G PCB_180	0.184	0.078	0.103	0.092	0.228	0.841	1.623	0.935	0.628	0.488	0.379	0.223
NO0042G PCB_183	0.054	0.019	0.037	0.030	0.067	0.249	0.369	0.152	0.106	0.092	0.071	0.090
NO0042G PCB_187	0.118	0.044	0.078	0.064	0.140	0.537	0.812	0.332	0.244	0.177	0.149	0.200
NO0042G PCB_189	0.010	0.010	0.014	0.010	0.010	0.031	0.049	0.031	0.028	0.015	0.016	0.010
NO0042G PCB_194	0.014	0.010	0.019	0.012	0.017	0.067	0.151	0.097	0.074	0.038	0.043	0.025
NO0042G PCB_206	0.010	0.010	0.012	0.010	0.010	0.016	0.022	0.010	0.014	0.010	0.013	0.010
NO0042G PCB_209	0.010	0.018	0.021	0.012	0.010	0.017	0.010	0.010	0.010	0.080	0.180	0.045
NO0042G PCB_28	5.306	2.907	2.809	3.024	4.205	8.644	9.207	9.035	11.740	12.115	6.250	15.545
NO0042G PCB_31	6.012	3.323	3.218	3.367	4.793	8.642	8.862	8.763	11.354	11.875	5.963	14.670
NO0042G PCB_33	4.142	2.221	2.223	2.254	3.358	6.507	6.156	6.018	8.024	8.273	4.336	11.703
NO0042G PCB_37	0.436	0.302	0.608	0.248	0.410	1.657	0.819	0.595	0.974	0.860	0.661	2.505
NO0042G PCB_47	0.932	0.628	0.651	0.651	0.750	1.892	1.443	1.285	1.768	1.830	1.231	3.560
NO0042G PCB_52	1.858	1.466	1.410	1.466	1.597	3.548	2.883	2.425	3.314	3.312	2.534	6.597
NO0042G PCB_60	0.084	0.074	0.111	0.069	0.050	0.383	0.186	0.107	0.194	0.150	0.156	0.457
NO0042G PCB_66	0.470	0.390	0.389	0.387	0.447	1.934	0.910	0.560	0.982	0.810	0.834	2.472
NO0042G PCB_74	0.308	0.260	0.262	0.271	0.295	1.177	0.545	0.358	0.558	0.505	0.561	1.558
NO0042G PCB_99	0.304	0.247	0.260	0.276	0.262	1.063	0.610	0.310	0.470	0.475	0.524	1.030
NO0042G acenaphthene	0.001	0.006	0.017	0.014	0.009	0.006	0.006	0.016	0.007	0.006	0.007	0.023
NO0042G acenaphthylene	0.001	0.001	0.002	0.001	0.001	0.002	0.006	0.006	0.001	0.001	0.002	0.007
NO0042G alpha HCH	22.000	24.856	27.378	35.467	33.400	26.678	32.045	33.200	40.420	42.123	33.771	28.125
NO0042G anthanthrene	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003
NO0042G anthracene	0.016	0.004	0.007	0.007	0.002	0.003	0.005	0.009	0.004	0.002	0.005	0.008
NO0042G benz_a anthracene	0.003	0.014	0.002	0.001	0.001	0.000	0.002	0.001	0.002	0.002	0.002	0.018
NO0042G benzo_a pyrene	0.007	0.016	0.005	0.003	0.002	0.006	0.005	0.007	0.004	0.009	0.005	0.021
NO0042G benzo_e pyrene	0.004	0.020	0.004	0.001	0.002	0.002	0.001	0.001	0.000	0.003	0.002	0.020
NO0042G benzo ghi perylene	0.004	0.019	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.003	0.020
NO0042G biphenyl	3.973	3.864	1.565	1.214	0.338	0.158	0.077	0.134	0.129	0.338	0.319	1.276
NO0042G chrysene triphenylene	0.010	0.038	0.009	0.004	0.003	0.002	0.006	0.005	0.002	0.006	0.007	0.041
NO0042G cis_CD	0.776	0.527	0.711	0.762	0.873	0.919	0.752	0.675	0.876	0.938	1.007	0.955
NO0042G cis_NO	0.034	0.023	0.032	0.128	0.073	0.092	0.106	0.095	0.102	0.092	0.066	0.072
NO0042G coronene	0.002	0.009	0.002	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001	0.010
NO0042G dibenzo_ac ah anthracenes	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.011	0.004

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
NO0042G dibenzofuran	2.310	4.619	1.741	1.175	0.226	0.147	0.145	0.255	0.280	0.762	0.645	2.118	
NO0042G dibenzothiophene	0.037	0.047	0.026	0.010	0.017	0.014	0.023	0.025	0.018	0.023	0.034	0.059	
NO0042G fluoranthene	0.035	0.113	0.037	0.018	0.017	0.022	0.028	0.025	0.025	0.026	0.049	0.158	
NO0042G fluorene	0.852	1.419	0.392	0.138	0.083	0.077	0.102	0.149	0.097	0.238	0.236	0.901	
NO0042G gamma_HCH	3.596	5.770	12.067	16.356	18.350	13.567	8.491	6.467	10.768	11.985	12.329	12.100	
NO0042G inden_123cd_pyrene	0.004	0.020	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.002	0.022	
NO0042G naphthalene	2.843	2.910	1.055	0.874	0.310	0.294	0.216	0.165	0.121	0.311	0.532	2.858	
NO0042G op_DDD	0.034	0.038	0.047	0.038	0.032	0.104	0.133	0.042	0.042	0.022	0.044	0.065	
NO0042G op_DDE	0.174	0.161	0.231	0.158	0.088	0.080	0.047	0.025	0.044	0.060	0.134	0.203	
NO0042G op_DDT	0.334	0.338	0.474	0.454	0.393	0.662	0.684	0.203	0.266	0.235	0.371	0.685	
NO0042G perylene	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	
NO0042G phenanthrene	0.177	0.206	0.141	0.070	0.090	0.114	0.173	0.162	0.137	0.128	0.210	0.287	
NO0042G pp_DDD	0.036	0.029	0.037	0.021	0.020	0.116	0.285	0.080	0.076	0.042	0.054	0.110	
NO0042G pp_DDE	1.052	0.888	1.360	0.600	0.470	0.790	0.730	0.247	0.348	0.590	0.730	1.622	
NO0042G pp_DDT	0.246	0.231	0.270	0.212	0.295	0.961	1.723	0.728	0.468	0.217	0.301	0.490	
NO0042G pyrene	0.024	0.068	0.025	0.015	0.014	0.019	0.023	0.021	0.017	0.016	0.031	0.081	
NO0042G trans_CD	0.480	0.362	0.463	0.410	0.303	0.450	0.259	0.160	0.244	0.292	0.493	0.667	
NO0042G trans_NO	0.618	0.409	0.586	0.654	0.742	0.704	0.785	0.498	0.594	0.646	0.707	0.760	
NO0099R HCB	68.000	73.575	80.125	89.940	92.125	84.050	78.333	86.260	99.900	89.050	79.650	70.717	
NO0099R alpha_HCH	11.895	14.000	17.325	21.380	28.925	24.050	33.233	39.740	36.460	34.150	24.350	17.067	
NO0099R gamma_HCH	7.205	7.497	23.106	41.709	28.106	75.882	47.794	48.639	55.457	23.603	33.900	13.292	

Annex 8

Monthly mean values on data for POPs in air

QA

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
CZ0003R PCB_101	7.588	6.000	9.200	10.000	9.000	14.400	10.333	9.500	11.600	7.750	10.750	10.800	
CZ0003R PCB_118	1.650	2.750	4.000	3.750	3.000	5.400	6.000	3.575	3.660	3.250	3.000	3.200	
CZ0003R PCB_138	9.812	10.500	12.000	10.250	8.750	12.200	11.000	9.250	8.750	6.000	6.000	8.400	
CZ0003R PCB_153	12.575	12.250	13.800	13.000	11.000	15.600	13.333	11.250	12.800	9.000	10.250	11.400	
CZ0003R PCB_180	6.550	9.750	8.200	7.000	4.500	7.000	7.667	5.500	6.400	4.250	4.000	5.200	
CZ0003R PCB_28	8.337	10.000	13.800	15.000	12.750	19.000	9.667	9.250	17.400	13.250	19.250	13.400	
CZ0003R PCB_52	6.375	7.250	10.400	13.000	10.000	15.600	18.000	16.250	19.800	16.000	32.250	33.000	
CZ0003R acenaphthene	0.292	0.481	0.255	0.105	0.078	0.034	0.019	0.026	0.062	0.167	0.261	0.224	
CZ0003R alpha_HCH	35.575	28.000	48.400	56.500	69.250	47.800	35.000	24.750	39.000	20.750	26.500	20.400	
CZ0003R anthracene	0.282	0.297	0.252	0.082	0.044	0.029	0.029	0.017	0.023	0.201	0.281	0.193	
CZ0003R benz_a_anthracene	0.651	0.536	0.603	0.121	0.066	0.023	0.036	0.028	0.030	0.347	0.599	0.608	
CZ0003R benzo_a_pyrene	0.555	0.424	0.546	0.104	0.057	0.021	0.029	0.023	0.028	0.336	0.683	0.387	
CZ0003R fluoranthene	3.343	3.229	3.404	1.190	0.604	0.358	0.399	0.374	0.406	2.174	3.708	3.534	
CZ0003R fluorene	4.633	4.911	3.965	1.382	0.821	0.275	0.201	0.210	0.532	3.062	6.027	3.281	
CZ0003R gamma_HCH	45.100	32.750	40.600	97.500	151.500	111.200	63.000	66.250	76.800	25.250	18.750	37.800	
CZ0003R inden_123cd_pyrene	0.662	0.444	0.675	0.132	0.089	0.031	0.061	0.050	0.096	0.743	1.124	0.480	
CZ0003R naphthalene	1.044	1.761	1.020	0.606	0.385	0.163	0.077	0.130	0.191	0.483	1.194	0.545	
CZ0003R phenanthrene	9.187	9.231	8.997	3.767	1.950	1.326	1.258	1.145	1.563	6.287	11.854	8.385	
CZ0003R pp_DDD	1.650	3.550	3.640	3.300	1.900	1.960	1.667	2.400	4.520	1.900	2.150	1.900	
CZ0003R pp_DDE	17.562	10.000	44.600	62.000	33.500	36.600	28.000	34.500	46.400	22.250	22.250	11.450	
CZ0003R pp_DDT	6.400	4.225	11.400	12.250	9.075	15.400	13.650	15.650	16.920	4.387	3.300	3.300	
CZ0003R pyrene	2.206	1.845	2.056	0.666	0.315	0.176	0.214	0.197	0.229	1.449	2.415	2.334	
IS0091R HCB	6.380	7.065	4.914	5.669	3.430	3.554	3.147	4.218	4.337	5.835	11.574	11.341	
IS0091R PCB_101	0.052	0.663	0.378	0.385	0.674	0.654	0.061	0.021	0.205	0.021	0.001	0.101	
IS0091R PCB_105	0.000	0.084	0.000	0.000	0.024	0.069	0.045	0.022	0.047	0.000	0.000	0.000	
IS0091R PCB_118	0.000	0.285	0.328	0.000	0.024	0.023	0.087	0.046	0.351	0.000	0.000	0.000	
IS0091R PCB_138	0.000	0.286	0.000	0.000	0.000	0.023	0.023	0.000	0.092	0.000	0.000	0.000	
IS0091R PCB_153	0.000	0.205	0.023	0.000	0.194	0.047	0.087	0.023	0.163	0.021	0.001	0.000	
IS0091R PCB_156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
IS0091R PCB_180	0.000	0.327	0.048	0.000	0.024	0.000	0.023	0.021	0.071	0.000	0.000	0.000	
IS0091R PCB_28	0.764	8.008	2.570	2.452	4.855	4.049	6.736	5.599	5.181	0.021	0.120	1.269	
IS0091R PCB_31	0.000	5.043	0.351	1.035	2.835	1.211	3.880	1.888	2.966	0.000	0.059	1.066	
IS0091R PCB_52	0.221	2.410	0.779	1.058	2.161	2.201	0.190	0.126	0.353	0.000	0.059	0.502	
IS0091R alpha_HCH	9.740	11.342	7.223	8.120	5.926	6.250	6.688	8.102	10.438	11.453	16.584	15.337	
IS0091R beta_HCH	0.000	0.694	0.673	1.082	1.145	1.217	0.039	0.000	0.000	0.000	0.000	0.000	
IS0091R cis_CD	0.508	0.703	0.528	0.673	0.824	0.704	1.236	1.271	1.230	0.981	0.920	0.942	
IS0091R dieldrin	1.043	1.222	0.770	1.250	1.364	1.089	1.463	1.614	2.364	1.436	0.992	1.169	
IS0091R gamma_HCH	0.118	0.897	0.786	6.250	6.594	4.339	5.124	3.591	7.005	5.713	4.570	3.053	
IS0091R op_DDT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062	0.306	0.043	0.001	0.039	
IS0091R pp_DDD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
IS0091R pp_DDE	0.000	0.000	0.144	0.264	0.053	0.000	0.044	0.045	0.093	0.084	0.131	0.223	
IS0091R pp_DDT	0.000	0.325	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	
IS0091R trans_CD	0.000	0.000	0.000	0.000	0.000	0.000	0.606	0.546	0.523	0.467	0.525	0.620	
IS0091R trans_NO	0.170	0.179	0.385	0.529	0.584	0.472	0.708	0.677	0.712	0.638	0.655	0.690	
NO0042G HCB	95.280	75.767	76.322	88.544	103.250	95.600	81.875	85.225	87.160	90.815	92.686	83.875	
NO0042G N1methylphenanthrene	0.025	0.019	0.017	0.011	0.023	0.024	0.043	0.030	0.024	0.019	0.036	0.029	
NO0042G N2methylanthracene	0.004	0.005	0.009	0.011	0.002	0.002	0.002	0.005	0.001	0.002	0.002	0.002	
NO0042G N2methylphenanthrene	0.020	0.016	0.012	0.007	0.015	0.022	0.039	0.032	0.028	0.022	0.057	0.030	

QA

NO0042G PCB_101	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
NO0042G PCB_105	0.668	0.504	0.543	0.546	0.588	3.831	2.318	0.903	1.620	1.020	1.306	3.807	
NO0042G PCB_114	0.150	0.084	0.102	0.100	0.257	0.951	1.189	0.400	0.268	0.160	0.304	0.282	
NO0042G PCB_118	0.016	0.013	0.024	0.022	0.020	0.070	0.061	0.017	0.020	0.025	0.030	0.033	
NO0042G PCB_122	0.324	0.217	0.251	0.244	0.390	2.053	2.404	0.697	0.640	0.548	0.707	0.980	
NO0042G PCB_123	0.010	0.013	0.039	0.012	0.010	0.028	0.028	0.010	0.010	0.010	0.013	0.010	
NO0042G PCB_128	0.012	0.010	0.017	0.012	0.042	0.036	0.036	0.015	0.016	0.015	0.019	0.022	
NO0042G PCB_138	0.134	0.052	0.083	0.081	0.290	0.728	0.925	0.452	0.284	0.140	0.196	0.140	
NO0042G PCB_141	0.530	0.221	0.314	0.301	0.830	2.569	3.509	1.320	0.876	0.962	0.824	0.805	
NO0042G PCB_149	0.090	0.040	0.066	0.061	0.140	0.637	0.799	0.245	0.188	0.077	0.133	0.223	
NO0042G PCB_153	0.380	0.226	0.322	0.300	0.490	2.672	2.554	0.700	0.942	0.430	0.653	1.633	
NO0042G PCB_156	0.564	0.254	0.361	0.326	0.575	2.642	3.438	1.013	0.912	1.630	1.083	1.378	
NO0042G PCB_157	0.070	0.029	0.043	0.039	0.140	0.357	0.537	0.262	0.166	0.090	0.124	0.063	
NO0042G PCB_167	0.018	0.010	0.020	0.016	0.032	0.070	0.079	0.047	0.034	0.022	0.027	0.012	
NO0042G PCB_170	0.030	0.016	0.026	0.021	0.050	0.136	0.189	0.097	0.066	0.058	0.056	0.035	
NO0042G PCB_18	0.072	0.029	0.040	0.036	0.095	0.453	0.975	0.615	0.422	0.212	0.199	0.100	
NO0042G PCB_180	12.632	6.293	6.881	7.546	9.757	16.613	19.436	21.685	28.080	26.457	11.951	26.205	
NO0042G PCB_183	0.184	0.078	0.103	0.092	0.228	0.841	1.623	0.935	0.628	0.488	0.379	0.223	
NO0042G PCB_187	0.054	0.019	0.037	0.030	0.067	0.249	0.369	0.152	0.106	0.092	0.071	0.090	
NO0042G PCB_189	0.118	0.044	0.078	0.064	0.140	0.537	0.812	0.332	0.244	0.177	0.149	0.200	
NO0042G PCB_194	0.010	0.010	0.014	0.010	0.010	0.031	0.049	0.031	0.028	0.015	0.016	0.010	
NO0042G PCB_206	0.014	0.010	0.019	0.012	0.017	0.067	0.151	0.097	0.074	0.038	0.043	0.025	
NO0042G PCB_209	0.010	0.010	0.012	0.010	0.010	0.016	0.022	0.010	0.014	0.010	0.013	0.010	
NO0042G PCB_28	0.010	0.018	0.021	0.012	0.010	0.017	0.010	0.010	0.010	0.080	0.180	0.045	
NO0042G PCB_31	5.306	2.907	2.809	3.024	4.205	8.644	9.207	9.035	11.740	12.115	6.250	15.545	
NO0042G PCB_33	6.012	3.323	3.218	3.367	4.793	8.642	8.862	8.763	11.354	11.875	5.963	14.670	
NO0042G PCB_37	4.142	2.221	2.223	2.254	3.358	6.507	6.156	6.018	8.024	8.273	4.336	11.703	
NO0042G PCB_47	0.436	0.302	0.608	0.248	0.410	1.657	0.819	0.595	0.974	0.860	0.661	2.505	
NO0042G PCB_52	0.932	0.628	0.651	0.651	0.750	1.892	1.443	1.285	1.768	1.830	1.231	3.560	
NO0042G PCB_60	1.858	1.466	1.410	1.466	1.597	3.548	2.883	2.425	3.314	3.312	2.534	6.597	
NO0042G PCB_66	0.084	0.074	0.111	0.069	0.050	0.383	0.186	0.107	0.194	0.150	0.156	0.457	
NO0042G PCB_74	0.470	0.390	0.389	0.387	0.447	1.934	0.910	0.560	0.982	0.810	0.834	2.472	
NO0042G PCB_99	0.308	0.260	0.262	0.271	0.295	1.177	0.545	0.358	0.558	0.505	0.561	1.558	
NO0042G acenaphthene	0.304	0.247	0.260	0.276	0.262	1.063	0.610	0.310	0.470	0.475	0.524	1.030	
NO0042G acenaphthylene	0.001	0.006	0.017	0.014	0.009	0.006	0.006	0.016	0.007	0.006	0.007	0.023	
NO0042G alpha HCH	0.001	0.001	0.002	0.001	0.001	0.002	0.006	0.006	0.001	0.001	0.002	0.007	
NO0042G anthanthrene	22.000	24.856	27.378	35.467	33.400	26.678	32.045	33.200	40.420	42.123	33.771	28.125	
NO0042G anthracene	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	
NO0042G benz_a anthracene	0.016	0.004	0.007	0.007	0.002	0.003	0.005	0.009	0.004	0.002	0.005	0.008	
NO0042G benzo_a pyrene	0.003	0.014	0.002	0.001	0.001	0.000	0.002	0.001	0.000	0.002	0.002	0.018	
NO0042G benzo_e pyrene	0.007	0.016	0.005	0.003	0.002	0.006	0.005	0.007	0.004	0.009	0.005	0.021	
NO0042G benzo ghi perylene	0.004	0.020	0.004	0.001	0.002	0.002	0.001	0.001	0.000	0.003	0.002	0.020	
NO0042G biphenyl	0.004	0.019	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.003	0.020	
NO0042G chrysene	3.973	3.864	1.565	1.214	0.338	0.158	0.077	0.134	0.129	0.338	0.319	1.276	
NO0042G chrysene triphenylene	0.010	0.038	0.009	0.004	0.003	0.002	0.006	0.005	0.002	0.006	0.007	0.041	
NO0042G cis_CD	0.776	0.527	0.711	0.762	0.873	0.919	0.752	0.675	0.876	0.938	1.007	0.955	
NO0042G cis_NO	0.034	0.023	0.032	0.128	0.073	0.092	0.106	0.095	0.102	0.092	0.066	0.072	
NO0042G coronene	0.002	0.009	0.002	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001	0.010	
NO0042G dibenzo_ac ah anthracenes	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.011	0.004	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
NO0042G dibenzofuran	2.310	4.619	1.741	1.175	0.226	0.147	0.145	0.255	0.280	0.762	0.645	2.118	
NO0042G dibenzothiophene	0.037	0.047	0.026	0.010	0.017	0.014	0.023	0.025	0.018	0.023	0.034	0.059	
NO0042G fluoranthene	0.035	0.113	0.037	0.018	0.017	0.022	0.028	0.025	0.025	0.026	0.049	0.158	
NO0042G fluorene	0.852	1.419	0.392	0.138	0.083	0.077	0.102	0.149	0.097	0.238	0.236	0.901	
NO0042G gamma_HCH	3.596	5.770	12.067	16.356	18.350	13.567	8.491	6.467	10.768	11.985	12.329	12.100	
NO0042G inden_123cd_pyrene	0.004	0.020	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.002	0.022	
NO0042G naphthalene	2.843	2.910	1.055	0.874	0.310	0.294	0.216	0.165	0.121	0.311	0.532	2.858	
NO0042G op_DDD	0.034	0.038	0.047	0.038	0.032	0.104	0.133	0.042	0.042	0.022	0.044	0.065	
NO0042G op_DDE	0.174	0.161	0.231	0.158	0.088	0.080	0.047	0.025	0.044	0.060	0.134	0.203	
NO0042G op_DDT	0.334	0.338	0.474	0.454	0.393	0.662	0.684	0.203	0.266	0.235	0.371	0.685	
NO0042G perylene	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	
NO0042G phenanthrene	0.177	0.206	0.141	0.070	0.090	0.114	0.173	0.162	0.137	0.128	0.210	0.287	
NO0042G pp_DDD	0.036	0.029	0.037	0.021	0.020	0.116	0.285	0.080	0.076	0.042	0.054	0.110	
NO0042G pp_DDE	1.052	0.888	1.360	0.600	0.470	0.790	0.730	0.247	0.348	0.590	0.730	1.622	
NO0042G pp_DDT	0.246	0.231	0.270	0.212	0.295	0.961	1.723	0.728	0.468	0.217	0.301	0.490	
NO0042G pyrene	0.024	0.068	0.025	0.015	0.014	0.019	0.023	0.021	0.017	0.016	0.031	0.081	
NO0042G trans_CD	0.480	0.362	0.463	0.410	0.303	0.450	0.259	0.160	0.244	0.292	0.493	0.667	
NO0042G trans_NO	0.618	0.409	0.586	0.654	0.742	0.704	0.785	0.498	0.594	0.646	0.707	0.760	
NO0099R HCB	68.000	73.575	80.125	89.940	92.125	84.050	78.333	86.260	99.900	89.050	79.650	70.717	
NO0099R alpha_HCH	11.895	14.000	17.325	21.380	28.925	24.050	33.233	39.740	36.460	34.150	24.350	17.067	
NO0099R gamma_HCH	7.205	7.497	23.106	41.709	28.106	75.882	47.794	48.639	55.457	23.603	33.900	13.292	

Annex 9

Overview of sampling and analytical methods

This Annex gives an overview of the sampling methods used in the participating countries. The information given is mostly based on answered questionnaires issued by the CCC. Most countries have not reported this information.

Table 9.1: Techniques for sampling of precipitation and aerosols.

Country	Heavy metals in precipitation	Heavy metals in air/ air particles	POPs in precipitation	POPs in air
Belgium	Bulk/Wet-only	Filter-1pack		
Czech Republic	Bulk	Filter-1pack		High vol.
Denmark	Bulk	Filter-3pack		
Finland	Bulk		Bulk	High vol.
France				
Germany	DE1,9: Wet-only DE2,4: Bulk	Machery/Nagel MN 85/90 (glassfiber) High Vol	Wet only	
Iceland	IS02: Wet-only IS90: Bulk	High vol.	Bulk (Steel funnel 1m ² /PUR foam)	PUR-foam 1000m ³ /15days
Ireland	Bulk	Hg-monitor	Bulk	
Italy				
Latvia	Bulk			
Lithuania	Bulk	Low vol		
Netherlands				
Norway	Bulk	NO42: 20 l/h Whatman 40 fine fraction Hg: gold traps NO99: 10 l/min Gelman Zefluor teflon filter 2.5 µm / Nucleopore PC- membran 8 µm	Bulk Funnel and bottle of glass	NILU's High Vol. Sampler Gelman AE filter + 2 PUR foams 20m ³ /h NO42: 1000m ³ NO99: 500m ³
Poland	Bulk	2 m ³ /day membrane filters Synpor-4, 0.85		
Portugal	Bulk			

Table 9.1 cont.

Country	Heavy metals in precipitation	Heavy metals in air / air particles	POPs in precipitation	POPs in air
Slovak Republic	1.3.94→ Wet-only (Bulk earlier)	Nitrocellulose filters 45mm, 15-60 m3/day (Earlier: Nitrocellulose filters 35mm, 12 m3/day)		
Sweden	Bulk	Hg: gold traps	bulk	High vol.
Switzerland		Glassfiber filters		
Turkey				
United Kingdom	Bulk			
Yugoslavia	Bulk			

Annex 10

List of data reports

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