EMEP/CCC-Report 2/2000

Heavy metals and POPs within the EMEP region 1998

Torunn Berg, Anne-Gunn Hjellbrekke and Rita Larsen

NILU : EMEP/CCC-Report 2/2000
REFERENCE : O-95038/O-99050
DATE : AUGUST 2000

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 1998

Torunn Berg, Anne-Gunn Hjellbrekke and Rita Larsen

Norwegian Institute for Air Research
P.O. Box 100, N-2007 Kjeller, Norway

Contents

Page

Heavy metals and POPs within the EMEP region 1998

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 eighth 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, four reports have been published (EMEP/CCC-Reports 8/96, 9/97, 7/98, 7/99) which present data on heavy metals and POPs from national and international measurement programmes for the period 1987 to 1997. The majority of the data are included in the priority lists for heavy metals and POPs. In this report data from 1998 are presented.

2. Measurement programme

2.1 Monitoring sites

The location of the measurement sites with data reported to the database during 1996-1999 are given in Table 1 and Figure 1. Only a few of the sites have reported data both for heavy metals and POPs, however. An overview of the sites for which CCC have received data for 1998 are given in Tables 2-5. 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 data base.

Country	Station codes	Old code	Station name	Location		Height above sea (m)
				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°3'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°7'E	566
France	FR0090R	FR90	Porspoder	48°31'N	4°45'W	50
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	Stórhöfdi	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	-
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

Table 1, cont.:

Country	Station codes	Old code	Station name	Location		Height above sea (m)
				Lat.	Long.	
Norway cont.	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	Jungfraujoch	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

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).

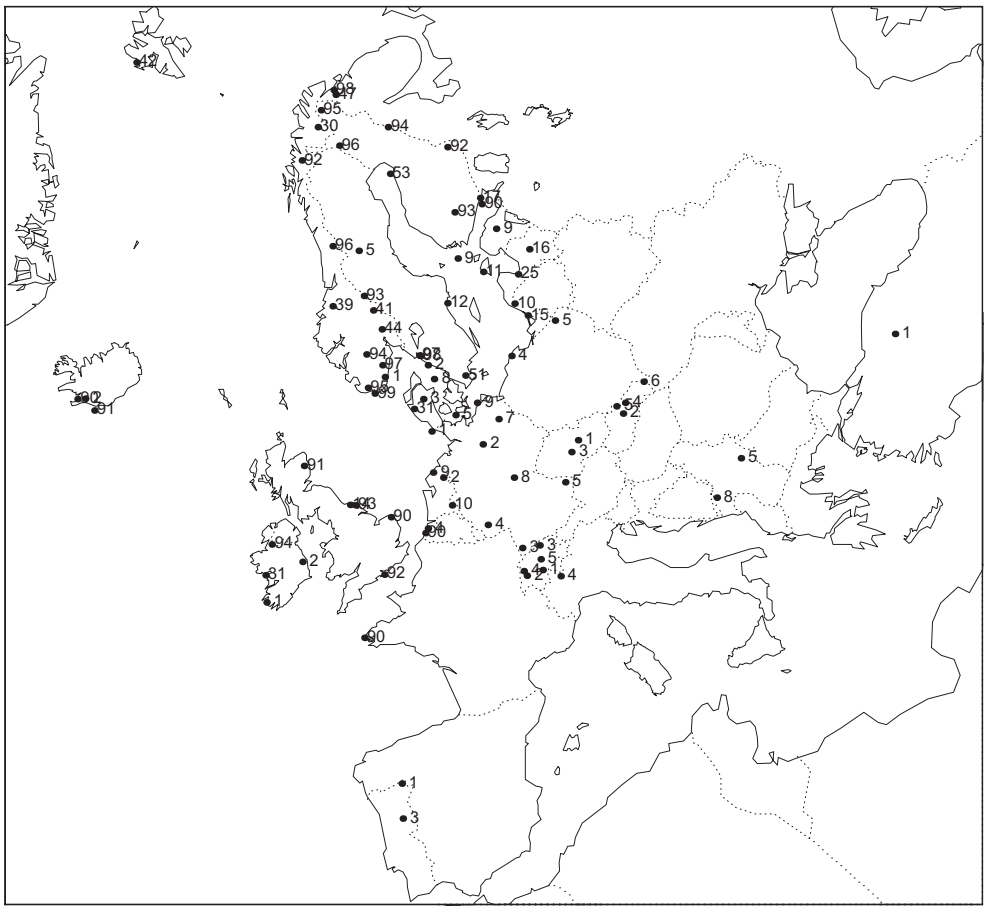

Figure 1: Location of monitoring stations which have reported data to the EMEP heavy metal and POP data base.

2.2 Sampling and analytical techniques

A brief summary of the sampling and analytical techniques used for the 1998-data are given in Tables 2-5.

2.3 Quality of the monitoring data

To provide sufficiently accurate data for EMEP's needs, data with expected lower accuracy have been flagged (the QA column) in the tables with 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
6. Concentration level low compared to nearby stations
7. Extremely long sampling time
8. Sum of wet deposition + deposited particles to the sampler.
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). The geographical gradients for Pb, Cd and Hg in precipitation and air seem to be reasonable. However, it is difficult to understand why the Estonian sites have so much lower concentration values for Pb in precipitation than the adjacent sites in southern Finland. Portuguese Pb concentrations are low – so they should be. The high concentrations of Pb at the Slovakian sites may be due to industry in the region Ruzomberok – Liptovský Mikauláš (Rühling and Steinnes, 1998). The high concentrations of Cd reported from the Slovakian stations may mainly be due to emissions from cupper smelters in the Legnica - Glogów basin in Southern Poland (Rühling et al., 1998). High concentrations of Pb are also reported from Košetice (CZ0003R). The main road from Praha to Brno is not far from the station.

Information on the quality of the precipitation measurements is also available from the HELCOM-EMEP-PARCOM-AMAP intercomparison on heavy metals in precipitation (Berg and Semb, 1995; Winkler and Roider, 1997). 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 results from the analytical part of the intercomparison showed that a majority of the participating laboratories reported data within 25% of the theoretical values (Berg and Semb, 1995). In general, the intercomparison results for Pb was best. The field intercomparison part of the exercise was carried out at the German EMEP station Deuselbach (DE0004R). The results were extensively discussed at a workshop in Germany, September 1996, and the major conclusion from this meeting was that the outcome of this intercomparison is much more positive than in the case of previous exercises. The agreement between the collectors regarding precipitation amount seems to be satisfactory. Furthermore, the results for Pb, Cd and eventually Zn seem to be acceptable, but problems still remain to be solved for the other heavy metals considered (WMO, 1997). Heavy metals in precipitation were also included in a laboratory performance, prepared by CCC in 1999. The results from this intercomparison will be presented in a separate report, and will be used in the quality control of the 1999 data reported next year. Intercomparisons on mercury remain still to be carried out in the framework of EMEP.

Table 2: General information about sampling and analysis of heavy metals in precipitation in 1998.

Country	Sites	Heavy metals	Sampling Period	Sampler		Analytical Methods
				Wet only	Bulk	
Czech Republic	CZ0001R	Ni, Cd, Pb	Weekly		X	
	CZ0003R	"	Daily	X		
Denmark	DK0031R	Cr, 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-FI0095R	V, Cr, Mn, Fe, Ni, Cu, Zn, As, Cd, Pb	Monthly		X	ICP-MS
Germany	DE0001R, DE0009R	Cr, Ni, Cu, Zn, As, Cd, Hg, Pb	Monthly	X		GF-AAS
	DE0004R	Cr, Mn, 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	Cr, Ni, Cu, Zn, As, Cd, Pb, Hg	Monthly		X	AAS
Lithuania	LT0015R	V, Mn, Ni, Cu, Zn, Cd, Pb	Monthly		X	AAS
Latvia	LV0010R, LV0016R	Cu, Zn, Cd, Pb	Monthly		X	GF-AAS
Netherlands	NL0009R	Cu, Zn, Cd, Pb	4 weeks	X		
Norway	NO0001R, NO0041R	Zn, Cd, Pb	Weekly		X	ICP-MS
	NO0047R	Cr, Co, Ni, Cu, Zn, As, Cd, Pb	Weekly		X	"
	NO0039R, NO0093R-NO0095R, NO0099R	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Pb	Weekly		X	"
	NO0099R	Hg	Weekly		X	CV-AFS
Poland	PL0005R	Cr, Cu, Ni, Zn, Cd, Pb	Daily			
Portugal	PT0001R, PT0003R, PT0004R	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

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 1998.

Country	Sites	Heavy metals	Sampling period	Sampler	Analytical methods
Czech Republic	CZ0001R, CZ0003R	Cd, Pb	24h	Filter-1pack	
Denmark	DK0005R, DK0008R DK0031R	Ni, Cu, Zn, Pb Cr, Ni, Cu, Zn, As, Cd, Pb		Filter-3pack "	Pixe
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
Latvia	LV0010R, LV0016R	Cu, Zn, Cd, Pb	Weekly	Filter_1pack	AAS/GF-AAS
Lithuania	LT0015R	V, Mn, Cu, Zn, Cd, Pb	24h[2)]	Low vol.	AAS
Netherlands	NL0009R	Zn, As, Cd, Pb	24h	Filter_1pack	
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_2pack Gold traps	ICP-MS CV-AFS
Slovakia	SK0002R, SK0004R, SK0005R, SK0006R	Cr, Mn, Ni, Cu, Zn, Cd, Pb	Monthly		
Sweden	SE0002R	Hg	12 h	Gold traps	CV-AFS

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 1997.

Country	Sites	POPs	Sampling period	Sampler	Analytical methods
Germany	DE0001R, DE0009R	PAH, pesticides, HCHs and HCB	Monthly	Wet only	GC/ECD
Iceland	IS0091R	PAH, pesticides	15d	Bulk_sampler	
Ireland	IE0002R	Pesticides, HCHs	Monthly	Bulk_sampler	
Norway	NO0099R	α-HCH, γ-HCH, HCB	Monthly	Bulk sampler	GC-MS

HPLC: High performance liquid chromatography
GC/ECD: Gas chromatography with electron capture detector
GC-MS: Gas chromatography with mass spectrometry

Table 5: General information about sampling and analysis of POPs in air in 1997.

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

HPLC: High performance liquid chromatography
GC/ECD: Gas chromatography with electron capture detector
GC-MS: Gas chromatography with mass spectrometry

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).

IS0002R and NO0042G are dominated by the low-chlorinated PCBs. CZ0003R shows a more balanced composition of individual PCB congeners. There is a marked seasonal trend, with higher concentrations in the summer months than in autumn and winter (Figure 2).

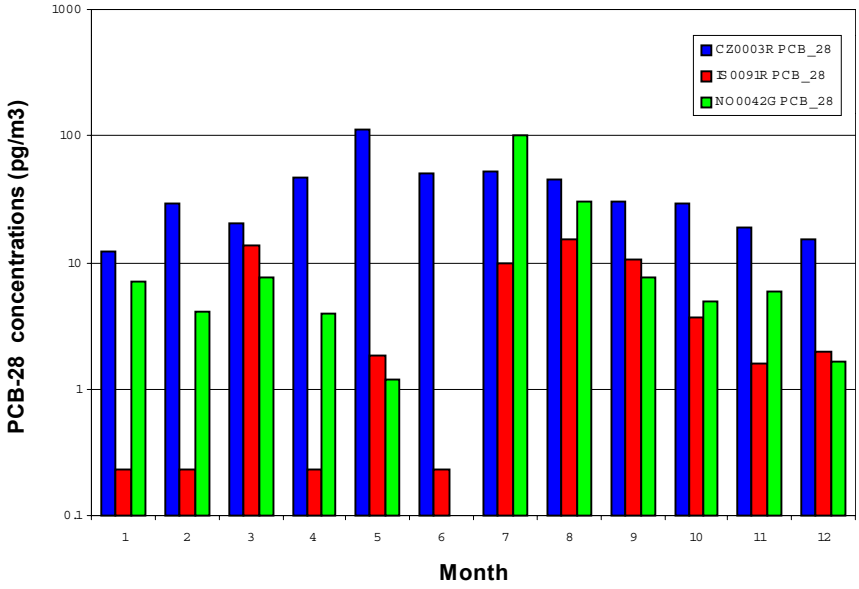

Figure 2: Concentrations of PCB-28 in air+aerosol at three EMEP stations.

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 CZ0003R. Different methods are used for the different stations, and the results from LT0015R are e.g. given as deposition rates, µg/m^2 month.

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 in 2001. An Expert Meeting on measurements of POPs in air and precipitation was, however, held at Lillehammer, Norway in November 1997. The Expert Meeting gave technical recommendations on measurements of POP in air and precipitation, and on the quality assurance of the POP measurements. A summary from this meeting is published by Lükewille (1998).

3. Presentation of the measurement data

3.1 Maps of heavy metal concentrations over Europe

Annual averages of Pb and Cd from the 1998 precipitation and air data are presented on maps (Figures 3-6). 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 weighted by the sampling period.

3.1.1 Kriging procedure

The average concentrations of lead and cadmium at the sites were interpolated to grid averages using ordinary kriging (Journel and Huijbregts, 1978). The method makes use of the spatial covariance between the averaged data, and estimates values where no measurements exist. The kriging weights are computed from a variogram, which expresses the covariance as a function of distance and direction between measurement points. The whole EMEP-area consists of 99x99 grid elements of which one element is 50x50 km.

It should be noted that the estimation error of concentrations in grid elements distant from the sites can be considerable and that a lack of sites in regions with characteristic high or low concentration will result in a corresponding lack of this feature in the presented maps.

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.

3.1.2 Lead in precipitation

The stations are generally located distant from local emission sources in order to be representative for a larger region. The lowest concentrations of Pb during 1998 are found in northern Scandinavia, Iceland, Ireland and Portugal, where the annual averages are below 1 µg Pb/l (Figure 3). Increasing gradients can be seen eastward with peaks around 4-5 µg Pb/l at Czech stations. Usage of Pb in petrol has decreased much more in the Western European countries relatively to the Eastern European countries over the last years (Pacyna, MSC-West, pers. comm.).

3.1.3 Cadmium in precipitation

In Scandinavia the annual mean values of Cd are below 0.08 µg Cd/l (Figure 4). An increasing gradient can be seen south and eastward. The highest concentrations of Cd, at about 0.20 µg Cd/l, are reported from the Czech stations and the Polish stations. The emissions of Cd have also decreased in Europe in recent years, but not so much as for Pb (Pacyna, pers. comm.; Bartnicki, 1998).

3.1.4 Lead in aerosols

Figure 5 presents the annual averages of Pb in air in 1998. The lowest concentrations (below 1 ng Pb/m^3) can be seen at Svalbard (NO0042G) and at Iceland. Concentration maximum is seen at the Slovak stations for which there are reported annual means in the order of 20 ng Pb/m^3.

3.1.5 Cadmium in aerosols

Cadmium in aerosols is presented in Figure 6. As for Pb the lowest concentrations (below 0.10 ng Cd/m^3) are observed at Svalbard and Iceland. An increasing gradient can be seen southeastward, with the highest concentrations at the Slovak stations.

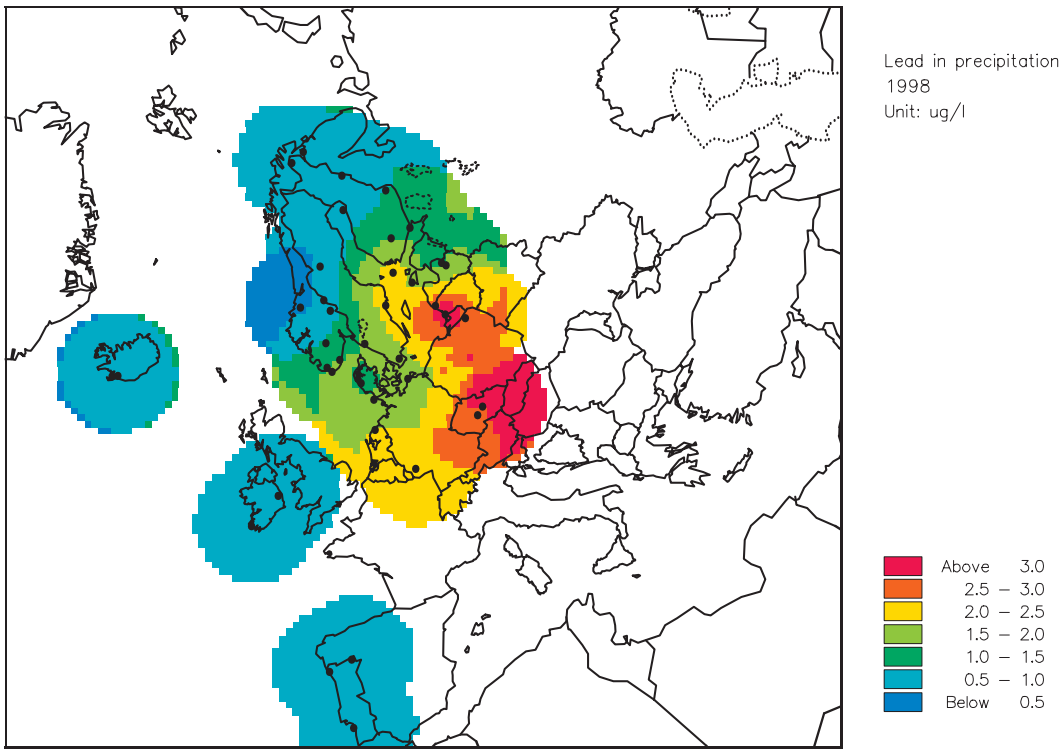

Figure 3: Lead in precipitation, 1998 (µg/l).

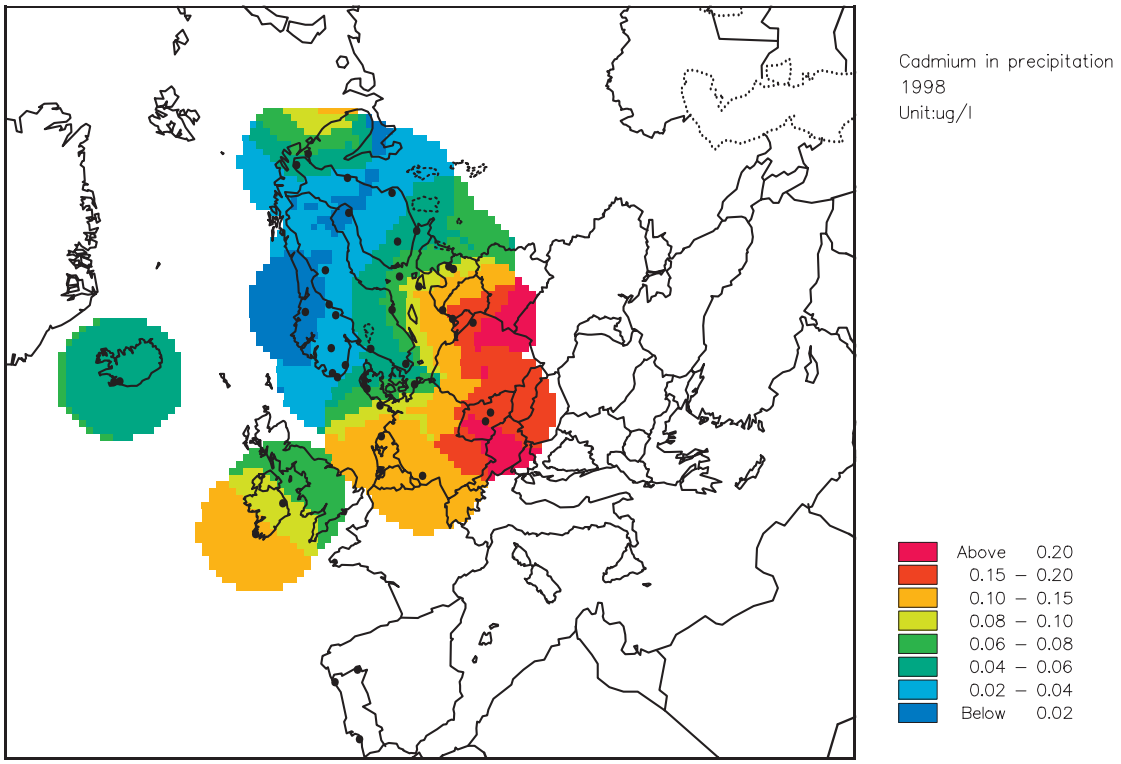

Figure 4: Cadmium in precipitation, 1998 (µg/l).

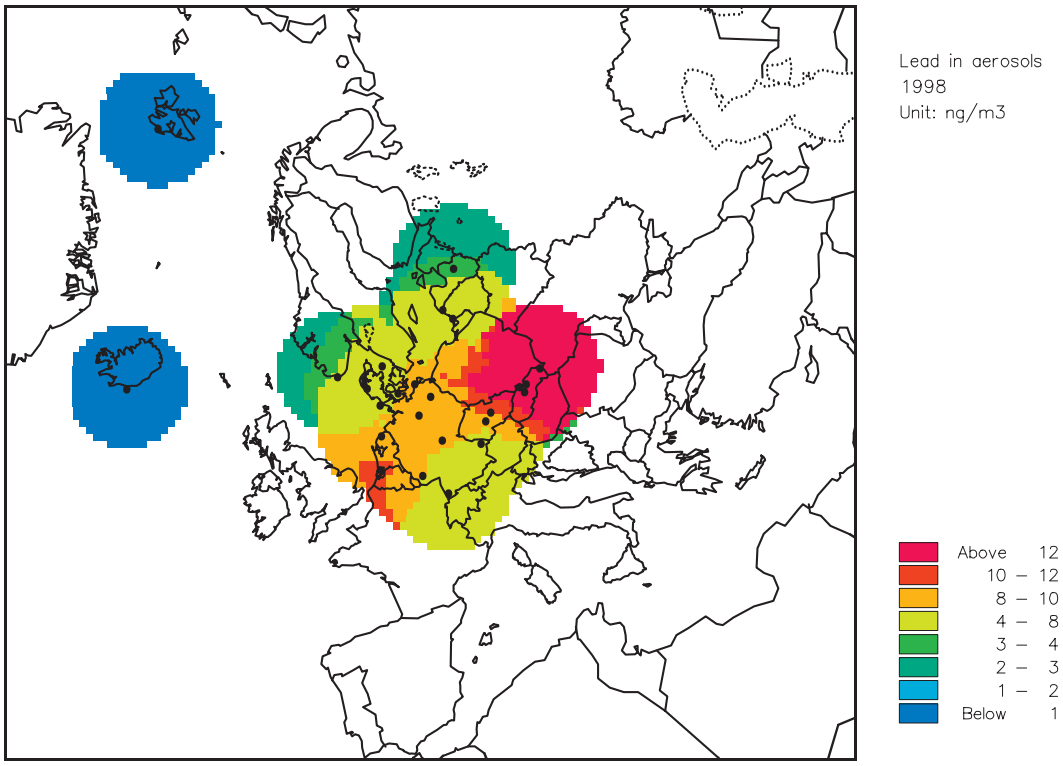

Figure 5: Lead in aerosols, 1998 (ng/m³).

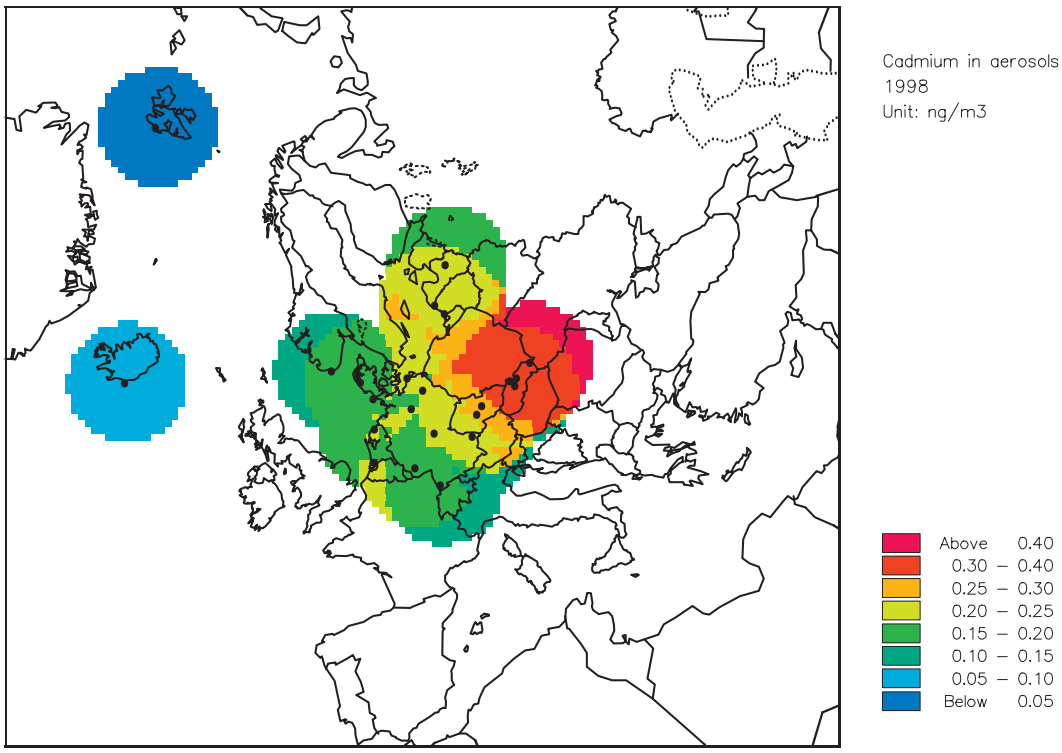

Figure 6: Cadmium in aerosols, 1998 (ng/m³).

3.2 Temporal trends for cadmium in aerosols

Figure 7 shows temporal trends for cadmium in aerosols at 8 stations for which data have been reported from three years or more. The emissions of Cd have decreased in Europe in recent years, but not so much as for Pb (Pacyna, pers. comm.; Bartnicki, 1998). The concentration levels of Cd are decreasing at CZ0003R and DE0004R. A marked seasonal variation in the level of Cd can be seen at NO0042G (Spitzbergen) 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.

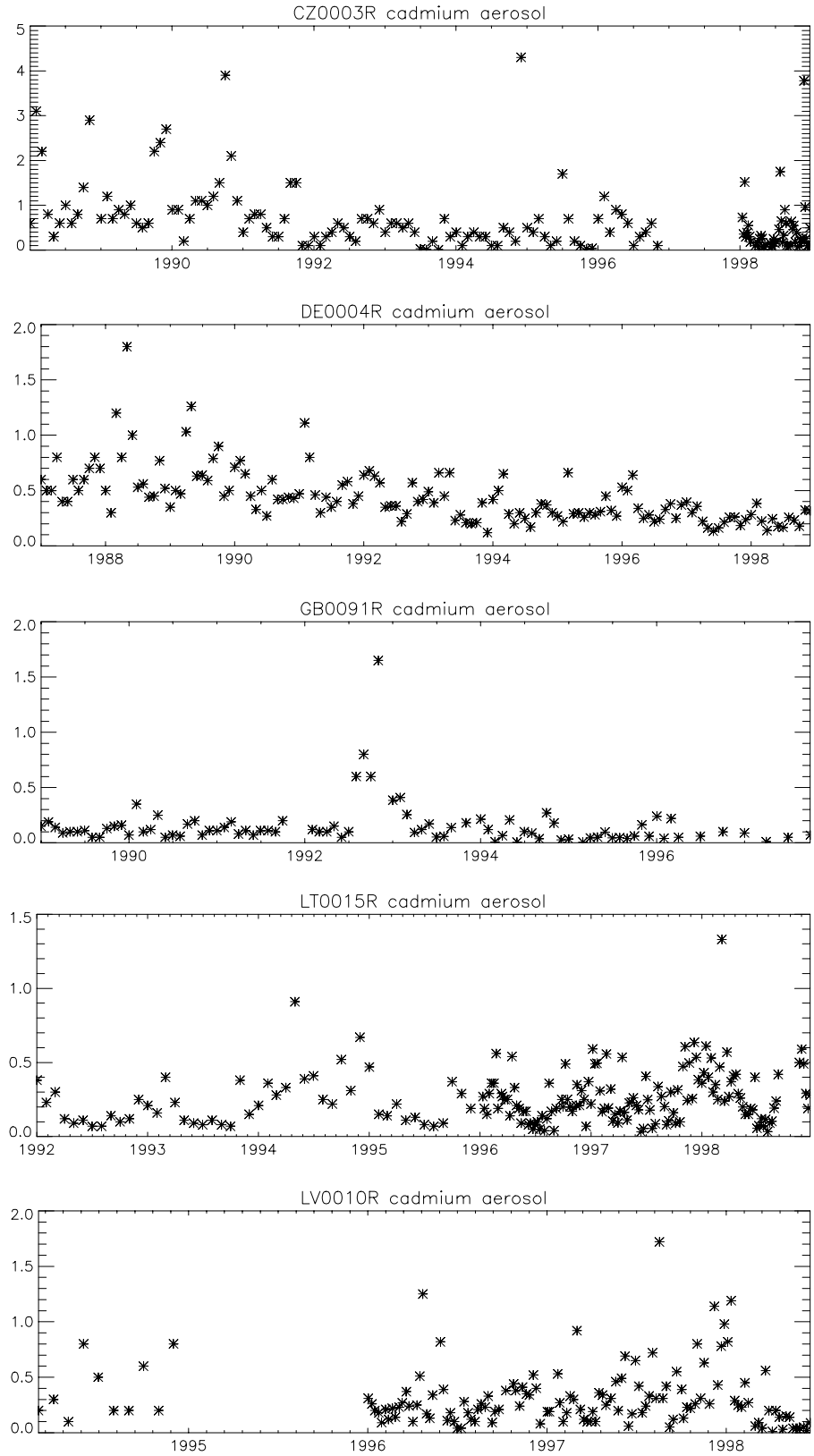
CZ0003R cadmium aerosol
DE0004R cadmium aerosol
GB0091R cadmium aerosol
LT0015R cadmium aerosol
LV0010R cadmium aerosol

Figure 7:

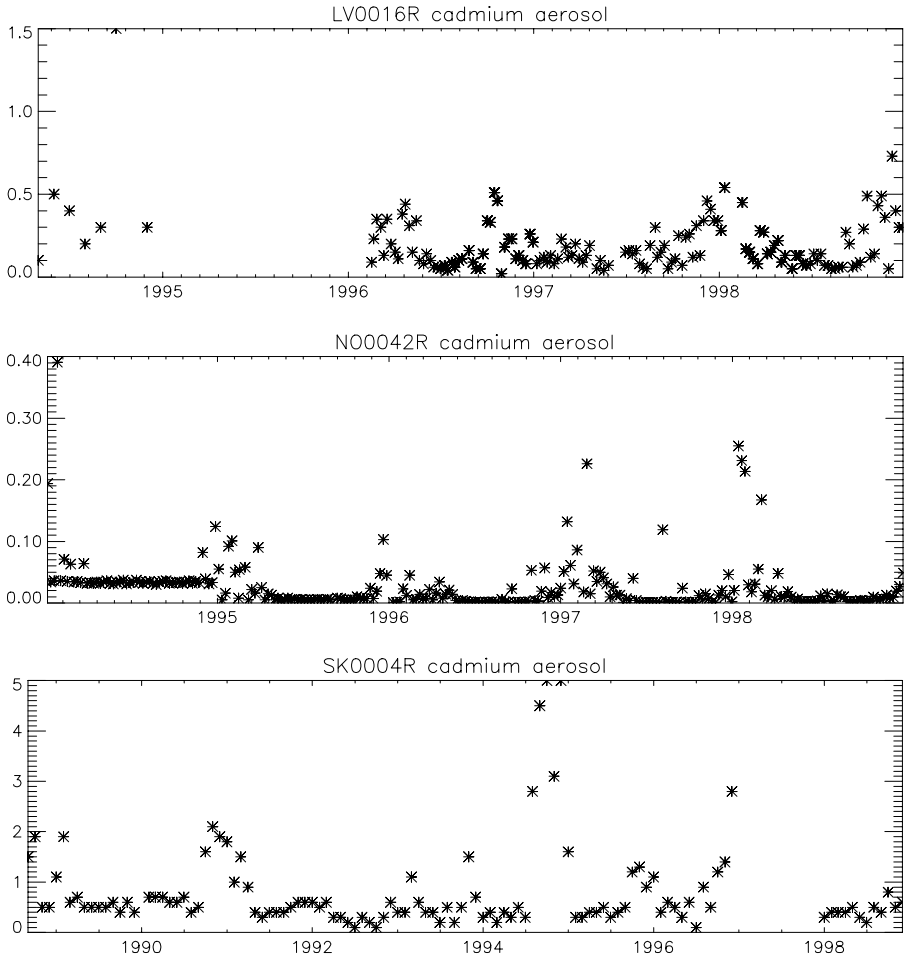

Figure 7, cont.

3.3 Concentrations of HCHs in Europe

Figure 8 and 9 show temporal trends for α-HCH and γ-HCH in air at 5 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 as 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.

Lista (NO0099R) at the southern coast of Norway, shows the highest 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).

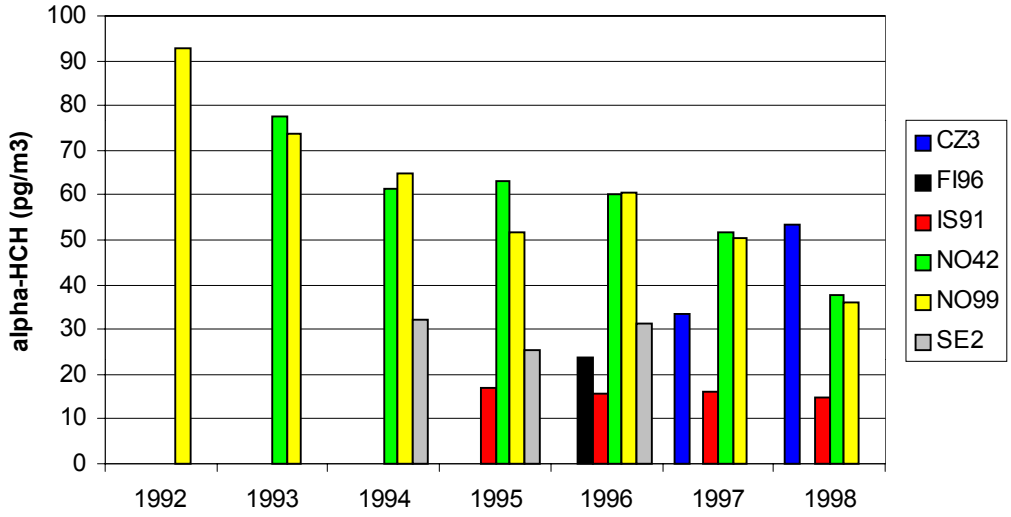

Figure 8: Annual weighted means for alpha-HCH during 1992-1998.

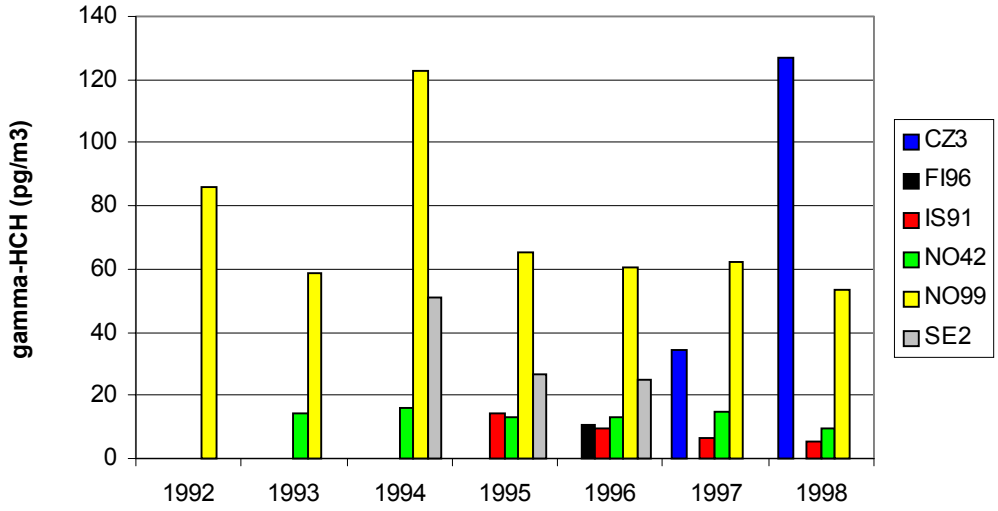

Figure 9: Annual weighted means for gamma-HCH during 1992-1998.

3.4 Annual summaries

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

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

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:

$$\hat{c} = \frac{1}{\sum_i p_i} \cdot \sum_i c_i \cdot p_i$$

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:

$$\overline{c_a} = \frac{1}{N} \sum_i c_i$$

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

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

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:

$$\overline{lnc} = \frac{1}{N} \cdot \sum_i lnc_i$$

$$\overline{c_g} = exp\left(\overline{lnc}\right)$$

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:

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

$$sd_g = exp\,(sdlnc)$$

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:

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
*: monthly estimates (further details in 5.5)

QA: — is a flag which gives information on the quality of the data (further details in 4)

The units used for the results in this report are given in Table 5. The deposition figures are calculated for the sampling period.

Table 5: 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	

3.5 Monthly summaries

Monthly averages of heavy metals are given in Annex 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 which are flagged (*). 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.

3.6 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 4 July 2000. 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, Iceland, and the westernmost part of Europe. Increasing gradients can be seen eastward. This is due to the fact that the usage of Pb in petrol has decreased much more in the western European countries relatively to the eastern European countries over the last years. The emissions of Cd have also decreased in Europe in recent years, but not so much as for Pb.

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.

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 1998 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)

6. References

Bartnicki, J. (1998) Heavy metals eulerian transport model – HMET model description and results. Oslo (DNMI Research Report No. 65 June 1998).

Benezet, J.H. and Matsumara, F. (1973) Izomerization of γ-BHC to α-BHC in the environment. *Nature, 243,* 480-481.

Berg, T. and Semb, A. (1995) Preliminary results from the HELCOM - EMEP - PARCOM - AMAP analytical intercomparison of heavy metals in precipitation. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Note 1/95).

Berg, T., Hjellbrekke, A.G. and Skjelmoen, J.E. (1996*)* Heavy metals and POPs within the ECE region. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 8/96).

Berg, T., Hjellbrekke, A.G. and Ritter, N. (1997) Heavy metals and POPs within the ECE region. Additional data. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 9/97).

Berg, T. and Hjellbrekke, A.G. (1998) Heavy metals and POPs within the ECE region. Supplementary data for 1989-1996. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 7/98).

Breivik, K., Pacyna, J. and Münch, J. (1999) Use of α-, β- and γ-hexachlorocyclo-hexane in Europe, 1970–1996. *Sci. Tot. Environ., 239,* 151-163.

Journel, A.G. and Huijbregts, C.G. (1978) Mining Geostatistics. London, Academic Press.

Winkler, P. and Roider, G. (1997) HELCOM-EMEP-PARCOM-AMAP Field Intercomparison of heavy metals in precipitation 1995. Offenbach, Umweltbundesamt.

WMO (1997) Report and proceedings of the workshop on the assessment of EMEP activities concerning heavy metals and persistent organic pollutants and their further development (Vol. 1). Geneve, WMO (Global Atmosphere Watch No. 117) pp. 18-32.

Annex 1

Annual statistics for heavy metals in precipitation

CZ0001R SVRATOUCH CZECH REPUBLIC

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.17	0.05	0.96	6	43	W	
Pb	3.12	1.00	16.30	5	44	W	
Ni	1.10	1.00	7.00	20	44	W	
Precip	-	0.0	90.5	1	52	W	

CZ0003R KOSETICE CZECH REPUBLIC

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.23	0.05	1.39	0	127	D	
Pb	2.92	0.50	54.40	0	127	D	
Ni	1.12	1.00	41.00	0	127	D	
Precip	-	0.0	31.8	180	365	D	

DE0001R WESTERLAND GERMANY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.14	0.08	0.28	0	12	M	
Cd	0.11	0.05	0.17	0	12	M	
Cr	0.16	0.01	0.43	0	12	M	
Cu	3.20	1.65	8.96	0	12	M	
Pb	1.55	0.68	3.47	0	12	M	
Hg	9.31	4.00	20.00	0	12	M	
Ni	1.04	0.71	1.58	0	12	M	
Precip	-	13.2	154.6	0	12	M	
Precip off	-	11.0	149.0	0	12	M	
Zn	17.36	8.40	29.92	0	12	M	

DE0004R DEUSELBACH GERMANY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.10	0.03	0.89	0	44	W	
Cd	0.12	0.04	0.45	0	43	W	
Cr	0.25	0.01	1.20	0	44	W	
Co	6.63	0.00	100.00	0	53	W	
Cu	2.05	0.66	10.41	0	43	W	
Fe	51.7	9.0	282.0	0	44	W	
Pb	2.46	0.55	16.19	0	43	W	
Mn	4.19	0.94	19.84	0	44	W	
Ni	0.54	0.07	2.37	0	44	W	
Precip	-	0.3	85.0	4	52	W	
V	0.34	0.01	2.63	0	43	W	
Zn	19.58	6.70	92.70	0	44	W	

DE0009R ZINGST GERMANY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.14	0.07	0.28	0	12	M	
Cd	0.07	0.03	0.14	0	12	M	
Cr	0.15	0.04	0.43	0	12	M	
Cu	2.40	1.29	6.74	0	12	M	
Pb	1.46	0.58	3.26	0	12	M	
Hg	13.57	4.00	26.00	0	12	M	
Ni	0.50	0.12	0.92	0	12	M	
Precip	-	27.3	112.0	0	12	M	
Precip off	-	28.4	108.8	0	12	M	
Zn	11.03	7.70	18.44	0	12	M	

DK0031R ULBORG DENMARK

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.17	0.06	0.31	0	12	M	
Cd	0.04	0.02	0.11	0	12	M	
Cr	0.32	0.03	1.06	0	12	M	
Cu	0.93	0.29	2.73	0	12	M	
Pb	1.14	0.63	3.08	0	12	M	
Ni	0.31	0.14	0.94	0	12	M	
Precip	-	35.4	153.2	0	12	M	
Zn	10.14	2.97	21.19	0	10	M	

EE0009R LAHEMAA ESTONIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.33	0.25	1.80	91	123	D	
Cd	0.08	0.05	0.72	88	124	D	
Cr	0.52	0.50	2.50	118	124	D	
Cu	3.51	0.50	38.70	20	124	D	
Pb	0.78	0.50	6.80	94	124	D	
Ni	0.86	0.50	3.90	82	124	D	
Precip	-	0.0	43.3	214	365	D	
Zn	13.24	5.00	250.00	74	124	D	

EE0011R VILSANDI ESTONIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.26	0.10	0.60	18	46	D	
Cd	0.09	0.01	0.79	1	46	D	
Cr	0.50	0.50	1.00	45	46	D	
Cu	3.14	0.50	34.70	9	46	D	
Pb	0.86	0.50	4.40	39	46	D	
Ni	0.91	0.50	6.40	37	46	D	
Precip	-	0.0	34.6	313	365	D	
Zn	12.93	5.00	60.00	23	46	D	

FI0009R UTO FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.28	0.09	2.85	0	12	M	
Cd	0.07	0.02	0.83	0	12	M	
Cr	0.19	0.03	2.78	1	12	M	
Cu	2.08	0.78	28.45	0	12	M	
Fe	64.9	28.5	1350.0	0	12	M	
Pb	2.90	0.97	28.20	0	12	M	
Mn	3.33	1.42	58.45	0	12	M	
Ni	0.60	0.22	9.82	0	12	M	
Precip	-	1.4	91.3	0	12	M	
V	0.85	0.35	12.10	0	12	M	
Zn	8.12	4.31	81.45	0	12	M	

FI0017R VIROLAHTI II FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.23	0.04	1.09	0	12	M	
Cd	0.07	0.02	0.30	0	12	M	
Cr	0.13	0.03	0.62	2	12	M	
Cu	1.08	0.55	3.90	0	12	M	
Fe	30.3	10.0	81.4	0	12	M	
Pb	1.67	0.59	4.77	0	12	M	
Mn	2.66	1.28	7.63	0	12	M	
Ni	0.39	0.22	1.56	0	12	M	
Precip	-	15.0	158.2	0	12	M	
V	0.62	0.18	2.46	0	12	M	
Zn	8.56	4.13	22.17	0	12	M	

FI0053R HAILUOTO FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.09	0.04	0.82	0	12	M	
Cd	0.02	0.01	0.25	0	12	M	
Cr	0.05	0.03	1.66	5	12	M	
Cu	0.72	0.44	11.90	0	12	M	
Fe	14.1	1.2	332.0	1	12	M	
Pb	0.81	0.35	7.89	0	12	M	
Mn	1.51	0.54	20.30	0	12	M	
Ni	0.27	0.14	2.42	0	12	M	
Precip	-	0.5	90.4	0	12	M	
V	0.35	0.14	8.04	0	12	M	
Zn	2.87	1.79	20.80	0	12	M	

FI0092R HIETAJARVI FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.09	0.04	1.40	0	12	M	
Cd	0.03	0.01	0.50	0	12	M	
Cr	0.07	0.03	1.15	3	12	M	
Cu	0.63	0.27	19.50	0	12	M	
Fe	13.1	1.2	439.0	1	12	M	
Pb	0.98	0.37	16.20	0	12	M	
Mn	1.90	0.24	31.85	0	12	M	
Ni	0.24	0.09	3.33	0	12	M	
Precip	-	0.9	130.1	0	12	M	
V	0.28	0.14	4.69	0	12	M	
Zn	5.49	1.34	35.35	0	12	M	

FI0093R KOTINEN FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.11	0.04	0.74	0	12	M	
Cd	0.04	0.01	0.38	0	12	M	
Cr	0.06	0.03	0.56	5	12	M	
Cu	0.77	0.33	10.48	0	12	M	
Fe	12.9	1.2	192.0	1	12	M	
Pb	1.07	0.43	8.71	0	12	M	
Mn	2.57	0.59	39.95	0	12	M	
Ni	0.33	0.22	1.47	0	12	M	
Precip	-	4.2	152.1	0	12	M	
V	0.37	0.16	2.23	0	12	M	
Zn	4.55	2.47	37.10	0	11	M	

FI0094R PESOSJARVI FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.09	0.05	0.38	0	12	M	
Cd	0.02	0.01	0.09	0	12	M	
Cr	0.04	0.03	0.26	8	12	M	
Cu	0.86	0.47	2.03	0	12	M	
Fe	6.3	1.2	31.0	2	12	M	
Pb	0.66	0.27	3.44	0	12	M	
Mn	0.95	0.29	3.59	0	12	M	
Ni	0.19	0.13	0.38	0	12	M	
Precip	-	9.9	89.7	0	12	M	
V	0.17	0.10	0.68	0	12	M	
Zn	2.66	0.77	6.86	0	12	M	

FI0095R VUOSKOJARVI FINLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.17	0.03	0.64	0	12	M	
Cd	0.03	0.01	0.12	0	12	M	
Cr	0.09	0.03	0.33	5	12	M	
Cu	1.54	0.47	5.95	0	12	M	
Fe	7.4	1.2	36.4	2	12	M	
Pb	0.71	0.24	2.78	0	12	M	
Mn	0.79	0.12	3.81	0	12	M	
Ni	0.48	0.13	1.59	0	12	M	
Precip	-	5.2	76.9	0	12	M	
V	0.14	0.05	0.66	0	12	M	
Zn	1.83	0.51	4.37	0	12	M	

IE0001R VALENTIA OBS. IRELAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.25	0.25	0.25	11	11	M	1
Cd	0.12	0.03	0.64	8	12	M	
Cr	0.25	0.25	0.25	12	12	M	1
Cu	2.95	0.25	11.80	4	12	M	
Pb	0.73	0.25	5.00	8	12	M	
Ni	0.50	0.50	0.50	12	12	M	
Precip	-	30.6	220.9	0	12	M	
Zn	53.34	0.25	411.00	1	11	M	

IE0002R TURLOUGH HILL IRELAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.25	0.25	0.25	12	12	M	1
Cd	0.08	0.03	0.25	5	12	M	
Cr	0.25	0.25	0.25	12	12	M	1
Cu	0.62	0.25	1.60	6	12	M	
Pb	0.88	0.25	1.60	4	12	M	
Ni	0.55	0.50	1.00	11	12	M	
Precip	-	41.9	260.4	0	12	M	
Zn	2.63	0.90	6.00	0	12	M	

IS0002R IRAFOSS ICELAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	132.56	51.50	325.0	0	10	M	
As	0.02	0.01	0.12	9	12	M	
Cd	0.05	0.005	0.20	1	12	M	
Cr	1.13	0.03	4.20	1	12	M	
Cu	3.68	1.00	12.20	0	12	M	
Fe	145.48	50.2	549.6	0	10	M	
Pb	1.17	0.30	3.13	0	12	M	
Mn	4.00	1.40	19.10	0	10	M	
Ni	0.90	0.10	3.60	1	12	M	
Precip	-	23.6	366.6	0	12	M	
V	0.59	0.30	2.40	0	10	M	
Zn	158.67	23.00	942.0	0	12	M	

IS0090R REYKJAVIK ICELAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	88.83	20.40	318.2	0	10	M	
As	0.08	0.01	0.59	9	12	M	
Cd	0.13	0.005	0.46	2	12	M	
Cr	0.54	0.03	0.90	3	12	M	
Cu	2.59	0.50	6.10	0	12	M	
Fe	101.48	2.5	229.4	1	10	M	
Pb	0.31	0.05	0.56	2	12	M	
Mn	3.51	0.60	6.50	0	10	M	
Ni	0.46	0.12	1.00	1	12	M	
Precip	-	18.5	109.0	0	12	M	
V	0.34	0.10	0.80	0	10	M	
Zn	81.37	3.60	212.7	0	12	M	

LT0015R PREILA LITHUANIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.17	0.04	0.41	0	12	M	
Cu	1.98	0.56	10.70	0	12	M	
Pb	4.45	1.40	8.46	0	12	M	
Mn	7.37	0.79	29.70	0	12	M	
Ni	0.81	0.38	2.00	0	12	M	
Precip	-	24.6	153.9	0	12	M	
V	0.68	0.29	2.50	0	12	M	
Zn	12.33	4.83	40.20	0	12	M	

LV0010R RUCAVA LATVIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.15	0.02	0.89	0	12	M	
Cu	0.71	0.20	2.10	0	12	M	
Pb	2.83	1.00	9.40	0	12	M	
Precip	-	29.7	161.5	0	12	M	
Zn	12.86	1.30	35.80	0	12	M	

LV0016R ZOSENI LATVIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.06	0.01	0.25	0	12	M	
Cu	1.80	0.30	7.40	0	11	M	
Pb	1.93	1.00	5.10	0	12	M	
Precip	-	14.3	131.6	0	12	M	
Zn	15.02	4.60	56.10	0	12	M	

NL0009R KOLLUMERWAARD NETHERLANDS

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.13	0.07	0.85	0	11	M	
Cu	1.30	0.32	1.91	2	11	M	
Pb	2.11	1.24	3.52	0	11	M	
Precip	-	9.6	87.5	0	6	M	
Zn	10.28	3.27	45.77	1	11	M	

NO0001R BIRKENES NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.04	0.003	0.32	7	53	WC	
Pb	1.59	0.13	6.12	0	52	WC	
Precip	-	0.0	103.7	2	61	WC	
Zn	4.93	0.38	36.56	0	54	WC	

NO0039R KAARVATN NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.05	0.05	0.67	43	47	WC	
Cd	0.01	0.003	0.19	15	54	WC	
Cr	0.27	0.25	1.21	47	50	WC	
Co	0.01	0.005	0.18	32	47	WC	
Cu	0.13	0.05	1.91	16	50	WC	
Pb	0.19	0.04	3.42	0	54	WC	
Mn	0.65	0.40	11.03	37	50	WC	
Ni	0.14	0.10	1.98	38	50	WC	
Precip	-	0.1	123.9	0	63	WC	
V	0.10	0.10	0.50	44	47	WC	
Zn	1.28	0.10	48.85	1	54	WC	

NO0041R OSEN NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.03	0.003	0.47	8	44	WC	
Pb	0.87	0.06	5.59	0	44	WC	
Precip	-	0.0	65.9	3	58	WC	
Zn	4.65	0.56	18.22	0	41	WC	

NO0047R SVANVIK NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	2.34	0.22	22.20	0	46	WC	
Cd	0.11	0.003	1.48	1	51	WC	
Cr	0.39	0.10	2.94	12	51	WC	
Co	0.72	0.005	7.14	1	50	WC	
Cu	28.10	0.72	355.01	0	51	WC	
Pb	1.08	0.14	7.61	0	51	WC	
Ni	23.68	0.45	204.15	0	51	WC	
Precip	-	0.0	55.6	4	59	WC	
Zn	4.05	1.28	35.82	0	51	WC	

NO0093R VALDALEN NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.09	0.05	0.17	8	12	M	
Cd	0.03	0.01	0.09	0	12	M	
Cr	0.16	0.10	0.62	8	12	M	
Co	0.01	0.005	0.05	2	12	M	
Cu	0.57	0.14	1.30	0	12	M	
Fe	10.6	5.0	66.9	7	12	M	
Pb	0.76	0.23	2.11	0	12	M	
Mn	1.71	0.25	6.38	1	12	M	
Ni	0.17	0.10	0.52	6	12	M	
Precip	-	8.4	107.5	0	12	M	
V	0.10	0.05	0.27	8	12	M	
Zn	4.81	0.96	14.34	0	12	M	

NO0094R MOESVATN NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.07	0.05	0.19	9	12	M	
Cd	0.04	0.02	0.14	0	12	M	
Cr	0.13	0.10	0.31	11	12	M	
Co	0.03	0.005	0.17	1	12	M	
Cu	0.53	0.26	1.30	0	5	M	
Fe	6.1	5.0	37.1	10	12	M	
Pb	0.88	0.31	2.17	0	12	M	
Mn	1.32	0.25	2.20	1	12	M	
Ni	0.19	0.10	0.37	2	5	M	
Precip	-	12.5	110.0	0	12	M	
V	0.12	0.05	0.26	6	12	M	
Zn	3.81	1.97	8.76	0	5	M	

NO0095R UALAND NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.10	0.05	0.40	7	12	M	
Cd	0.02	0.003	0.08	1	12	M	
Cr	0.17	0.10	0.86	10	12	M	
Co	0.02	0.003	0.04	3	12	M	
Cu	0.30	0.14	0.75	0	12	M	
Fe	12.5	5.0	36.8	7	12	M	
Pb	1.24	0.31	4.18	0	12	M	
Mn	1.08	0.25	2.62	2	12	M	
Ni	0.19	0.10	0.50	6	12	M	
Precip	-	72.2	331.1	0	12	M	
V	0.36	0.05	1.07	1	12	M	
Zn	2.72	0.95	7.44	0	12	M	

NO0099R LISTA NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.20	0.05	1.55	15	49	WC	
Cd	0.05	0.01	0.59	0	49	WC	
Cr	0.58	0.10	1.89	10	47	WC	
Co	0.03	0.005	0.19	4	46	WC	
Cu	1.13	0.24	9.99	0	49	WC	
Pb	2.08	0.40	8.81	0	46	WC	
Hg	7.48	5.10	17.40	0	12	M	
Ni	0.59	0.10	5.84	7	47	WC	
Precip	-	0.0	88.7	2	60	WC	
V	0.53	0.05	1.69	5	47	WC	
Zn	8.73	2.33	37.82	0	46	WC	

PL0005R DIABLA GORA POLAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.22	0.10	1.60	29	88	D	
Cr	0.16	0.10	1.10	53	88	D	
Cu	1.44	0.30	11.90	0	88	D	
Pb	2.13	1.00	27.00	39	87	D	
Ni	0.41	0.15	2.10	19	88	D	
Precip	-	0.0	29.8	86	184	D	
Zn	22.88	2.70	303.00	0	89	D	

PT0001R BRAGANCA PORTUGAL

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cu	2.12	0.32	9.20	2	22	D	
Pb	0.91	0.64	4.93	20	22	D	
Mn	7.86	1.08	26.94	5	22	D	
Ni	1.12	0.77	2.77	17	22	D	
Precip	-	5.1	29.5	0	22	D	
Zn	177.49	2.00	1673.00	0	22	D	10

PT0003R V. DO CASTELO PORTUGAL

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cu	2.25	0.32	7.96	2	57	D	
Pb	0.95	0.64	3.40	45	57	D	
Mn	4.27	1.08	21.50	11	57	D	
Ni	0.90	0.77	2.68	49	57	D	
Precip	-	5.0	60.3	0	57	D	
Zn	27.06	1.00	86.00	0	57	D	

PT0004R MONTE VELHO PORTUGAL

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Cu	1.16	0.32	6.44	3	16	D	
Pb	0.70	0.64	1.51	14	16	D	
Mn	7.57	1.08	21.97	1	16	D	
Ni	0.88	0.77	2.32	14	16	D	
Precip	-	5.1	23.0	0	16	D	
Zn	16.75	6.00	54.00	0	16	D	

SE0002R RORVIK SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Hg	6.96	3.80	12.80	0	11	M	
Precip Hg	-	10.00	110.00	0	12	M	

SE0005R BREDKALEN SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.07	0.05	0.15	7	12	M	
Cd	0.03	0.01	0.18	1	12	M	
Cr	0.12	0.05	0.45	4	12	M	
Co	0.01	0.00	0.04	2	12	M	
Cu	0.94	0.05	4.64	1	12	M	
Pb	0.52	0.19	1.69	0	12	M	
Mn	3.81	0.60	38.00	0	12	M	
Hg	4.29	1.60	14.50	0	12	M	
Ni	0.13	0.06	0.29	0	12	M	
Precip	-	7.0	116.0	0	12	M	
Precip Hg	-	13.00	110.00	0	12	M	
V	0.10	0.01	0.48	0	12	M	
Zn	10.15	2.10	53.20	0	12	M	

SE0011R VAVIHILL SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Hg	8.29	3.50	17.30	0	12	M	
Precip Hg	-	24.00	107.00	0	12	M	

SE0012R ASPVRETEN SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.22	0.09	0.45	0	12	M	
Cd	0.10	0.02	0.37	0	12	M	
Cr	0.24	0.05	0.45	1	12	M	
Co	0.03	0.01	0.07	0	12	M	
Cu	3.69	0.98	8.30	0	12	M	
Pb	2.53	1.15	3.94	0	12	M	
Mn	4.61	0.70	21.70	0	12	M	
Hg	8.25	5.20	12.10	0	12	M	
Ni	0.26	0.03	0.71	2	12	M	
Precip	-	21.0	68.0	0	12	M	
Precip Hg	-	19.00	73.00	0	12	M	
V	0.50	0.21	2.06	0	12	M	
Zn	20.32	3.50	54.40	0	12	M	

SE0051R ARUP SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.15	0.05	0.36	3	12	M	
Cd	0.04	0.02	0.09	0	12	M	
Cr	0.12	0.05	0.31	4	12	M	
Co	0.02	0.01	0.05	0	12	M	
Cu	2.18	0.60	9.12	0	12	M	
Pb	2.01	0.96	4.49	0	12	M	
Mn	2.25	0.90	5.60	0	12	M	
Ni	0.24	0.03	0.46	2	12	M	
Precip	-	24.0	117.0	0	12	M	
V	0.57	0.14	1.38	0	12	M	
Zn	11.50	3.30	27.90	0	12	M	

SE0097R GÅRDSJON SWEDEN

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
As	0.13	0.05	0.48	3	11	M	
Cd	0.04	0.02	0.10	0	11	M	
Cr	0.08	0.05	0.31	5	11	M	
Co	0.02	0.00	0.03	2	11	M	
Cu	2.15	0.50	13.90	0	11	M	
Pb	1.55	0.59	3.71	0	11	M	
Mn	2.35	1.00	4.90	0	11	M	
Ni	0.22	0.08	0.40	0	11	M	
Precip	-	19.0	122.0	0	12	M	
V	0.49	0.23	0.81	0	11	M	
Zn	12.84	3.60	26.90	0	11	M	

SK0002R CHOPOK SLOVAKIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	31.29	11.00	144.00	0	12	M	
Fe	145.1	9.0	853.0	0	12	M	
Mn	5.95	2.40	11.70	0	12	M	
Precip	-	33.0	188.4	0	12	M	
Zn	43.84	18.00	92.00	0	12	M	

SK0004R STARA LESNA SLOVAKIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	16.74	7.00	80.00	0	12	M	
Fe	38.2	6.0	554.0	0	12	M	
Mn	4.19	1.80	12.00	0	12	M	
Precip	-	11.7	126.0	0	12	M	
Zn	15.71	3.00	38.00	0	12	M	

SK0005R LIESEK SLOVAKIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	23.57	9.00	72.00	0	12	M	
Fe	30.9	7.0	121.0	0	12	M	
Mn	4.96	0.80	12.90	0	12	M	
Precip	-	24.9	140.0	0	12	M	
Zn	21.37	7.00	68.00	0	12	M	

SK0006R STARINA SLOVAKIA

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
Al	28.10	8.00	90.00	0	12	M	
Fe	19.1	5.0	83.0	0	12	M	
Precip	-	36.6	156.7	0	12	M	
Zn	18.13	3.00	48.00	0	12	M	

Annex 2

Annual statistics for heavy metals in air

CZ0001R SVRATOUCH CZECH REPUBLIC

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.31	0.46	0.20	2.33	0.05	0.16	3.13	0	52	D1	
Pb	8.98	5.24	7.41	1.95	1.00	7.50	22.00	0	53	D1	

CZ0003R KOSETICE CZECH REPUBLIC

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.43	0.61	0.25	2.68	0.02	0.26	3.78	0	48	D1	
Pb	11.00	9.57	7.84	2.16	0.00	8.00	50.10	2	48	D1	

DE0001R WESTERLAND GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.15	0.12	0.12	2.24	0.03	0.11	0.44	0	12	M	
Cu	1.31	0.87	1.05	2.06	0.30	1.01	3.31	0	12	M	
Fe	99.92	50.26	88.29	1.71	32.00	99.00	201.00	0	12	M	
Pb	6.68	4.20	5.60	1.87	2.17	5.16	15.68	0	12	M	
Mn	3.74	1.55	3.41	1.59	1.32	3.90	6.51	0	12	M	
Ni	1.06	0.42	0.99	1.50	0.52	1.07	1.92	0	12	M	

DE0002R LANGENBRUGGE GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.83	0.60	0.68	1.86	0.28	0.54	2.28	0	12	M	
Cd	0.20	0.09	0.19	1.54	0.09	0.17	0.35	0	12	M	
Cu	3.13	0.64	3.07	1.23	2.11	3.05	4.15	0	12	M	
Fe	85.17	33.62	80.29	1.41	55.00	69.00	164.00	0	12	M	
Pb	9.32	4.85	8.32	1.63	4.19	7.62	18.55	0	12	M	
Mn	3.74	1.57	3.50	1.44	2.38	2.95	7.02	0	12	M	
Ni	0.78	0.29	0.74	1.39	0.48	0.69	1.49	0	12	M	

DE0003R SCHAUINSLAND GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.25	0.15	0.21	1.74	0.10	0.19	0.62	0	12	M	
Cd	0.13	0.08	0.11	1.68	0.06	0.10	0.33	0	12	M	
Cu	0.94	0.69	0.71	2.27	0.20	0.73	2.32	0	12	M	
Fe	94.00	56.84	73.17	2.34	11.00	75.00	183.00	0	12	M	
Pb	4.11	1.50	3.88	1.41	2.24	3.65	7.09	0	12	M	
Mn	2.82	1.72	2.25	2.15	0.45	2.07	6.02	0	12	M	
Ni	0.61	0.29	0.55	1.62	0.25	0.51	1.12	0	12	M	

DE0004R DEUSELBACH GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.69	0.27	0.64	1.50	0.35	0.62	1.14	0	12	M	
Cd	0.24	0.07	0.23	1.36	0.14	0.23	0.38	0	12	M	
Cu	2.97	0.64	2.91	1.23	2.19	2.69	4.30	0	12	M	
Fe	38.33	14.80	35.83	1.47	21.00	33.00	68.00	0	12	M	
Pb	11.55	2.69	11.31	1.23	8.96	10.62	18.59	0	12	M	
Mn	6.05	1.71	5.83	1.34	3.76	6.42	8.92	0	12	M	
Ni	0.88	0.24	0.86	1.30	0.59	0.81	1.35	0	12	M	

DE0005R BROTJACKLRIEGEL GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.31	0.14	0.28	1.72	0.10	0.31	0.55	0	12	M	
Cd	0.11	0.03	0.10	1.41	0.05	0.10	0.16	0	12	M	
Cu	0.66	0.50	0.47	2.60	0.06	0.60	1.85	0	12	M	
Fe	71.33	47.38	55.59	2.19	16.00	51.00	145.00	0	12	M	
Pb	5.28	1.73	4.99	1.44	2.17	5.02	8.33	0	12	M	
Mn	2.53	1.33	2.16	1.88	0.65	1.97	4.42	0	12	M	
Ni	0.83	0.25	0.79	1.35	0.54	0.72	1.23	0	12	M	

DE0007R NEUGLOBSOW GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	1.25	1.15	0.93	2.26	0.17	0.82	4.55	0	12	M	
Cd	0.29	0.14	0.26	1.69	0.09	0.26	0.58	0	12	M	
Cu	2.29	1.70	1.93	1.78	0.81	1.89	7.26	0	12	M	
Fe	82.58	27.84	78.37	1.40	49.00	70.00	125.00	0	12	M	
Pb	12.56	7.23	10.93	1.74	4.14	10.68	30.71	0	12	M	
Mn	3.73	1.10	3.60	1.31	2.53	3.47	6.27	0	12	M	
Ni	1.32	0.30	1.29	1.26	0.85	1.25	1.79	0	12	M	

DE0008R SCHMUCKE GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.50	0.20	0.46	1.59	0.20	0.52	0.84	0	12	M	
Cd	0.15	0.04	0.15	1.25	0.11	0.15	0.22	0	12	M	
Cu	1.01	0.53	0.88	1.77	0.38	0.75	1.89	0	12	M	
Fe	76.50	54.17	55.51	2.49	14.00	79.00	167.00	0	12	M	
Pb	6.35	1.74	6.13	1.33	3.47	6.12	9.85	0	12	M	
Mn	3.27	1.65	2.84	1.79	1.09	3.22	5.97	0	12	M	
Ni	0.67	0.44	0.56	1.86	0.21	0.55	1.85	0	12	M	

DE0009R ZINGST GERMANY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.66	0.41	0.54	1.94	0.19	0.53	1.46	0	12	M	
Cd	0.19	0.14	0.15	2.01	0.05	0.17	0.55	0	12	M	
Cu	2.11	1.01	1.92	1.54	0.95	1.85	4.68	0	12	M	
Fe	82.00	24.92	78.78	1.34	49.00	75.00	127.00	0	12	M	
Pb	8.73	6.32	7.06	1.97	2.50	6.70	25.20	0	12	M	
Mn	3.05	0.93	2.94	1.34	1.92	2.73	5.08	0	12	M	
Ni	1.70	0.58	1.61	1.43	0.79	1.53	2.73	0	12	M	

DK0005R KELDSNOR DENMARK

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cu	1.69	3.17	0.88	3.33	0.005	0.94	51.25	102	365	D	
Pb	8.01	11.21	3.74	3.82	0.01	4.14	81.06	15	365	D	
Ni	1.77	2.44	1.12	2.78	0.02	1.24	38.85	65	365	D	
Zn	14.48	17.77	7.78	3.46	0.01	8.33	156.53	47	365	D	

DK0008R ANHOLT DENMARK

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cu	0.99	1.39	0.53	3.21	0.01	0.58	10.53	160	359	D	
Pb	4.63	7.35	2.09	3.64	0.03	2.21	62.43	31	359	D	
Ni	1.26	1.27	0.79	3.01	0.01	0.90	12.86	80	359	D	
Zn	9.08	10.80	5.35	3.00	0.10	5.66	82.93	63	359	D	

DK0031R ULBORG DENMARK

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.46	1.00	0.20	3.54	0.00	0.21	9.97	77	356	D	
Cd	0.24	0.24	0.14	3.27	0.00	0.19	1.73	301	356	D	
Cr	0.48	0.97	0.24	3.53	0.00	0.28	12.02	272	356	D	
Cu	1.16	1.92	0.50	4.25	0.004	0.57	15.09	91	356	D	
Pb	6.30	11.69	2.30	4.86	0.005	2.70	112.74	24	356	D	
Ni	0.98	1.08	0.54	3.63	0.00	0.67	7.28	89	356	D	
Zn	11.85	16.90	5.68	3.97	0.01	6.34	163.05	37	356	D	

IS0091R STORHOFDI ICELAND

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Al	263.97	215.95	140.88	6.45	0.08	148.96	656.39	0	22	W2	
As	0.05	0.04	0.04	2.42	0.01	0.04	0.17	0	22	W2	
Cd	0.10	0.15	0.03	4.31	0.00	0.01	0.56	0	22	W2	
Cr	7.95	9.13	1.85	15.87	0.00	2.14	27.71	0	22	W2	
Cu	0.67	0.56	0.50	2.14	0.10	0.44	2.56	0	22	W2	
Fe	512.83	466.29	339.17	2.62	66.90	230.90	1860.20	0	22	W2	
Pb	0.74	0.56	0.61	1.81	0.29	0.56	2.44	0	22	W2	
Mn	8.18	6.94	5.75	2.42	1.26	4.57	27.79	0	22	W2	
Hg (part)	1.37	0.61	1.25	1.52	0.66	1.23	2.90	0	22	W2	
Ni	6.75	7.07	3.24	3.93	0.28	2.89	22.34	0	22	W2	
V	1.76	1.73	0.79	5.67	0.01	0.90	6.17	0	22	W2	
Zn	6.69	6.14	4.90	2.18	1.47	3.90	24.20	0	22	W2	

LT0015R PREILA LITHUANIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.32	0.23	0.25	2.11	0.03	0.28	1.33	0	41	W	
Cu	2.32	1.25	2.05	1.65	0.81	2.07	6.07	0	41	W	
Pb	8.41	5.00	6.84	2.01	1.39	7.35	21.88	0	41	W	
Mn	3.34	3.11	2.60	1.92	0.83	2.20	15.98	0	41	W	
V	3.42	2.30	2.88	1.77	0.94	2.58	11.82	0	41	W	
Zn	20.49	9.39	17.86	1.82	1.98	17.84	38.19	0	41	W	

LV0010R RUCAVA LATVIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.22	0.29	0.11	3.40	0.01	0.12	1.19	8	23	W	
Cu	1.10	1.27	0.67	2.77	0.10	0.60	5.30	7	23	W	
Pb	2.84	4.85	1.16	3.74	0.10	1.10	17.80	5	23	W	
Zn	22.36	30.58	10.10	3.94	0.50	7.85	123.50	4	23	W	

LV0016R ZOSENI LATVIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.20	0.16	0.15	2.12	0.05	0.14	0.73	1	44	W	
Cu	0.86	0.45	0.76	1.67	0.30	0.80	2.20	8	44	W	
Pb	2.44	1.89	1.93	1.98	0.50	1.90	8.60	0	44	W	
Zn	14.77	26.01	9.54	2.13	2.90	8.85	165.30	0	41	W	

NL0009R KOLLUMERWAARD NETHERLANDS

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.60	0.84	0.38	2.42	0.13	0.39	8.14	53	181	D	
Cd	0.20	0.27	0.11	2.70	0.04	0.11	2.48	66	181	D	
Pb	9.68	10.60	6.17	2.66	0.38	6.41	83.94	0	181	D	
Zn	29.51	23.00	22.70	2.09	2.58	22.49	121.25	1	181	D	

NO0042G SPITZBERGEN NORWAY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.12	0.24	0.04	4.00	0.01	0.04	1.29	15	52	D2	
Cd	0.03	0.06	0.01	4.34	0.00	0.01	0.25	11	52	D2	
Cr	0.16	0.39	0.08	2.60	0.04	0.04	2.80	36	52	D2	
Co	0.14	0.38	0.05	3.60	0.02	0.03	2.50	25	52	D2	
Cu	0.36	0.28	0.28	2.06	0.02	0.26	1.39	1	52	D2	
Pb	0.71	1.37	0.25	4.07	0.02	0.23	6.27	1	52	D2	
Mn	0.34	0.37	0.19	3.23	0.02	0.20	1.55	4	52	D2	
Hg	1.55	0.45	1.48	1.37	0.72	1.62	2.65	0	53	D2	
Ni	0.12	0.14	0.07	2.99	0.02	0.07	0.64	23	52	D2	
V	0.11	0.14	0.05	3.79	0.00	0.07	0.84	7	52	D2	
Zn	1.38	1.49	0.90	2.60	0.09	0.83	7.40	3	52	D2	

NO0099R LISTA NORWAY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
As	0.27	0.14	0.23	1.81	0.07	0.23	0.53	0	12	M	
Cd	0.12	0.24	0.06	2.70	0.02	0.05	0.88	0	12	M	
Cr	1.54	1.00	1.34	1.65	0.83	1.12	3.66	0	12	M	
Cu	0.79	0.28	0.74	1.51	0.36	0.80	1.23	0	12	M	
Pb	2.53	1.22	2.24	1.71	0.88	2.44	4.37	0	12	M	
Hg	1.84	0.64	1.75	1.37	1.25	1.62	3.35	0	11	M	
Ni	0.62	0.30	0.56	1.58	0.26	0.55	1.32	0	12	M	
V	1.21	0.50	1.10	1.64	0.36	1.16	2.05	0	12	M	
Zn	5.63	2.04	5.26	1.49	2.65	5.56	8.61	0	12	M	

SE0002R RORVIK SWEDEN

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Hg	1.25	0.31	1.21	1.27	0.70	1.20	2.30	0	86	D1	

SK0002R CHOPOK SLOVAKIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.12	0.09	0.19	1.68	0.00	0.10	0.30	2	11	M	
Cr	8.19	9.10	4.40	3.22	1.30	2.20	24.00	0	11	M	
Cu	8.24	14.53	4.52	2.47	2.10	3.15	51.60	0	11	M	
Pb	3.29	2.24	2.72	1.92	0.80	2.55	8.90	0	11	M	
Mn	5.53	6.07	3.33	2.86	0.80	1.90	20.40	0	11	M	
Ni	4.46	5.36	2.04	3.88	0.30	1.15	14.70	0	11	M	
Zn	39.83	13.65	37.25	1.50	18.80	45.60	56.50	0	11	M	

SK0004R STARA LESNA SLOVAKIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.44	0.16	0.42	1.43	0.20	0.40	0.80	0	12	M	
Cr	0.85	0.48	0.74	1.75	0.40	0.50	1.60	0	12	M	
Cu	5.27	2.32	4.87	1.50	3.10	4.20	9.60	0	12	M	
Pb	26.02	18.34	21.56	1.84	9.90	17.70	64.70	0	12	M	
Mn	4.75	1.33	4.59	1.31	2.80	4.20	8.00	0	12	M	
Ni	0.69	0.43	0.55	2.10	0.20	0.60	1.40	0	12	M	
V	1.27	0.53	1.17	1.57	0.50	1.20	2.20	0	12	M	
Zn	62.89	36.18	56.00	1.60	34.30	49.50	152.90	0	12	M	

SK0005R LIESEK SLOVAKIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.44	0.08	0.44	1.21	0.30	0.40	0.60	0	11	M	
Cr	2.50	1.39	2.23	1.62	1.10	2.10	6.10	0	11	M	
Cu	21.48	11.02	19.41	1.59	9.70	18.25	49.30	0	11	M	
Pb	14.65	2.73	14.41	1.21	10.00	14.55	19.30	0	11	M	
Mn	20.25	7.15	19.22	1.40	11.50	17.00	34.70	0	11	M	
Ni	1.51	1.69	0.93	2.93	0.10	0.85	5.90	0	11	M	
V	2.18	0.91	2.03	1.49	1.30	1.70	3.80	0	11	M	
Zn	59.38	15.15	57.61	1.30	31.60	58.65	94.20	0	11	M	

SK0006R STARINA SLOVAKIA

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samples	Samp flag	QA flag
Cd	0.47	0.21	0.43	1.57	0.20	0.40	0.90	0	11	M	
Cr	1.70	1.50	1.18	2.45	0.40	0.95	4.70	0	11	M	
Cu	3.69	1.15	3.54	1.36	2.20	3.50	6.10	0	11	M	
Pb	20.35	7.61	18.93	1.51	9.20	19.05	31.20	0	11	M	
Mn	3.57	1.46	3.26	1.63	1.00	3.40	6.30	0	11	M	
Ni	0.68	0.46	0.54	2.25	0.20	0.40	1.20	0	4	M	
V	2.09	0.93	1.90	1.62	0.80	2.00	4.00	0	11	M	
Zn	45.00	15.62	42.56	1.42	26.70	39.60	71.50	0	11	M	

Annex 3

Annual statistics for POPs in precipitation

DE0001R WESTERLAND GERMANY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
HCB	0.129	0.030	0.730	6	12	M	
alpha_HCH	0.622	0.180	1.100	0	12	M	
gamma_HCH	6.389	0.950	36.000	0	12	M	
pp_DDD	0.070	0.070	0.070	12	12	M	
pp_DDE	0.204	0.070	1.900	9	12	M	
pp_DDT	0.593	0.070	6.400	9	12	M	
PCB_101	0.060	0.030	0.070	12	12	M	
PCB_118	0.070	0.070	0.070	2	5	M	
PCB_118	0.070	0.070	0.070	2	5	M	
PCB_138	0.115	0.070	0.600	10	12	M	
PCB_153	0.106	0.070	0.450	9	12	M	
PCB_28	0.054	0.010	0.070	12	12	M	
PCB_52	0.134	0.070	0.520	11	12	M	
anthracene	1.176	0.330	10.000	2	11	M	
benzo_a_anthracene	12.909	0.670	166.000	3	11	M	
benzo_a_pyrene	5.799	0.670	62.000	2	11	M	
benzo_b_fluoranthene	8.670	1.500	76.000	0	11	M	
benzo_ghi_perylene	4.808	0.700	40.000	0	11	M	
benzo_k_fluoranthene	4.316	0.670	41.000	3	11	M	
chrysene	15.942	1.200	168.000	0	11	M	
dibenzo_ah_anthracene	1.373	0.670	8.000	6	11	M	
dieldrin	0.095	0.070	0.330	10	12	M	
fluoranthene	25.736	1.330	277.000	2	11	M	
heptachlor	0.110	0.010	0.130	12	12	M	
inden_123cd_pyrene	3.834	3.330	17.000	9	11	M	
phenanthrene	29.713	4.000	175.000	0	8	M	
pyrene	20.923	1.330	203.000	1	11	M	
Precip	-	13.2	154.6	0	12	M	
Precip off	-	11.0	149.0	0	12	M	

DE0009R ZINGST GERMANY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
HCB	0.071	0.030	0.550	7	12	M	
op_DDT	0.562	0.290	1.200	0	5	M	
pp_DDT	0.591	0.070	2.300	7	12	M	
PCB_101	0.128	0.030	0.840	8	12	M	
PCB_118	0.102	0.070	0.270	3	5	M	
PCB_138	0.181	0.070	0.860	7	12	M	
PCB_153	0.135	0.070	0.680	7	12	M	
PCB_180	0.125	0.070	0.590	8	12	M	
PCB_28	0.093	0.010	0.500	3	5	M	
PCB_52	0.163	0.070	0.750	9	12	M	
sum_PCB	0.787	0.410	2.950	0	12	M	
aldrin	0.059	0.010	0.210	11	12	M	
anthracene	2.043	0.500	4.900	0	12	M	
benzo_a_anthracene	6.357	0.700	16.300	3	12	M	
benzo_a_pyrene	5.821	1.800	10.600	0	12	M	
benzo_b_fluoranthene	12.306	3.200	33.100	0	12	M	
benzo_ghi_perylene	8.448	3.500	14.700	0	12	M	
benzo_k_fluoranthene	5.079	0.700	13.200	3	12	M	
chrysene	13.166	2.700	36.300	0	12	M	
dibenzo_ah_anthracene	1.466	0.700	2.800	3	12	M	
dieldrin	0.129	0.070	0.590	9	11	M	
endrin	0.086	0.070	0.130	11	11	M	
fluoranthene	29.784	1.300	93.500	1	12	M	
heptachlor	0.096	0.010	0.130	11	12	M	
inden_123cd_pyrene	7.538	3.300	16.900	8	12	M	
phenanthrene	40.509	3.500	100.100	0	10	M	
pyrene	21.765	8.600	69.600	0	12	M	
Precip	-	15.2	190.0	0	12	M	

IS0091R STORHOFDI ICELAND

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
HCB	0.026	0.003	0.198	1	24	W2	
alpha_HCH	0.285	0.149	0.531	0	24	W2	
beta_HCH	0.003	0.002	0.008	24	24	W2	
cis_CD	0.007	0.001	0.018	19	24	W2	
gamma_HCH	0.179	0.002	3.112	6	24	W2	
op_DDT	0.004	0.001	0.114	20	24	W2	
pp_DDD	0.005	0.004	0.057	18	24	W2	
pp_DDE	0.005	0.003	0.030	17	24	W2	
pp_DDT	0.015	0.004	0.314	16	24	W2	
trans_CD	0.001	0.001	0.001	24	24	W2	
trans_NO	0.002	0.001	0.005	24	24	W2	
PCB_101	0.003	0.001	0.057	21	24	W2	
PCB_105	0.008	0.001	0.033	18	24	W2	
PCB_118	0.008	0.001	0.143	14	24	W2	
PCB_138	0.007	0.001	0.094	21	24	W2	
PCB_153	0.004	0.001	0.044	22	24	W2	
PCB_156	0.006	0.001	0.028	17	24	W2	
PCB_180	0.013	0.001	0.061	15	24	W2	
PCB_28	0.025	0.016	0.186	24	24	W2	
PCB_31	0.014	0.007	0.127	24	24	W2	
PCB_52	0.012	0.003	0.500	23	24	W2	
dieldrin	0.039	0.014	0.076	5	24	W2	
Precip off	-	5.0	167.0	0	24	W2	

LT0015R PREILA LITHUANIA

January 1998 - December 1998

Component (ug/m2 year)	Mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
benzo_a_pyrene	1.751	1.080	3.550	0	11	M	8

NO0099R LISTA NORWAY

January 1998 - December 1998

Component	W. mean	Min	Max	Num bel	Num samples	Samp flag	QA flag
HCB	0.733	0.140	5.540	0	56	D2	
alpha_HCH	1.004	0.390	4.060	1	56	D2	
gamma_HCH	5.260	0.500	53.300	0	56	D2	
Precip	-	0.0	43.8	3	56	D2	

Annex 4

Annual statistics for POPs in air

CS0003R KOSETICE CZECH REPUBLIC

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samp	Samp flag	QA flag
alpha_HCH	53.588	32.892	46.447	1.680	16.000	43.500	169.000	0	51	W	
gamma_HCH	127.235	154.569	59.457	4.164	2.000	65.000	699.000	0	51	W	
pp_DDD	2.000	0.000	2.000	1.000	2.000	2.000	2.000	26	26	W	
pp_DDE	42.462	37.629	31.382	2.206	4.000	31.000	213.000	0	52	W	
pp_DDT	4.000	0.000	4.000	1.000	4.000	4.000	4.000	26	26	W	
PCB_101	26.843	12.556	24.311	1.567	9.000	24.000	69.000	0	51	W	
PCB_118	2.961	1.766	2.456	1.899	1.000	3.000	8.000	14	51	W	
PCB_138	26.510	12.547	23.970	1.574	8.000	22.500	72.000	0	51	W	
PCB_180	15.706	8.864	13.885	1.633	4.000	13.000	55.000	0	51	W	
PCB_28	38.706	30.402	30.817	1.934	10.000	28.000	164.000	0	51	W	
PCB_52	36.490	19.884	31.877	1.694	12.000	32.500	107.000	0	51	W	
acenaphtene	0.217	0.330	0.100	3.369	0.010	0.070	1.740	1	52	W	
antracene	0.205	0.251	0.116	2.838	0.030	0.100	1.090	0	52	W	
benz_a_antracene	0.382	0.684	0.100	5.682	0.010	0.110	3.110	7	52	W	
benzo_a_pyrene	0.320	0.566	0.085	5.945	0.010	0.090	3.140	16	52	W	
fluoranthene	2.314	2.777	1.225	3.248	0.200	1.370	12.980	0	52	W	
fluorene	2.747	3.522	1.468	3.081	0.250	1.280	17.180	0	52	W	
iden_123cd_pyrene	0.416	0.682	0.114	6.143	0.010	0.130	3.180	13	52	W	
naphtalene	0.776	1.546	0.281	4.167	0.020	0.290	8.160	0	52	W	
phenanthrene	6.007	6.181	3.843	2.602	0.770	3.380	27.890	0	52	W	
pyrene	1.523	1.946	0.711	3.752	0.100	0.710	8.560	0	52	W	

IS0091R STORHOFDI ICELAND

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samp	Samp flag	QA flag
HCB	12.999	16.012	7.582	2.720	2.108	5.850	64.912	0	22	W2	
alpha_HCH	14.870	12.219	11.623	2.012	3.690	11.877	57.895	0	22	W2	
aop_DDE	0.000	0.000	1.000	1.000	0.000	0.000	0.000	22	22	W2	
beta_HCH	0.259	0.039	0.255	1.204	0.134	0.269	0.319	5	22	W2	
cis_CD	0.594	0.307	0.498	1.944	0.117	0.639	1.178	4	22	W2	
gamma_HCH	5.258	3.057	3.986	2.545	0.334	4.392	10.187	2	22	W2	
op_DDT	0.215	0.288	0.135	2.338	0.067	0.127	1.222	12	22	W2	
pp_DDD	0.657	1.061	0.373	2.377	0.244	0.244	4.512	19	22	W2	
pp_DDE	0.306	0.299	0.226	2.062	0.139	0.139	1.230	16	22	W2	
pp_DDT	1.799	3.659	0.303	6.182	0.088	0.088	13.125	16	22	W2	
trans_CD	0.139	0.014	0.138	1.091	0.134	0.134	0.185	22	22	W2	
trans_NO	0.292	0.143	0.259	1.672	0.151	0.240	0.556	11	22	W2	
PCB_101	0.223	0.190	0.156	2.371	0.067	0.101	0.586	13	22	W2	
PCB_105	0.145	0.160	0.087	2.629	0.046	0.046	0.455	16	22	W2	
PCB_118	0.112	0.166	0.069	2.255	0.047	0.047	0.712	21	22	W2	
PCB_138	0.073	0.133	0.050	1.790	0.043	0.043	0.667	22	22	W2	
PCB_153	0.135	0.154	0.094	2.171	0.050	0.082	0.667	22	22	W2	
PCB_180	0.194	0.702	0.053	2.593	0.041	0.041	3.337	21	22	W2	
PCB_28	5.278	6.861	1.791	5.453	0.234	2.315	25.907	16	22	W2	
PCB_31	2.222	8.103	0.518	2.966	0.319	0.319	38.468	21	22	W2	
PCB_52	0.318	0.312	0.246	1.877	0.160	0.177	1.430	21	22	W2	
dieldrin	0.969	0.447	0.865	1.653	0.466	1.028	1.781	0	22	W2	

NO0042G SPITZBERGEN NORWAY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samp	Samp flag	QA flag
HCB	82.313	17.013	80.212	1.279	27.200	83.300	118.000	0	47	D2	
alpha_HCH	37.865	11.436	34.961	1.638	4.280	38.850	60.600	0	47	D2	
cis_cd	0.761	0.346	0.685	1.644	0.090	0.670	1.890	1	47	D2	
cis_no	0.086	0.058	0.068	2.098	0.010	0.070	0.220	1	47	D2	
gamma_HCH	9.528	4.398	8.570	1.623	2.220	8.440	23.400	0	46	D2	
op_DDD	0.063	0.080	0.045	2.113	0.010	0.040	0.540	0	47	D2	
op_DDE	0.180	0.095	0.153	1.884	0.030	0.175	0.510	0	47	D2	
op_DDT	0.481	0.259	0.404	2.077	0.010	0.435	1.340	0	47	D2	
pp_DDD	0.059	0.074	0.044	1.933	0.020	0.035	0.490	0	47	D2	
pp_DDE	0.931	0.514	0.772	1.937	0.210	0.895	1.970	0	47	D2	
pp_DDT	0.471	0.363	0.362	2.071	0.110	0.335	1.590	0	47	D2	
trans_cd	0.342	0.222	0.272	2.102	0.030	0.270	0.920	0	47	D2	
trans_no	0.556	0.274	0.495	1.672	0.070	0.485	1.500	1	47	D2	
PCB_101	1.452	1.999	0.857	2.522	0.260	0.560	10.200	0	48	D2	
PCB_105	0.530	0.756	0.259	3.178	0.050	0.240	3.290	0	48	D2	
PCB_114	0.040	0.062	0.023	2.549	0.010	0.020	0.380	0	48	D2	
PCB_118	1.034	1.439	0.555	2.833	0.120	0.440	6.060	0	48	D2	
PCB_122	0.023	0.027	0.016	2.126	0.010	0.010	0.160	0	48	D2	
PCB_123	0.034	0.049	0.020	2.498	0.010	0.010	0.240	0	48	D2	
PCB_128	0.423	0.591	0.194	3.578	0.010	0.200	2.620	0	48	D2	
PCB_138	1.508	2.077	0.753	3.164	0.130	0.700	9.150	0	48	D2	
PCB_141	0.352	0.467	0.183	3.082	0.030	0.160	2.060	0	48	D2	
PCB_149	1.405	1.941	0.752	2.855	0.170	0.570	8.130	0	48	D2	
PCB_153	1.310	1.734	0.726	2.808	0.150	0.610	7.510	0	48	D2	
PCB_156	0.168	0.223	0.080	3.463	0.010	0.080	0.960	0	48	D2	
PCB_157	0.037	0.046	0.022	2.572	0.010	0.020	0.180	0	48	D2	
PCB_167	0.067	0.085	0.037	2.920	0.010	0.030	0.350	0	48	D2	
PCB_170	0.139	0.149	0.085	2.739	0.010	0.070	0.620	0	48	D2	
PCB_18	32.129	60.967	13.257	3.471	1.880	12.400	292.000	0	48	D2	
PCB_180	0.328	0.368	0.193	2.897	0.010	0.170	1.540	0	48	D2	
PCB_183	0.133	0.159	0.080	2.656	0.020	0.070	0.670	0	48	D2	
PCB_187	0.249	0.288	0.156	2.534	0.040	0.140	1.270	0	48	D2	
PCB_189	0.011	0.006	0.011	1.326	0.010	0.010	0.050	0	48	D2	
PCB_194	0.019	0.018	0.017	1.928	0.000	0.010	0.080	1	48	D2	
PCB_206	0.011	0.004	0.011	1.293	0.010	0.010	0.030	0	48	D2	
PCB_209	0.013	0.009	0.012	1.496	0.010	0.010	0.050	0	48	D2	
PCB_28	13.275	26.774	5.490	3.265	0.870	5.020	137.000	0	48	D2	
PCB_31	13.775	26.729	5.867	3.246	0.960	5.600	137.000	0	48	D2	
PCB_33	9.957	18.501	4.509	3.165	0.700	4.440	99.700	0	48	D2	
PCB_37	1.166	2.101	0.544	3.085	0.080	0.470	10.200	0	48	D2	
PCB_47	1.774	2.777	1.046	2.457	0.270	0.940	15.200	0	48	D2	
PCB_52	3.320	5.040	2.068	2.298	0.580	1.890	27.400	0	48	D2	
PCB_60	0.271	0.435	0.149	2.615	0.040	0.100	2.170	0	48	D2	
PCB_66	1.049	1.631	0.608	2.497	0.170	0.430	8.250	0	48	D2	
PCB_74	0.613	0.882	0.381	2.358	0.120	0.290	4.480	0	48	D2	
PCB_99	0.484	0.590	0.324	2.224	0.130	0.240	2.910	0	48	D2	
acenaphtene	0.049	0.215	0.011	3.084	0.003	0.008	1.407	18	43	D2	
acenaphtylene	0.006	0.008	0.005	2.783	0.000	0.005	0.046	22	43	D2	
anthanthrene	0.004	0.006	0.015	4.900	0.000	0.005	0.035	38	42	D2	
anthracene	0.007	0.007	0.005	2.647	0.000	0.005	0.031	23	43	D2	
benz_a_anthracene	0.009	0.017	0.007	3.049	0.000	0.004	0.093	20	41	D2	
benzo_a_fluoranthene	0.013	0.053	0.028	4.375	0.000	0.005	0.326	32	38	D2	
benzo_a_fluorene	0.008	0.011	0.005	2.879	0.000	0.005	0.053	18	43	D2	
benzo_a_pyrene	0.011	0.019	0.010	2.630	0.000	0.005	0.107	22	38	D2	
benzo_b_fluorene	0.004	0.005	0.015	3.941	0.000	0.005	0.029	27	43	D2	
benzo_bjk_fluoranthenes	0.044	0.088	0.027	4.931	0.000	0.005	0.436	22	38	D2	
benzo_e_pyrene	0.014	0.024	0.011	3.224	0.000	0.005	0.122	22	38	D2	
benzo_ghi_fluoranthene	0.013	0.019	0.007	3.472	0.000	0.005	0.097	16	41	D2	
benzo_ghi_perylene	0.016	0.021	0.013	3.110	0.000	0.005	0.108	19	42	D2	
biphenyl	1.306	1.605	0.732	3.156	0.080	0.878	9.470	0	43	D2	
chrysene_triphenylene	0.023	0.041	0.008	4.042	0.001	0.005	0.202	16	40	D2	
N2methylphenanthrene	0.016	0.019	0.011	2.215	0.003	0.010	0.094	5	43	D2	
N2metylanthrachene	0.005	0.005	0.004	2.232	0.001	0.005	0.026	17	43	D2	
N2metylphenanthrene	0.019	0.028	0.012	2.490	0.001	0.011	0.178	6	43	D2	
N3metylphenanthrene	0.014	0.023	0.009	2.336	0.001	0.008	0.152	7	43	D2	
N9metylphenanthrene	0.015	0.023	0.010	2.233	0.003	0.008	0.133	11	43	D2	
coronene	0.006	0.008	0.009	3.569	0.000	0.005	0.035	30	42	D2	
cyklopenta_cd_pyrene	0.007	0.010	0.020	4.091	0.000	0.005	0.048	27	41	D2	
dibenz(ae)pyrene	0.006	0.010	0.005	3.442	0.000	0.004	0.064	36	42	D2	
dibenz(ah)pyrene	0.007	0.011	0.004	3.719	0.000	0.005	0.071	42	42	D2	
dibenz(ai)pyrene	0.008	0.013	0.004	3.315	0.000	0.003	0.081	42	42	D2	
dibenzo_ac_ah_anthracenes	0.004	0.005	0.027	5.208	0.000	0.005	0.029	37	42	D2	
dibenzofuran	1.398	1.372	0.712	4.038	0.015	0.997	5.156	0	43	D2	
dibenzothiophene	0.033	0.036	0.019	3.113	0.001	0.019	0.182	3	43	D2	
fluoranthene	0.069	0.121	0.027	3.759	0.003	0.015	0.650	4	43	D2	
fluorene	0.458	0.569	0.200	4.179	0.010	0.236	2.410	0	43	D2	
inden_123cd_pyrene	0.012	0.022	0.024	4.365	0.000	0.005	0.122	27	42	D2	
n1_methylnaphtalene	0.642	0.880	0.389	2.593	0.074	0.326	5.150	0	43	D2	
n2_methylnaphtalene	0.907	1.259	0.570	2.459	0.140	0.518	7.770	0	43	D2	
naphtalene	2.222	3.111	1.312	2.734	0.220	1.461	19.161	0	43	D2	
perylene	0.040	0.168	0.020	4.503	0.000	0.005	1.000	31	39	D2	
phenanthrene	0.166	0.173	0.107	2.825	0.002	0.096	0.857	0	42	D2	
pyrene	0.042	0.076	0.015	3.829	0.002	0.008	0.400	5	43	D2	
rethene	0.003	0.003	0.010	3.892	0.000	0.004	0.012	31	43	D2	

NO0099R LISTA NORWAY

January 1998 - December 1998

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	50%	Max	Num bel	Num samp	Samp flag	QA flag
HCB	93.045	20.036	91.380	1.200	71.600	87.700	174.000	0	53	W	
alpha_HCH	35.849	16.405	33.186	1.461	16.500	33.000	108.000	0	53	W	
gamma_HCH	53.263	67.070	34.459	2.350	9.940	28.800	405.000	0	53	W	

Annex 5

Monthly mean values for heavy metals in precipitation

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
CZ0001R	cadmium	0.479	0.752	0.338	0.077	0.258	0.060	0.109	0.081	0.229	0.105	0.077	0.316	*
CZ0001R	lead	9.453	9.796	4.749	2.780	7.337	2.772	1.896	3.903	2.117	1.968	1.760	3.957	*
CZ0001R	nickel	2.619	2.054	1.213	1.000	1.000	1.000	1.000	1.000	1.006	1.000	1.000	1.000	*
CZ0001R	precipitation_amount	33.843	16.029	81.986	39.586	28.843	164.395	152.019	43.214	146.129	109.443	49.500	51.129	*
CZ0003R	cadmium	0.171	0.07	0.099	0.198	0.086	0.331	0.169	0.22	0.166	0.375	0.533	0.189	
CZ0003R	lead	4.992	1.087	1.215	8.501	1	1.422	1.612	6.788	5.242	3.445	4.224	2.921	
CZ0003R	nickel	1.414	1	1.143	1	1	1.046	1	1.631	1.015	1.052	2.267	1	
CZ0003R	precipitation_amount	18.9	10.5	64.5	20.2	48.3	92	84.5	59.2	80.6	93.2	35	20.9	
DE0001R	arsenic	0.14	0.28	0.22	0.17	0.23	0.15	0.08	0.1	0.19	0.15	0.13	0.09	
DE0001R	cadmium	0.05	0.1	0.11	0.1	0.13	0.17	0.16	0.13	0.11	0.08	0.08	0.13	
DE0001R	chromium	0.32	0.3	0.43	0.2	0.31	0.28	0.25	0.19	0.05	0.02	0.01	0.04	
DE0001R	copper	1.65	2.15	3.02	2.36	3.36	2.02	2.34	1.83	2.76	2.39	7.72	8.96	
DE0001R	lead	1.87	2.66	3.34	2.51	3.47	1.18	0.86	1.29	1.56	1.4	0.68	1.42	
DE0001R	mercury	9	20	17	11	17	14	9	7	10	7	4	7	
DE0001R	nickel	0.72	0.88	1.05	1.17	1.51	0.95	0.71	0.81	0.94	1.19	1.58	1.33	
DE0001R	precipitation_amount	74	30.3	43.9	70.2	13.2	56.9	101.1	66.5	85.6	154.6	65	50.5	
DE0001R	precipitation_amount_off	61.9	23.5	30.1	56.1	11	46.4	92	52.6	75.2	149	57.7	47.2	
DE0001R	zinc	8.4	21.03	17.62	14.63	17.41	19.67	29.92	15.02	20.4	11.03	21.5	16.36	
DE0004R	arsenic	0.089	0.176	0.134	0.114	0.122	0.112	0.125	0.086	0.116	0.072	0.123	0.108	*
DE0004R	cadmium	0.196	0.297	0.237	0.131	0.145	0.154	0.130	0.092	0.129	0.071	0.069	0.111	*
DE0004R	chromium	0.554	0.464	0.368	0.314	0.332	0.387	0.404	0.275	0.263	0.020	0.087	0.022	*
DE0004R	cobalt	64.491	0.109	0.067	0.011	0.059	6.077	0.163	3.008	0.028	0.006	4.453	0.004	*
DE0004R	copper	2.488	6.329	1.555	1.416	1.909	1.947	3.177	1.444	1.631	1.879	2.028	3.773	*
DE0004R	iron	72.080	91.194	88.256	49.139	62.164	106.832	61.646	33.832	50.324	24.208	35.998	16.524	*
DE0004R	lead	2.524	2.926	2.994	3.335	3.483	3.851	2.538	1.575	2.497	1.280	2.126	2.108	*
DE0004R	manganese	2.665	9.368	6.154	3.591	5.347	7.279	7.721	5.257	5.272	1.753	3.584	1.831	*
DE0004R	nickel	0.829	1.663	0.697	0.612	0.436	0.707	0.708	0.461	0.723	0.150	0.372	0.544	*
DE0004R	precipitation_amount	58.967	10.067	58.550	102.733	52.400	52.433	52.900	23.467	95.400	171.433	49.567	34.650	*
DE0004R	vanadium	0.225	0.732	0.489	0.371	0.427	0.448	0.509	0.339	0.457	0.101	0.366	0.340	*
DE0004R	zinc	24.464	46.167	25.627	16.715	19.385	22.314	38.625	25.101	19.770	11.130	9.901	18.190	*
DE0009R	arsenic	0.11	0.21	0.1	0.28	0.25	0.18	0.1	0.09	0.09	0.07	0.2	0.1	
DE0009R	cadmium	0.06	0.14	0.09	0.11	0.12	0.07	0.09	0.05	0.03	0.03	0.06	0.03	
DE0009R	chromium	0.3	0.43	0.21	0.2	0.4	0.16	0.09	0.11	0.11	0.04	0.09	0.1	
DE0009R	copper	2.63	5.32	2.61	1.7	2.52	1.78	1.63	3.67	1.37	1.29	2.31	6.74	
DE0009R	lead	1.93	3.22	1.83	2.25	3.26	1.31	1.07	1.09	0.94	0.58	1.81	1	
DE0009R	mercury	9	15	8	12	26	24	22	13	11	6	11	4	
DE0009R	nickel	0.56	0.92	0.54	0.48	0.71	0.48	0.44	0.45	0.42	0.49	0.69	0.12	
DE0009R	precipitation_amount	59.8	50.7	57.1	71.9	27.3	95.7	63.5	67.7	57.1	112	46.9	44.8	
DE0009R	precipitation_amount_off	36.6	29.6	44.2	70.1	28.4	97.6	66.6	71.1	57.3	108.8	45.2	33.8	
DE0009R	zinc	10.81	12.92	9.22	9.47	17.27	8.48	7.7	12.82	9.28	12.23	18.44	9.24	
DK0020R	precipitation_amount	56.905	57.865	55.749	29.411	9.177	112.939	59.67	37.818	61.653	87.216	105.716	60.27	
DK0031R	arsenic	0.126	0.063	0.208	0.269	0.179	0.305	0.084	0.313	0.125	0.13	-	0.182	
DK0031R	cadmium	0.037	0.03	0.081	0.102	0.033	0.031	0.035	0.107	0.021	0.065	-	0.035	
DK0031R	chromium	0.265	0.372	1.057	0.858	0.154	0.33	0.025	0.45	0.114	0.049	-	0.154	
DK0031R	copper	0.869	0.723	1.924	2.728	0.954	1.351	0.397	1.167	0.291	0.481	-	0.647	
DK0031R	lead	1.252	0.776	1.335	3.082	1.204	0.85	1.238	1.47	0.627	1.896	-	0.766	
DK0031R	nickel	0.45	0.34	0.439	0.945	0.241	0.29	0.142	0.335	0.147	0.203	-	0.279	
DK0031R	precipitation_amount	139.82	87.66	89.56	35.449	60.913	111.841	83.936	50.909	153.22	55.098	0	72.381	
DK0031R	zinc	14.195	9.165	18.884	21.191	7.185	5.366	-	10.416	2.973	-	-	12.106	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
EE0009R	arsenic	0.319	0.25	0.618	0.25	0.25	0.394	0.361	0.25	0.25	0.344	0.422	0.441	
EE0009R	cadmium	0.122	0.11	0.173	0.164	0.09	0.052	0.054	0.057	0.05	0.05	0.066	0.128	
EE0009R	chromium	0.539	0.5	0.5	0.5	0.5	0.5	0.579	0.5	0.5	0.553	0.5	0.533	
EE0009R	copper	1.408	0.711	2.702	23.533	4.977	3.047	2.427	2.98	0.988	2.115	3.106	1.907	
EE0009R	lead	1.676	0.909	1.345	0.678	0.5	0.5	0.5	0.672	0.5	0.5	1.194	2.182	
EE0009R	nickel	0.741	0.583	2.306	1.572	0.5	0.751	0.523	0.73	0.5	1.587	1.943	0.566	
EE0009R	precipitation_amount	40.1	41.7	23	31.2	85.5	151.3	103	180.9	20.4	75.7	31.4	53.8	
EE0009R	zinc	5.898	11.98	36.846	13.918	28.935	22.793	5.272	5.18	5	6.267	13.974	11.252	
EE0011R	arsenic	0.1	0.1	0.1	0.128	0.417	0.273	0.169	0.177	0.253	0.317	0.356	0.378	
EE0011R	cadmium	0.11	0.08	0.08	0.065	0.035	0.037	0.04	0.048	0.059	0.176	0.08	0.12	
EE0011R	chromium	0.5	0.5	0.5	0.5	0.568	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
EE0011R	copper	0.5	0.5	2.1	7.887	2.644	3.607	8.071	5.233	6.755	1.566	0.876	1.559	
EE0011R	lead	0.5	0.5	0.5	0.5	0.5	0.5	0.914	0.882	0.5	0.603	2.171	1.123	
EE0011R	nickel	0.5	0.5	0.5	0.5	1.13	1.519	0.5	0.662	0.865	0.5	2.196	0.5	
EE0011R	precipitation_amount	34.6	18.3	3.8	24.9	24.1	67.8	29.8	74.5	19.2	90.7	56	47.5	
EE0011R	zinc	20	20	5	11.807	9.318	6.851	5	15.584	29.479	11.047	12.188	15.053	
FI0009R	arsenic	0.435	2.695	2.845	0.192	0.245	0.209	0.191	0.09	0.285	0.395	0.298	0.573	
FI0009R	cadmium	0.1	0.427	0.829	0.057	0.07	0.052	0.047	0.019	0.05	0.102	0.146	0.14	
FI0009R	chromium	0.43	1.75	2.78	0.13	0.21	0.13	0.19	0.025	0.17	0.14	0.47	0.23	
FI0009R	copper	2.71	10.24	28.45	2.58	5.92	1.76	2.37	0.89	1.31	1.36	0.78	1.52	
FI0009R	iron	176.5	942	1350	28.5	85.4	34.75	112	37.4	34.25	31.25	32.15	35.2	
FI0009R	lead	4.95	18.85	28.2	2.16	6.44	1.9	0.97	2.05	1.44	2.83	3.13	3.19	
FI0009R	manganese	4.36	27.85	58.45	2.12	5.22	3.07	5.36	1.55	4.76	1.58	1.48	1.42	
FI0009R	nickel	1.18	4.34	9.82	0.35	0.73	0.36	0.59	0.22	0.32	0.45	1.32	0.93	
FI0009R	precipitation_amount	20.4	3.3	1.4	24.7	36	52.5	30.2	91.3	41.6	36.1	31.8	20.4	
FI0009R	vanadium	1.67	9.59	12.1	0.74	0.67	0.51	0.52	0.35	0.42	0.79	1.85	1.39	
FI0009R	zinc	12.2	49.1	81.45	4.31	5.78	5.18	21.9	5.47	5.29	7.17	7.38	8.85	
FI0017R	arsenic	0.775	1.094	0.486	0.29	0.125	0.16	0.042	0.164	0.259	0.179	0.319	0.397	
FI0017R	cadmium	0.113	0.125	0.116	0.126	0.035	0.058	0.016	0.027	0.062	0.05	0.183	0.299	
FI0017R	chromium	0.43	0.62	0.27	0.16	0.13	0.13	0.025	0.025	0.15	0.14	0.24	0.21	
FI0017R	copper	1.92	3.9	1.28	1.51	0.78	1.17	0.55	0.8	1.24	1.01	1.97	1.56	
FI0017R	iron	64.33	81.37	49.77	22.97	57.97	39.3	19.7	15.57	37.63	10	64.23	53.1	
FI0017R	lead	4.77	4.76	3.39	2.15	1.2	1.62	0.59	1.15	1.05	1.5	3.35	2.51	
FI0017R	manganese	2.44	6.69	2.63	2.45	4.96	4.93	1.56	2.02	7.63	1.28	2.59	1.53	
FI0017R	nickel	1	1.56	0.59	0.53	0.22	0.3	0.22	0.28	0.32	0.31	0.93	0.5	
FI0017R	precipitation_amount	31	15.5	22.3	15	43.3	57.6	102.4	158.2	22.1	96.7	15.6	36.1	
FI0017R	vanadium	1.63	2.46	1.27	1.35	0.38	0.53	0.18	0.3	0.46	0.42	2.22	1.21	
FI0017R	zinc	14.02	11.53	8.61	6.86	4.31	4.6	22.17	4.97	6.17	4.13	8.06	5.28	
FI0053R	arsenic	0.08	0.194	0.707	0.818	0.059	0.089	0.041	0.076	0.133	0.056	0.211	0.061	
FI0053R	cadmium	0.021	0.039	0.108	0.254	0.017	0.028	0.013	0.012	0.037	0.018	0.089	0.018	
FI0053R	chromium	0.12	0.14	1.66	0.61	0.025	0.025	0.025	0.025	0.07	0.025	0.13	0.05	
FI0053R	copper	0.58	1.4	11.9	6.35	0.63	0.57	0.44	0.45	1.07	0.54	1.81	1.1	
FI0053R	iron	9.34	21.15	332	106.25	32.65	17.8	8.13	5.5	14.85	1.25	28.45	18.05	
FI0053R	lead	1.17	1.58	7.89	6.77	0.47	0.88	0.35	0.58	1.32	0.48	2.27	0.62	
FI0053R	manganese	1.65	2.56	20.3	11.95	1.14	2.14	1.12	1.01	2.15	0.54	2.36	1.71	
FI0053R	nickel	0.31	0.41	2.42	1.5	0.2	0.3	0.3	0.24	0.22	0.14	0.55	0.23	
FI0053R	precipitation_amount	36.4	18.4	0.5	3.6	50.7	60.6	90.4	67.1	37	63.5	14.9	16.2	
FI0053R	vanadium	0.45	1.23	8.04	2.98	0.2	0.31	0.14	0.18	0.29	0.21	1.31	0.63	
FI0053R	zinc	2.49	3.86	20.8	19.8	1.79	2.21	3.58	2.22	3.17	1.84	6.36	3.01	
FI0092R	arsenic	0.076	0.095	0.162	1.4	0.104	0.129	0.038	0.052	0.131	0.095	0.154	0.054	
FI0092R	cadmium	0.028	0.033	0.041	0.5	0.028	0.037	0.013	0.03	0.037	0.043	0.043	0.029	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
FI0092R	chromium	0.23	0.08	0.07	1.15	0.09	0.06	0.025	0.025	0.08	0.025	0.18	0.1	
FI0092R	copper	0.5	0.7	1.07	19.5	0.86	0.57	0.34	0.72	0.88	0.46	3.29	0.27	
FI0092R	iron	9.11	7.48	11.96	439	40.95	26.4	5.83	7.33	7.65	1.25	14.3	3.1	
FI0092R	lead	0.89	0.92	1.15	16.2	0.72	1.25	0.4	1.66	1.81	0.93	1.13	0.37	
FI0092R	manganese	0.54	0.92	1.25	31.85	5.08	4.78	0.97	1.08	1.68	0.53	0.7	0.24	
FI0092R	nickel	0.2	0.26	0.27	3.33	0.47	0.18	0.09	0.44	0.28	0.2	0.39	0.13	
FI0092R	precipitation_amount	70	51.7	17.5	0.9	61.8	124.6	130.1	78.3	35.2	89.7	12.9	54.2	
FI0092R	vanadium	0.34	0.47	0.52	4.69	0.34	0.28	0.14	0.15	0.22	0.27	0.75	0.22	
FI0092R	zinc	2.31	3.02	2.63	35.35	3.98	2.42	17.7	3.9	3.52	2.26	2.81	1.34	
FI0093R	arsenic	0.156	0.141	0.256	0.735	0.121	0.088	0.036	0.048	0.16	0.097	0.198	0.146	
FI0093R	cadmium	0.037	0.036	0.068	0.378	0.04	0.024	0.014	0.018	0.058	0.072	0.063	0.035	
FI0093R	chromium	0.11	0.11	0.13	0.56	0.07	0.025	0.025	0.025	0.025	0.06	0.29	0.025	
FI0093R	copper	0.91	0.93	0.91	10.48	0.75	0.72	0.33	1.03	0.74	0.61	1.56	0.45	
FI0093R	iron	13.5	34.7	23.25	192	23.9	14.1	8.43	4.22	7.78	1.25	21.3	5.78	
FI0093R	lead	1.67	1.54	2.26	8.71	1.16	0.71	0.43	0.61	1.3	1.1	1.9	1.26	
FI0093R	manganese	1.31	6.67	2.13	39.95	5.27	4.16	1.13	0.87	3.23	1.76	1.75	0.59	
FI0093R	nickel	0.39	0.41	0.54	1.47	0.3	0.42	0.22	0.31	0.24	0.25	0.54	0.32	
FI0093R	precipitation_amount	64.6	47.9	26.6	4.2	72.3	78.3	152.1	111.9	45.4	67.6	20.1	64.9	
FI0093R	vanadium	0.58	0.6	0.73	2.23	0.31	0.27	0.16	0.21	0.37	0.29	1.09	0.54	
FI0093R	zinc	3.5	11.75	5.5	37.1	4.23	2.47	-	2.85	7.88	3.21	4.47	2.7	
FI0094R	arsenic	0.049	0.068	0.122	0.379	0.121	0.117	0.081	0.089	0.113	0.064	0.067	0.051	
FI0094R	cadmium	0.01	0.01	0.024	0.094	0.022	0.022	0.018	0.025	0.029	0.019	0.017	0.011	
FI0094R	chromium	0.11	0.06	0.26	0.17	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	
FI0094R	copper	0.55	0.65	2.03	1.56	1.36	0.96	0.78	1.15	0.6	0.47	0.95	0.65	
FI0094R	iron	4.96	4.79	29.98	31.05	9.76	9.35	5.23	4.21	7.66	1.25	5.29	1.25	
FI0094R	lead	0.46	0.32	0.86	3.44	0.46	0.88	0.48	0.82	0.95	0.57	0.57	0.27	
FI0094R	manganese	0.29	0.36	1.02	3.59	0.59	1.98	1.55	0.68	1.83	0.47	0.31	0.32	
FI0094R	nickel	0.32	0.16	0.29	0.38	0.19	0.19	0.17	0.17	0.16	0.13	0.23	0.15	
FI0094R	precipitation_amount	53.2	54.8	9.9	14.2	64	50	89.7	74.9	46.2	82.2	25.7	29.8	
FI0094R	vanadium	0.15	0.19	0.39	0.68	0.16	0.23	0.14	0.13	0.18	0.1	0.28	0.12	
FI0094R	zinc	1.35	0.77	2.05	5.75	1.24	3.46	2.79	1.66	1.75	6.86	1.42	1.85	
FI0095R	arsenic	0.109	0.098	0.328	0.636	0.306	0.101	0.196	0.512	0.061	0.128	0.11	0.032	
FI0095R	cadmium	0.012	0.013	0.053	0.122	0.069	0.014	0.028	0.067	0.011	0.049	0.014	0.009	
FI0095R	chromium	0.025	0.11	0.14	0.14	0.18	0.025	0.06	0.33	0.025	0.025	0.25	0.025	
FI0095R	copper	0.86	1.17	2.92	2.15	1.79	0.47	2.02	5.95	0.8	0.87	2.48	0.67	
FI0095R	iron	2.64	8.19	16.5	13.65	36.4	4.01	7.21	13.2	1.25	1.25	7.46	6.92	
FI0095R	lead	0.29	0.4	1.4	2.78	2.01	0.3	0.66	2.19	0.24	0.48	0.5	0.25	
FI0095R	manganese	0.12	0.65	0.73	1.07	3.81	0.35	1.05	0.99	1.17	0.28	0.34	0.14	
FI0095R	nickel	0.25	0.57	1.59	0.68	0.76	0.45	0.4	1.21	0.2	0.29	0.57	0.13	
FI0095R	precipitation_amount	25.6	35.8	5.2	12.3	18.6	76.9	52.5	29.2	42.1	33.9	15.7	23	
FI0095R	vanadium	0.13	0.17	0.66	0.51	0.33	0.08	0.13	0.2	0.05	0.08	0.14	0.08	
FI0095R	zinc	0.75	1.5	3.48	4.37	4.06	0.51	3.32	3.5	0.98	1.06	2.05	1.5	
IE0001R	arsenic	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	-	0.25	0.25	0.25	
IE0001R	cadmium	0.64	0.17	0.025	0.025	0.025	0.025	0.025	0.025	0.12	0.025	0.08	0.025	
IE0001R	chromium	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
IE0001R	copper	6.5	11.8	1.3	0.25	2.4	0.25	1.8	0.6	2.5	0.25	11.5	0.25	
IE0001R	lead	0.25	0.25	1.1	0.25	0.25	0.25	0.6	0.5	5	0.25	0.25	0.25	
IE0001R	mercury	75	-	75	50	-	100	50	50	50	50	50	50	
IE0001R	nickel	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
IE0001R	precipitation_amount	212.4	49.6	133	175.7	30.6	184.4	113.8	120.2	139.8	208.6	193.3	220.9	
IE0001R	zinc	39.3	23	1.7	0.25	-	3.3	6.8	4.2	3.6	4.8	411	3.8	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
IE0002R	arsenic	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
IE0002R	cadmium	0.025	0.08	0.06	0.07	0.025	0.07	0.025	0.06	0.09	0.025	0.25	0.15	
IE0002R	chromium	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
IE0002R	copper	0.25	1	0.7	0.7	0.25	0.25	0.25	0.8	0.8	1.6	0.25	0.25	
IE0002R	lead	0.25	0.25	1.2	1	0.25	0.7	0.6	1	1.6	0.25	1.2	1.4	
IE0002R	mercury	75	75	75	50	50	50	50	50	50	50	50	50	
IE0002R	nickel	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	
IE0002R	precipitation_amount	216.8	41.9	139	234.1	65.6	170.5	87.2	61.4	235.7	260.4	190.8	218.7	
IE0002R	zinc	1.7	3.8	3	4.7	6	2	3	2.9	3.1	2.3	1.6	0.9	
IS0002R	aluminium	-	-	240	55.7	98.2	59	119.4	51.5	335	95	151	199	
IS0002R	arsenic	0.025	0.025	0.025	0.09	0.013	0.012	0.012	0.013	0.12	0.013	0.012	0.012	
IS0002R	cadmium	0.09	0.16	0.03	0.029	0.015	0.037	0.02	0.011	0.037	0.014	0.002	0.196	
IS0002R	chromium	0.025	4.2	1.1	2	1	0.8	0.8	0.8	2.3	0.9	0.4	0.7	
IS0002R	copper	1.3	10.1	2.1	5.3	1.2	2.1	1.7	1	4.7	1.2	3	12.2	
IS0002R	iron	-	-	135.8	549.6	68.2	50.9	77.3	50.2	497.6	71.5	183.4	230.1	
IS0002R	lead	0.3	0.8	0.74	1.98	0.36	0.49	0.52	1.74	2.01	0.53	0.36	3.13	
IS0002R	manganese	-	-	4.6	19.1	2.3	3.1	3.1	1.4	16.9	2.3	3.7	3.8	
IS0002R	nickel	0.125	0.9	0.8	2.5	3.6	0.9	0.6	0.4	2.6	0.5	0.1	0.3	
IS0002R	precipitation_amount	94.3	137.8	128.2	35.1	163.9	23.6	63.9	366.6	86.5	181.7	218.8	182.3	
IS0002R	vanadium	-	-	0.5	1.4	0.4	0.3	0.4	0.3	2.4	0.4	0.4	0.9	
IS0002R	zinc	57	942	136.6	181	124	165.8	139.8	85.5	178.2	69.3	23	57	
IS0090R	aluminium	-	-	-	47.2	20.4	43.7	89.1	40	210.2	92.9	169.1	91.7	
IS0090R	arsenic	0.025	0.025	0.18	0.013	0.013	0.59	0.18	0.013	0.013	0.012	0.13	0.013	
IS0090R	cadmium	0.32	0.013	0.003	0.054	0.034	0.078	0.084	0.455	0.032	0.083	0.087	0.037	
IS0090R	chromium	0.025	0.025	0.3	0.1	0.7	0.05	0.5	0.7	0.7	0.7	0.9	0.8	
IS0090R	copper	1.9	1.7	2	1.7	2.8	2.2	1.5	1.2	0.7	0.5	6.1	4.4	
IS0090R	iron	-	-	87.6	18.6	35.9	2.5	50.3	45.2	162.2	29.3	229.4	192.8	
IS0090R	lead	0.05	0.05	0.56	0.27	0.45	0.29	0.3	0.49	0.17	0.09	0.33	0.31	
IS0090R	manganese	-	-	6.5	2.3	1.1	4.5	4.6	1.3	5.7	0.6	5.6	4.1	
IS0090R	nickel	0.125	0.5	0.7	0.4	0.3	0.6	0.4	0.3	0.2	1	0.5	0.4	
IS0090R	precipitation_amount	53.3	70.9	66	18.5	70.6	20.1	67.1	106	19.8	64.9	109	87.7	
IS0090R	vanadium	-	-	0.3	0.1	0.2	0.2	0.4	0.3	0.8	0.1	0.7	0.2	
IS0090R	zinc	155	97	173.1	23.2	24.5	212.7	177.5	12.2	3.6	24.6	74.3	61.3	
LT0015R	cadmium	0.17	0.17	0.05	0.34	0.07	0.14	0.12	0.07	0.04	0.41	0.13	0.08	
LT0015R	copper	2.17	1.18	2	10.7	0.57	1.65	1.82	0.7	0.56	1.18	1.47	1.13	
LT0015R	lead	2.6	1.4	3.5	2.8	1.61	8.46	5.94	3	3.09	7.8	3.67	2.53	
LT0015R	manganese	10.2	22	24.7	29.7	-	3.6	6.14	3.56	1.36	1.3	1.28	0.79	
LT0015R	nickel	2	1.3	1.15	0.6	0.49	0.58	1.04	0.38	0.77	1.1	0.82	0.73	
LT0015R	precipitation_amount	41.46	38.21	28.05	59.35	24.6	95.72	33.84	153.94	73.55	105.18	24.59	29.28	
LT0015R	vanadium	1.63	2.5	-	0.4	0.31	0.58	0.42	0.29	0.57	0.41	0.69	1.12	
LT0015R	zinc	17.1	14.95	-	40.2	10.12	13.03	19.32	6.02	4.83	8.39	10.29	-	
LV0010R	cadmium	0.15	0.08	0.62	0.89	0.07	0.16	0.03	0.06	0.04	0.1	0.02	0.17	
LV0010R	copper	0.3	1.4	1	2.1	1.6	1	0.9	0.2	0.5	0.4	0.3	0.9	
LV0010R	lead	9.4	5.1	3.7	2.7	4.8	3.1	1	1.2	1	2.9	1	1.4	
LV0010R	precipitation_amount	66	54.8	46.3	41.9	29.7	59.8	90.6	131	64.6	161.5	61.8	49.2	
LV0010R	zinc	34.6	15.9	35.8	25.4	17.7	21.5	5.1	4.1	8.8	6.8	1.3	12	
LV0016R	cadmium	0.09	0.07	0.21	0.25	0.01	0.07	0.04	0.04	0.04	0.07	0.17	0.08	
LV0016R	copper	0.3	3	7.4	2.3	1	1.5	1.1	3.4	1.1	1.1	-	1	
LV0016R	lead	4.7	2.7	5.1	1.7	2.2	1.3	1	1.7	1	1	4.5	1.4	
LV0016R	precipitation_amount	62.8	74.9	30.7	23.5	130	131.6	112.7	128.3	46.9	104.7	14.3	66.3	
LV0016R	zinc	17	7.8	37.8	17	8.4	12.9	11.7	12.1	56.1	4.6	17.8	25.4	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
NL0009R	cadmium	0.854	-	0.101	0.135	0.124	-	-	-	0.067	-	-	-	
NL0009R	copper	1.906	-	0.953	1.843	1.589	-	-	-	1.144	-	-	-	
NL0009R	lead	2.694	-	1.865	3.522	2.486	-	-	-	1.45	-	-	-	
NL0009R	precipitation_amount	9.6	0	87.5	31.9	70.2	0	0	51.7	85	0	0	0	
NL0009R	zinc	45.77	-	11.12	17	9.81	-	-	-	3.27	-	-	-	
NO0001R	cadmium	0.039	0.015	0.083	0.09	0.011	0.02	0.028	0.011	0.061	0.015	0.047	0.058	
NO0001R	lead	2.06	0.859	2.771	2.695	0.696	0.844	1.32	0.813	2.534	0.776	1.838	0.783	
NO0001R	precipitation_amount	150.223	40.001	88.312	203.089	80.222	170.223	156.911	71.403	166.082	194.172	107.548	88.121	
NO0001R	zinc	13.071	5.638	12.537	5.739	2.21	2.749	4.016	1.709	4.821	1.463	5.5	6.382	
NO0039R	arsenic	0.05	0.05	0.05	0.061	0.052	0.069	0.05	0.05	0.05	0.05	-	-	
NO0039R	cadmium	0.049	0.004	0.013	0.058	0.009	0.01	0.004	0.003	0.01	0.01	0.005	0.003	
NO0039R	chromium	0.253	0.25	0.25	0.25	0.251	0.25	0.387	0.25	0.25	0.25	0.25	-	
NO0039R	cobalt	0.008	0.005	0.005	0.02	0.006	0.007	0.006	0.005	0.019	0.007	-	-	
NO0039R	copper	0.103	0.074	0.13	0.428	0.087	0.148	0.101	0.056	0.133	0.321	0.236	-	
NO0039R	lead	0.234	0.106	0.217	0.775	0.206	0.278	0.243	0.056	0.426	0.209	0.305	0.095	
NO0039R	manganese	0.529	0.5	0.5	0.802	0.605	0.934	0.5	0.561	1.931	0.491	1.438	-	
NO0039R	nickel	0.134	0.1	0.1	0.362	0.1	0.1	0.126	0.1	0.243	0.281	0.245	-	
NO0039R	precipitation_amount	110.128	208.312	181.02	15.604	107.198	102.133	144.3	202.644	72.133	142.038	15	149.681	
NO0039R	vanadium	0.102	0.1	0.1	0.1	0.101	0.129	0.1	0.1	0.1	0.1	-	-	
NO0039R	zinc	0.751	0.618	0.968	5.219	1.166	1.413	1.557	0.249	1.475	4.027	2.247	0.929	
NO0041R	cadmium	0.011	0.017	0.042	0.07	0.066	0.076	0.005	0.009	0.015	0.007	0.011	0.045	
NO0041R	lead	0.78	0.611	1.49	2.385	3.2	0.469	0.191	0.474	0.814	0.184	0.483	0.234	
NO0041R	precipitation_amount	37.77	17.611	23.981	109.362	13.567	88.822	79.331	69.14	88.758	90.445	16.593	22.644	
NO0041R	zinc	5.508	5.426	5.79	4.708	11.51	3.904	8.414	2.742	2.467	1.597	8.136	11.706	
NO0047R	arsenic	7.559	1.741	1.149	-	0.482	2.259	2.446	4.074	1.092	4.7	3.274	1.514	
NO0047R	cadmium	0.3	0.097	0.055	0.068	0.065	0.152	0.107	0.172	0.032	0.145	0.194	0.115	
NO0047R	chromium	0.808	0.258	0.166	0.155	0.329	0.251	0.582	1.371	0.156	0.866	0.509	0.272	
NO0047R	cobalt	1.788	0.536	0.351	0.161	0.513	0.698	1.056	1.873	0.204	1.641	1.108	0.385	
NO0047R	copper	81.017	22.789	12.262	6.321	12.258	24.351	34.593	73.112	8.517	65.255	54.715	19.228	
NO0047R	lead	1.605	0.81	0.664	1.546	1.006	1.503	1.462	1.518	0.544	1.107	1.185	0.533	
NO0047R	nickel	62.313	16.339	10.754	5.086	14.961	22.789	34.841	58.981	6.519	56.006	34.941	13.572	
NO0047R	precipitation_amount	16.593	22.547	23.694	19.045	9.076	67.006	41.306	20.924	75.605	24.044	13.854	15.001	
NO0047R	zinc	5.923	2.908	1.914	2.897	4.859	3.392	5.592	10.411	2.934	5.363	5.005	3.572	
NO0093R	arsenic	0.05	0.05	0.05	0.171	0.15	0.05	0.116	0.05	0.05	0.12	0.05	0.05	
NO0093R	cadmium	0.032	0.016	0.045	0.065	0.087	0.022	0.015	0.009	0.041	0.02	0.022	0.022	
NO0093R	chromium	0.1	0.1	0.1	0.1	0.573	0.1	0.346	0.1	0.1	0.1	0.622	0.312	
NO0093R	cobalt	0.005	0.015	0.016	0.017	0.045	0.017	0.024	0.005	0.012	0.017	0.022	0.015	
NO0093R	copper	0.309	0.46	0.446	0.542	1.299	0.606	0.441	0.143	0.897	0.824	1.124	1.035	
NO0093R	iron	5	5	5	16.569	66.855	5	13.591	5	5	5	27.717	41.828	
NO0093R	lead	0.716	0.553	0.757	2.114	1.53	0.507	0.324	0.231	1.002	0.415	0.591	0.448	
NO0093R	manganese	1.034	0.856	1.088	1.512	6.377	2.743	2.69	1.47	1.789	0.25	2.575	1.297	
NO0093R	nickel	0.1	0.22	0.221	0.1	0.272	0.1	0.1	0.1	0.1	0.522	0.237	0.275	
NO0093R	precipitation_amount	36.592	26.242	40.7	103.3	8.44	79.968	95.51	107.548	77.17	80.76	24.08	22.9	
NO0093R	vanadium	0.05	0.05	0.21	0.271	0.217	0.05	0.05	0.05	0.05	0.05	0.11	0.05	
NO0093R	zinc	4.965	8.933	8.719	5.878	14.344	3.888	2.911	0.959	2.067	5.805	13.319	10.499	
NO0094R	arsenic	0.05	0.05	0.05	0.189	0.14	0.05	0.05	0.05	0.05	0.05	0.139	0.05	
NO0094R	cadmium	0.029	0.017	0.033	0.054	0.039	0.033	0.017	0.062	0.037	0.02	0.125	0.14	
NO0094R	chromium	0.1	0.1	0.1	0.1	0.1	0.306	0.1	0.1	0.1	0.1	0.1	0.1	
NO0094R	cobalt	0.033	0.005	0.018	0.015	0.03	0.056	0.018	0.012	0.014	0.01	0.167	0.022	
NO0094R	copper	0.76	0.261	0.652	0.392	1.302	-	-	-	-	-	-	-	
NO0094R	iron	5	5	5	5	37.062	5	5	5	5	5	19.831	5	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
NO0094R	lead	2.172	0.415	1.091	1.972	1.466	0.758	0.659	0.314	0.713	0.325	1.684	1.022	
NO0094R	manganese	1.433	1.023	1.112	1.167	2.2	1.4	1.667	1.657	1.889	0.25	1.058	1.064	
NO0094R	nickel	0.267	0.1	0.1	0.217	0.367	-	-	-	-	-	-	-	
NO0094R	precipitation_amount	29.49	42.452	33.76	62.9	12.452	102.58	104.586	49.49	110	83.47	27.83	50.51	
NO0094R	vanadium	0.223	0.05	0.226	0.259	0.167	0.05	0.194	0.05	0.05	0.05	0.238	0.05	
NO0094R	zinc	5.772	1.969	3.843	3.142	8.762	-	-	-	-	-	-	-	
NO0095R	arsenic	0.05	0.05	0.167	0.397	0.05	0.05	0.05	0.05	0.142	0.199	0.176	0.05	
NO0095R	cadmium	0.033	0.007	0.06	0.083	0.053	0.026	0.015	0.01	0.024	0.002	0.053	0.019	
NO0095R	chromium	0.1	0.1	0.1	0.1	0.1	0.86	0.229	0.1	0.1	0.1	0.1	0.1	
NO0095R	cobalt	0.037	0.022	0.016	0.021	0.018	0.015	0.015	0.005	0.005	0.005	0.018	0.013	
NO0095R	copper	0.277	0.209	0.701	0.75	0.637	0.27	0.25	0.206	0.185	0.138	0.639	0.204	
NO0095R	iron	27.781	13.347	5	14.915	5	5	5	5	5	5	19.211	36.752	
NO0095R	lead	1.209	0.852	3.302	4.177	1.62	0.814	0.632	0.601	1.336	0.312	3.209	0.833	
NO0095R	manganese	1.802	1.407	1.566	2.625	1.681	1.055	1.512	0.25	0.672	0.25	1.425	0.542	
NO0095R	nickel	0.209	0.1	0.268	0.254	0.1	0.503	0.1	0.228	0.1	0.1	0.391	0.1	
NO0095R	precipitation_amount	210.191	331.083	140.16	72.23	74.9	154.841	157.229	206.306	148.41	303.95	117.45	184.84	
NO0095R	vanadium	0.521	0.343	0.595	0.59	0.333	0.364	0.168	0.218	0.298	0.05	1.065	0.418	
NO0095R	zinc	2.035	2.205	6.585	7.444	5.238	2.392	1.83	1.472	2.126	0.955	7.272	1.559	
NO0099R	arsenic	0.182	0.322	0.299	0.455	0.472	0.262	0.078	0.075	0.274	0.05	0.269	0.323	
NO0099R	cadmium	0.062	0.02	0.077	0.085	0.096	0.029	0.034	0.022	0.103	0.01	0.07	0.041	
NO0099R	chromium	0.223	0.238	0.468	0.117	0.5	0.472	0.886	0.775	1.472	0.43	0.523	0.187	
NO0099R	cobalt	0.042	0.023	0.044	0.028	0.06	0.019	0.051	0.027	0.044	0.02	0.033	0.035	
NO0099R	copper	2.567	1.555	2.185	0.82	1.81	2.187	0.708	0.671	1.917	0.449	1.147	0.677	
NO0099R	lead	3.685	2.113	3.728	3.871	5.008	2.251	1.754	1.323	2.521	0.761	1.36	2.224	
NO0099R	mercury	5.1	10.1	13.7	11.8	17.4	8.8	7.8	-	10.9	-	8.1	5.3	
NO0099R	nickel	0.43	0.332	1.374	0.29	0.912	0.755	0.9	0.673	0.703	0.15	0.463	0.254	
NO0099R	precipitation_amount	125.223	126.114	107.261	85.128	18.408	84.65	135.669	200.318	101.465	160.541	103.344	97.356	
NO0099R	vanadium	0.706	1.044	1.065	0.765	0.658	0.536	0.43	0.475	0.292	0.161	0.6	0.772	
NO0099R	zinc	18.978	7.872	13.997	10.364	14.088	9.023	11.209	4.974	7.385	5.34	9.446	7.697	
PL0005R	cadmium	-	-	-	-	0.248	0.187	0.124	0.216	0.203	0.387	-	-	
PL0005R	chromium	-	-	-	-	0.229	0.134	0.134	0.188	0.209	0.164	-	-	
PL0005R	copper	-	-	-	-	1.895	1.086	1.254	1.785	0.96	2	-	-	
PL0005R	lead	-	-	-	-	2.036	2.181	1.513	1.397	1.81	3.813	-	-	
PL0005R	nickel	-	-	-	-	0.435	0.312	0.353	0.627	0.482	0.411	-	-	
PL0005R	precipitation_amount	0	0	0	0	52.3	162.4	76	82.6	32.2	67.1	0	0	
PL0005R	precipitation_amount_off	-	-	-	-	11.044	19.65	12.507	7.852	8.04	5.606	-	-	
PL0005R	zinc	-	-	-	-	13.476	7.308	26.815	52.471	17.155	16.811	-	-	
PT0001R	cadmium	1.132	0.425	0.614	0.425	-	-	-	0.425	0.425	-	0.425	0.425	
PT0001R	copper	2.922	1.122	3.265	0.994	-	-	-	3.45	1.678	-	2.41	1.63	
PT0001R	lead	1.684	0.645	0.645	0.645	-	-	-	0.645	0.645	-	0.645	0.645	
PT0001R	manganese	5.821	3.834	10.157	10.688	-	-	-	4.6	5.68	-	1.075	22.35	
PT0001R	nickel	1.549	1.054	1.105	0.775	-	-	-	0.775	0.775	-	0.775	1.98	
PT0001R	precipitation_amount	68.9	28.8	24.5	51.1	0	0	0	23.7	47	0	7.5	19.7	
PT0001R	zinc	408.602	34.056	271.371	46.362	-	-	-	215	98.389	-	17	7	
PT0003R	cadmium	0.456	0.425	-	0.425	0.425	-	0.425	-	0.425	0.425	0.425	0.536	
PT0003R	copper	2.112	2.35	-	1.614	3.13	-	4.64	-	1.046	3.266	3.894	2.965	
PT0003R	lead	1.014	0.645	-	0.694	0.645	-	0.645	-	0.885	1.322	0.805	1.178	
PT0003R	manganese	2.883	3.56	-	1.638	7.1	-	3.54	-	6.583	4.749	8.838	2.655	
PT0003R	nickel	1.104	0.775	-	0.775	0.775	-	0.775	-	0.884	0.775	0.775	0.995	
PT0003R	precipitation_amount	166.9	33.1	0	135.6	18.9	0	11.3	0	206.4	91.7	65.5	158.1	
PT0003R	zinc	37.741	26	-	22.476	45	-	28	-	11.512	39.129	66.369	14.76	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
PT0004R	cadmium	1.211	-	-	0.425	0.425	-	-	-	0.425	-	-	0.425	
PT0004R	copper	0.787	-	-	0.661	0.705	-	-	-	1.268	-	-	2.374	
PT0004R	lead	0.849	-	-	0.645	0.645	-	-	-	0.645	-	-	0.78	
PT0004R	manganese	2.641	-	-	9.31	6.968	-	-	-	7.795	-	-	11.504	
PT0004R	nickel	0.775	-	-	1.288	0.775	-	-	-	0.775	-	-	1.017	
PT0004R	precipitation_amount	32.8	0	0	26.3	45.9	0	0	0	68.8	0	0	32.6	
PT0004R	zinc	18.823	-	-	12.734	14.011	-	-	-	19.179	-	-	16.65	
SE0002R	mercury	5.7	12.8	12.3	8.2	8.4	5.9	7.8	5.6	3.8	4.3	6	-	
SE0002R	precipitation_amount Hg	48	42	36	54	43	110	71	92	74	31	10	15	
SE0005R	arsenic	0.11	0.05	0.05	0.09	0.05	0.05	0.05	0.07	0.15	0.07	0.05	0.05	
SE0005R	cadmium	0.04	0.01	0.01	0.06	0.18	0.03	0.02	0.01	0.03	0.01	0.01	0.08	
SE0005R	chromium	0.43	0.1	0.31	0.29	0.21	0.05	0.07	0.05	0.05	0.05	0.07	0.45	
SE0005R	cobalt	0.02	0.02	0	0.04	0.04	0.01	0.01	0	0.01	0.01	0.01	0.01	
SE0005R	copper	0.61	0.56	0.25	1.91	4.64	1.67	0.77	0.99	0.7	0.05	1.16	1.05	
SE0005R	lead	1.03	0.36	0.37	1.35	1.69	0.47	0.38	0.31	0.88	0.64	0.35	0.19	
SE0005R	manganese	1.4	1.3	0.8	1.4	38	7.9	3.8	2.5	2.5	1.2	0.6	1.2	
SE0005R	mercury	3.1	4.4	6.6	14.5	9.9	5.8	4.1	1.6	4.5	3	3.8	2.5	
SE0005R	nickel	0.28	0.06	0.1	0.15	0.15	0.1	0.1	0.17	0.14	0.07	0.09	0.29	
SE0005R	precipitation_amount	30	63	21	7	15	90	111	116	70	67	13	41	
SE0005R	precipitation_amount Hg	30	31	13	16	24	103	110	109	78	76	39	21	
SE0005R	vanadium	0.22	0.1	0.17	0.48	0.12	0.13	0.12	0.01	0.07	0.13	0.11	0.06	
SE0005R	zinc	16.3	3	2.4	9.8	53.2	11	22.5	5.1	5.9	4	2.1	3.8	
SE0011R	mercury	15.8	16.8	17.3	9.3	5.7	7.1	3.8	8.9	3.5	5.7	13.1	12.1	
SE0011R	precipitation_amount Hg	29	40	48	75	43	107	107	87	83	101	24	38	
SE0012R	arsenic	0.29	0.09	0.11	0.24	0.45	0.09	0.18	0.12	0.23	0.14	0.31	0.26	
SE0012R	cadmium	0.06	0.04	0.04	0.11	0.37	0.03	0.06	0.02	0.07	0.05	0.11	0.08	
SE0012R	chromium	0.21	0.34	0.4	0.11	0.45	0.19	0.31	0.12	0.08	0.05	0.23	0.23	
SE0012R	cobalt	0.01	0.01	0.02	0.03	0.07	0.02	0.05	0.01	0.02	0.02	0.03	0.02	
SE0012R	copper	1.96	6.01	5.56	1.44	5.97	3.08	4.13	0.98	1.1	1.38	1.6	8.3	
SE0012R	lead	3.94	1.47	2.13	3.12	2.34	3.01	3.13	1.15	3.4	1.6	3.68	2.25	
SE0012R	manganese	0.7	1.5	2.6	2.7	21.7	1.7	2.7	2.1	2.5	2.2	2.6	1.6	
SE0012R	mercury	10.6	8.5	9.4	12.1	7.7	9.8	10.9	6.4	5.2	5.9	7.8	6.1	
SE0012R	nickel	0.24	0.23	0.33	0.03	0.03	0.16	0.15	0.35	0.62	0.25	0.71	0.3	
SE0012R	precipitation_amount	66	57	29	26	68	30	31	50	39	37	21	44	
SE0012R	precipitation_amount Hg	36	37	31	27	59	73	44	62	47	45	19	27	
SE0012R	vanadium	0.52	0.44	0.7	0.61	0.36	0.32	0.29	0.21	0.3	0.48	2.06	0.59	
SE0012R	zinc	6.5	8.7	6.9	12.1	54.4	39.3	3.5	23	27.3	26.1	9	7.4	
SE0051R	arsenic	0.19	0.23	0.05	0.3	0.22	0.05	0.05	0.22	0.12	0.12	0.36	0.1	
SE0051R	cadmium	0.07	0.09	0.02	0.08	0.09	0.04	0.02	0.03	0.02	0.03	0.06	0.05	
SE0051R	chromium	0.22	0.13	0.12	0.05	0.11	0.14	0.31	0.05	0.05	0.05	0.13	0.16	
SE0051R	cobalt	0.04	0.05	0.02	0.01	0.04	0.03	0.02	0.02	0.01	0.01	0.03	0.02	
SE0051R	copper	6.48	1.94	1.75	1.42	9.12	2.42	2.78	1.72	0.9	0.6	3.03	1.36	
SE0051R	iron	-	-	-	-	-	-	-	-	-	-	-	-	
SE0051R	lead	4.49	3.5	1.01	2.56	3.03	1.41	0.96	1.89	1.65	1.57	3.1	1.82	
SE0051R	manganese	2.3	3.5	2.4	1.4	5.6	2.5	3.8	2.2	0.9	1.5	1.2	1.7	
SE0051R	nickel	0.42	0.45	0.2	0.03	0.03	0.17	0.19	0.22	0.16	0.2	0.34	0.46	
SE0051R	precipitation_amount	30	59	68	47	24	93	63	67	47	117	56	58	
SE0051R	vanadium	0.91	1.38	0.5	0.59	0.47	0.37	0.39	0.39	0.14	0.37	0.83	0.94	
SE0051R	zinc	11.2	9.6	3.3	8	27.4	15.7	27.9	13.6	11.7	7.2	6.9	5.4	
SE0097R	arsenic	0.19	0.15	0.21	0.48	-	0.05	0.08	0.05	0.12	0.05	0.26	0.07	
SE0097R	cadmium	0.03	0.08	0.03	0.1	-	0.03	0.04	0.02	0.02	0.02	0.06	0.04	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA flag
SE0097R	chromium	0.15	0.05	0.31	0.07	-	0.05	0.07	0.05	0.05	0.05	0.23	0.15	
SE0097R	cobalt	0	0.02	0.03	0.02	-	0.02	0.02	0.01	0.02	0	0.03	0.02	
SE0097R	copper	3.3	6.63	13.9	1.19	-	0.94	2.54	1.02	0.66	0.5	2.39	1.63	
SE0097R	lead	0.96	2.22	1.4	3.71	-	1.02	1.77	0.97	1.36	0.59	2.48	1.5	
SE0097R	manganese	1	1.9	2	2	-	2.3	4.9	3.6	1.8	1.7	3.1	1.1	
SE0097R	nickel	0.18	0.36	0.28	0.08	-	0.2	0.23	0.23	0.16	0.1	0.4	0.35	
SE0097R	precipitation_amount	26	75	19	74	56	101	82	79	66	122	22	85	
SE0097R	vanadium	0.38	0.81	0.59	0.5	-	0.4	0.52	0.4	0.4	0.23	0.66	0.8	
SE0097R	zinc	3.6	7.6	5.8	10.1	-	26.9	15.3	23.8	18.2	4.1	10.3	4	
SK0002R	aluminium	144	60	60.1	22	35	20	19	45	12	11	18	26	
SK0002R	iron	853	210	146	76	9	62	75	130	69	53	152	347	
SK0002R	manganese	7.8	8.1	11.7	6.9	9.8	5.4	5.9	10.9	2.8	2.4	6.6	6	
SK0002R	precipitation_amount	81	33	64.2	146.9	57.3	142.3	142.7	52.4	188.4	162.8	70.7	49.1	
SK0002R	zinc	66	72	92	18	51	57	69	43	20	27	26	57	
SK0004R	aluminium	13	24	80	7	15	13	15	25	10	10	57	27	
SK0004R	iron	554	11	141	13	14	6	8	15	10	8	71	41	
SK0004R	manganese	7.4	3.7	12	5.1	6.1	4.7	4.5	6.3	2.3	1.8	3	3.6	
SK0004R	precipitation_amount	29.6	26.4	11.7	63.6	60.6	79.6	126	45.2	109.5	109.9	33.7	16.7	
SK0004R	zinc	18	3	33	11	8	15	38	14	5	8	13	32	
SK0005R	aluminium	48	72	59	21	20	13	27	17	9	12	30	19	
SK0005R	iron	57	57	121	36	28	7	42	36	7	8	50	37	
SK0005R	manganese	4.8	10.2	11.6	5.1	7	3.6	5.2	12.9	2	2.5	4	0.8	
SK0005R	precipitation_amount	36	39.2	31.7	81.8	59.9	140	95	33	106.4	68.3	54.6	24.9	
SK0005R	zinc	35	21	44	9	12	11	44	16	7	9	41	68	
SK0006R	aluminium	51	80	8	19	90	20	16	19	21	28	26	25	
SK0006R	iron	30	32	37	34	83	5	8	13	9	8	11	16	
SK0006R	precipitation_amount	36.6	38.3	47.3	85.3	55.9	93.8	156.7	91.4	103.5	113.2	52.3	68.7	
SK0006R	zinc	16	10	18	5	3	10	48	14	16	17	9	13	

Annex 6

Monthly mean values for heavy metals in air

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CZ0001R	cadmium	-	1.01	0.322	0.286	0.14	0.068	0.25	0.318	0.198	0.33	0.76	0.33
CZ0001R	lead	-	13.75	10.75	7.4	9.5	11.8	7.2	12.4	7.8	7.5	6.4	5.667
CZ0003R	cadmium	0.87	0.344	0.1	0.206	0.075	0.146	0.8	0.53	0.233	0.33	0.912	0.384
CZ0003R	lead	29.3	17.84	3.8	6.8	3	7.4	15.333	11.6	6	12	7.6	8.8
DE0001R	cadmium	0.212	0.242	0.11	0.122	0.095	0.091	0.027	0.035	0.223	0.069	0.445	0.153
DE0001R	copper	2.1	1.65	1.01	0.78	0.74	2	0.54	0.3	1.48	0.41	3.31	1.42
DE0001R	iron	109	88	99	100	201	119	49	71	106	32	178	47
DE0001R	lead	9.16	13.03	5.16	5.6	5.04	4.4	2.17	2.35	8.17	2.96	15.68	6.43
DE0001R	manganese	4.03	3.9	3.27	4.14	6.51	4.25	2.32	2.79	4.39	1.32	6.05	1.88
DE0001R	nickel	1.18	1.92	0.96	1.22	1.16	1.07	0.54	0.64	1.1	0.52	1.61	0.8
DE0002R	arsenic	0.42	0.78	0.54	0.71	0.69	0.37	0.28	0.54	1.17	0.48	2.28	1.68
DE0002R	cadmium	0.183	0.35	0.187	0.168	0.157	0.146	0.085	0.118	0.201	0.166	0.347	0.326
DE0002R	copper	2.3	4.05	3.05	2.79	3.02	2.59	2.11	3.06	3.74	3.25	4.15	3.41
DE0002R	iron	60	164	97	64	135	76	55	99	76	59	69	68
DE0002R	lead	8.99	17.25	7.29	8.24	7.62	5.13	4.19	4.79	9.6	5.85	18.55	14.37
DE0002R	manganese	2.74	7.02	3.21	2.81	6.39	2.68	2.38	4.04	5	2.67	2.95	2.97
DE0002R	nickel	0.6	1.49	0.71	0.53	0.96	0.53	0.48	0.6	0.77	0.69	0.97	0.98
DE0003R	arsenic	0.62	0.19	0.35	0.12	0.43	0.16	0.2	0.31	0.18	0.12	0.19	0.1
DE0003R	cadmium	0.331	0.098	0.152	0.07	0.134	0.068	0.164	0.173	0.113	0.077	0.057	0.07
DE0003R	copper	1.48	0.73	1.07	0.2	1.76	0.39	1.53	2.32	0.43	0.77	0.26	0.32
DE0003R	iron	93	72	168	54	161	135	97	183	75	58	21	11
DE0003R	lead	3.04	3.7	4.5	3.24	6.77	3	4.82	7.09	4.19	3.65	3.03	2.24
DE0003R	manganese	2.54	2	4.09	1.42	5.04	3.12	4.25	6.02	2.02	2.07	0.77	0.45
DE0003R	nickel	0.85	0.47	0.63	0.49	0.73	0.51	1.1	1.12	0.56	0.38	0.27	0.25
DE0004R	arsenic	1.01	0.82	0.62	0.37	0.78	0.35	0.43	0.6	0.71	0.46	1.14	1.05
DE0004R	cadmium	0.281	0.383	0.224	0.139	0.246	0.176	0.166	0.257	0.234	0.178	0.326	0.318
DE0004R	copper	2.63	4.3	2.63	2.22	3.86	2.8	2.69	3.08	2.57	2.19	3.2	3.5
DE0004R	iron	21	41	51	25	56	47	38	68	32	21	33	27
DE0004R	lead	13.45	18.59	10.62	10.06	10.79	9.96	9.53	10.89	10.47	8.96	14.34	10.98
DE0004R	manganese	4.05	7.68	6.55	4.46	7.64	7.23	6.78	8.92	5	4.17	6.42	3.76
DE0004R	nickel	0.76	1.02	0.87	0.59	0.99	0.6	0.81	1.03	0.73	0.67	1.35	1.2
DE0005R	arsenic	0.48	0.36	0.44	0.14	0.39	0.19	0.16	0.31	0.24	0.1	0.55	0.36
DE0005R	cadmium	0.124	0.161	0.133	0.062	0.142	0.095	0.111	0.096	0.095	0.047	0.103	0.12
DE0005R	copper	0.21	0.77	0.6	0.89	0.99	0.93	0.83	1.85	0.31	0.23	0.06	0.23
DE0005R	iron	39	86	128	56	129	117	51	145	47	16	24	18
DE0005R	lead	6.66	8.33	6.7	3.74	7.15	4.2	3.69	5.02	5.16	2.17	5.58	4.97
DE0005R	manganese	1.94	3.45	4.1	2.18	4.15	3.5	1.95	4.42	1.97	0.65	1.17	0.93
DE0005R	nickel	0.54	1.23	0.58	0.74	0.72	1.06	0.6	1.18	0.61	0.68	0.87	1.13
DE0007R	arsenic	0.82	0.77	1.26	0.95	1.21	0.59	0.17	0.5	1.89	0.59	4.55	1.7
DE0007R	cadmium	0.247	0.486	0.265	0.321	0.224	0.12	0.317	0.094	0.311	0.192	0.582	0.362
DE0007R	copper	1.89	2.77	2.86	0.98	1.67	0.81	1.46	1.18	2	2.12	7.26	2.52
DE0007R	iron	49	125	91	60	121	80	113	107	70	53	66	56
DE0007R	lead	14.78	16.74	9.82	11.35	10.68	6.69	5.97	4.14	13.64	7.67	30.71	18.58
DE0007R	manganese	2.53	6.27	3.31	3.15	4.91	3.57	3.47	4.83	3.48	2.62	3.78	2.84
DE0007R	nickel	0.85	1.63	1.41	1.52	1.1	1.06	1.15	1	1.36	1.25	1.79	1.7
DE0008R	arsenic	0.61	0.39	0.2	0.84	0.65	0.28	0.41	0.54	0.52	0.22	0.62	0.69
DE0008R	cadmium	0.141	0.146	0.109	0.222	0.183	0.123	0.166	0.146	0.201	0.114	0.124	0.167
DE0008R	copper	0.38	0.48	0.53	1.5	1.15	1.23	1.34	1.72	1.89	0.42	0.74	0.75
DE0008R	iron	24	36	81	110	130	145	95	167	79	14	21	16
DE0008R	lead	7.53	7.24	5.08	7.11	9.85	4.57	5.36	5.06	6.12	3.47	7.06	7.8
DE0008R	manganese	1.68	2.1	3.6	4.41	4.64	4.78	4.74	5.97	3.22	1.09	1.37	1.63

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DE0008R	nickel	0.21	0.27	0.28	0.9	0.65	0.55	0.77	0.91	0.74	0.38	0.55	1.85
DE0009R	arsenic	0.53	0.72	0.64	0.85	0.4	0.33	0.19	0.24	1.01	0.29	1.22	1.46
DE0009R	cadmium	0.183	0.262	0.171	0.197	0.125	0.078	0.053	0.055	0.238	0.107	0.546	0.27
DE0009R	copper	2.17	3.34	1.85	2.24	1.86	1.04	1.64	0.95	1.62	2.09	4.68	1.79
DE0009R	iron	68	125	75	84	127	78	58	72	83	49	104	61
DE0009R	lead	9.7	13.3	6.7	8.1	5.7	3.8	2.5	2.8	8.9	4.9	25.2	13.2
DE0009R	manganese	2.63	5.08	2.73	3.16	4.12	2.79	2.11	2.48	3.29	1.92	4	2.34
DE0009R	nickel	1.11	2.49	1.74	1.73	2.29	1.53	1.41	1.22	1.42	0.79	2.73	1.93
DK0005R	copper	2.212	2.071	1.078	1.513	2.861	1.056	0.647	0.994	1.634	0.908	3.038	2.324
DK0005R	lead	9.184	14.028	5.478	7.561	5.163	4.543	2.493	3.037	8.778	3.96	18.631	14.083
DK0005R	nickel	1.159	2.214	1.562	2.452	3.356	1.703	1.135	0.988	1.91	0.97	2.031	1.877
DK0005R	zinc	20.07	21.581	11.027	14.175	13.286	8.766	4.808	5.534	15.011	8.93	30.479	21.111
DK0008R	copper	1.451	0.988	0.819	1.183	0.846	0.78	0.596	0.446	1.532	0.616	1.319	1.362
DK0008R	lead	6.735	5.906	4.13	5.746	3.472	2.505	1.785	1.587	5.294	1.881	9.211	7.852
DK0008R	nickel	1.549	1.16	1.322	1.869	1.798	1.251	0.841	0.775	1.291	0.597	1.144	1.606
DK0008R	zinc	13.758	8.756	8.573	12.785	8.794	5.701	4.97	3.43	10.265	4.195	16.015	12.366
DK0031R	arsenic	0.311	0.287	0.401	0.466	0.315	0.212	0.131	0.193	0.537	0.173	1.588	0.965
DK0031R	cadmium	0.224	0.207	0.105	0.069	0.055	0.066	0.038	0.03	0.261	0.154	0.38	0.368
DK0031R	cadmium	0.263	0.274	0.22	0.143	0.152	0.184	0.174	0.158	0.343	0.222	0.405	0.392
DK0031R	chromium	0.545	0.489	0.412	0.411	0.382	0.327	0.24	0.389	0.427	0.33	1.034	0.792
DK0031R	copper	1.221	1.019	1.068	1.365	1.021	0.683	0.459	0.495	1.22	0.459	3.075	2.044
DK0031R	lead	8.089	7.753	4.427	5.356	4.4	3.574	1.93	1.96	6.756	2.097	17.688	13.128
DK0031R	nickel	0.907	1.249	0.814	1.294	1.047	0.933	0.592	0.575	1.023	0.392	1.678	1.446
DK0031R	zinc	15.108	10.68	9.863	12.376	10.027	7.28	4.306	4.119	12.731	6.857	32.13	18.257
IS0091R	aluminium	-	253.292	366.922	464.44	399.706	120.475	140.27	118.676	309.222	215.41	368.775	239.262
IS0091R	arsenic	-	0.061	0.08	0.08	0.048	0.021	0.017	0.031	0.055	0.089	0.059	0.015
IS0091R	cadmium	-	0.107	0.212	0.013	0.045	0.018	0.105	0.097	0.014	0.036	0.13	0.259
IS0091R	chloride	10.471	10.687	12.084	6.492	6.831	5.277	2.569	5.041	4.957	6.794	21.898	22.239
IS0091R	chromium	-	7.507	12.701	12.351	6.441	4.872	1.401	12.04	14.242	1.992	10.759	8.583
IS0091R	copper	-	0.629	0.952	0.787	0.645	0.28	0.358	0.269	1.443	0.432	0.767	0.513
IS0091R	iron	-	453.715	622.832	833.31	672.032	188.027	205.7	107.974	1051.587	360.342	567.22	366.836
IS0091R	lead	-	0.968	0.776	0.503	0.765	0.301	0.58	0.569	0.511	0.561	1.315	1.143
IS0091R	manganese	-	7.371	10.006	13.134	10.139	2.976	3.195	3.029	16.289	5.408	9.32	6.126
IS0091R	mercury	-	1.211	1.758	1.048	1.214	1.712	2.606	1.314	1.335	0.736	0.94	1.001
IS0091R	nickel	-	6.03	10.097	10.331	5.682	4.784	2.334	10.114	10.744	1.946	8.842	7.448
IS0091R	vanadium	-	1.595	2.709	2.762	2.17	0.562	1.087	0.249	3.309	1.334	1.726	0.992
IS0091R	zinc	-	8.981	7.173	3.23	4.551	2.593	4.206	6.145	3.673	3.438	12.912	14.663
LT0015R	cadmium	0.452	0.353	0.683	0.369	0.223	0.216	0.093	0.101	0.313	-	0.537	0.331
LT0015R	copper	5.056	2.341	2.288	2.365	2.512	1.712	1.264	1.397	2.3	-	2.239	2.257
LT0015R	lead	13.862	13.019	10.306	8.894	7.644	6.259	2.534	2.611	7.739	-	12.877	10.55
LT0015R	manganese	2.462	1.959	1.887	6.315	5.18	2.368	2.013	2.248	10.304	-	3.302	1.897
LT0015R	vanadium	2.985	4.899	5.677	3.284	2.61	2.151	1.731	1.427	1.561	-	10.637	4.411
LT0015R	zinc	25.349	25.833	27.093	20.583	14.172	18.978	10.269	13.65	20.238	-	34.237	23.893
LV0010R	cadmium	0.709	0.34	0.188	0.119	0.086	0.05	-	-	-	-	-	-
LV0010R	copper	2.927	2.45	0.657	0.617	0.371	0.675	-	-	-	-	-	-
LV0010R	lead	10.633	3.4	0.547	0.697	1.348	0.757	-	-	-	-	-	-
LV0010R	zinc	49.57	89.4	8.27	11.647	8.748	6.193	-	-	-	-	-	-
LV0016R	cadmium	0.41	0.17	0.219	0.186	0.106	0.1	0.11	0.058	0.143	0.229	0.337	0.371
LV0016R	copper	1.95	1.6	1.047	0.823	0.921	0.541	0.706	0.742	0.82	0.684	0.947	0.848
LV0016R	lead	5.25	2.1	1.365	1.68	1.192	1.241	2.29	1.516	2.24	4.223	2.647	3.481
LV0016R	zinc	-	-	101.838	10.987	7.042	5.559	6.9	5.597	9.65	9.668	15.557	14.574

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NL0009R	arsenic	0.54	0.92	0.5	0.374	0.48	0.406	0.333	0.297	0.791	0.365	0.966	1.23
NL0009R	cadmium	0.266	0.388	0.149	0.107	0.149	0.109	0.084	0.077	0.168	0.121	0.48	0.272
NL0009R	lead	15.403	21.056	7.744	6.935	7.014	6.694	5.088	4.612	9.053	5.809	14.84	13.183
NL0009R	zinc	44.945	42.811	28.205	27.562	32.587	22.233	19.181	19.739	26.83	19.189	37.868	35.175
NO0042G	arsenic	0.481	0.245	0.393	0.058	0.028	0.01	0.03	0.043	0.014	0.017	0.036	0.102
NO0042G	cadmium	0.164	0.05	0.053	0.019	0.008	0.001	0.008	0.008	0.002	0.004	0.008	0.018
NO0042G	chromium	0.196	0.135	0.157	0.22	0.115	0.054	0.042	0.07	0.041	0.078	0.652	0.158
NO0042G	cobalt	0.061	0.023	0.266	0.14	0.059	0.016	0.034	0.111	0.019	0.038	0.151	0.784
NO0042G	copper	0.641	0.264	0.487	0.362	0.298	0.203	0.281	0.349	0.277	0.328	0.309	0.452
NO0042G	lead	3.48	1.815	1.753	0.525	0.252	0.065	0.183	0.142	0.058	0.121	0.198	0.368
NO0042G	manganese	0.602	0.444	0.541	0.344	0.268	0.063	0.263	0.071	0.586	0.228	0.579	0.185
NO0042G	mercury	1.09	0.953	0.806	1.297	1.255	1.862	1.53	1.702	2.098	1.632	1.528	1.524
NO0042G	nickel	0.204	0.09	0.269	0.193	0.105	0.07	0.181	0.174	0.022	0.022	0.038	0.066
NO0042G	vanadium	0.274	0.133	0.333	0.108	0.054	0.012	0.125	0.034	0.061	0.032	0.074	0.101
NO0042G	zinc	3.13	1.467	2.538	0.892	0.612	1.099	0.653	0.735	0.836	1.497	1.549	1.668
NO0099R	arsenic	0.23	0.07	0.27	0.53	0.16	0.33	0.12	0.16	0.29	0.2	0.45	0.44
NO0099R	cadmium	0.099	0.028	0.06	0.111	0.042	0.055	0.024	0.031	0.064	0.022	0.06	0.088
NO0099R	chromium	0.83	3.66	1.44	1.01	1.12	1.26	0.93	3.63	1.44	0.9	1.03	1.18
NO0099R	copper	0.81	1.15	0.39	1.23	0.43	0.75	0.93	0.93	0.99	0.36	0.72	0.8
NO0099R	lead	4.37	1.55	2.52	4	2.05	2.44	1.16	1.23	2.98	0.88	2.9	4.23
NO0099R	mercury	1.92	2.49	1.31	1.53	3.35	-	1.93	2.14	1.32	1.25	1.71	1.27
NO0099R	nickel	0.26	0.96	0.57	0.55	0.35	0.65	0.39	0.53	0.82	0.37	0.64	1.32
NO0099R	vanadium	0.97	0.65	1.16	1.78	1.47	2.05	1.49	1.04	1.61	0.36	0.7	1.26
NO0099R	zinc	6.93	5.56	3.91	6.42	3.25	8.61	3.51	4.32	6.87	2.65	7.42	8.09
SE0002R	mercury	1.367	1.475	1.457	1.212	1.333	1.125	1.167	1.1	1.214	1.044	1.357	1.1
SK0002R	cadmium	0	0.1	0.1	0.1	0.1	0.1	-	0.3	0.2	0.2	0.1	0
SK0002R	chromium	23.5	24	15.5	12.9	1.9	1.3	-	2.5	1.8	1.8	3.3	1.6
SK0002R	copper	2.9	4.6	9.7	51.6	3.2	2.1	-	4.6	3.1	2.9	3.6	2.4
SK0002R	lead	0.8	2.3	1.9	2.6	3.1	3.4	-	8.9	5.2	2.5	4.2	1.3
SK0002R	manganese	4.8	6.8	12	20.4	1.5	1.8	-	7.8	1.6	1.3	2	0.8
SK0002R	nickel	13	14.7	8.4	6.6	0.9	0.7	-	0.8	0.3	1.6	1.4	0.7
SK0002R	zinc	18.9	27.3	18.8	29.3	45.7	46.1	-	56.5	51.8	45.5	52	46.2
SK0004R	cadmium	0.3	0.4	0.4	0.4	0.5	0.3	0.2	0.5	0.4	0.8	0.5	0.6
SK0004R	chromium	0.4	0.5	0.5	0.4	0.4	0.5	1.6	1.6	1.2	0.9	0.8	1.4
SK0004R	copper	5.4	3.6	3.1	3.6	4.7	3.4	3.3	5.4	4.2	9.6	7.7	9.2
SK0004R	lead	17	13.6	17.7	14.4	22.5	11.8	9.9	19.1	20.8	54.1	46.7	64.7
SK0004R	manganese	2.8	5.3	3.8	5.3	5.7	4	5.4	8	4.7	4	4.2	3.8
SK0004R	nickel	0.5	0.6	0.2	0.2	0.7	0.2	0.9	1.4	0.3	0.9	1.2	1.2
SK0004R	vanadium	1.4	2.1	1.5	0.7	0.5	1.2	0.8	1.3	0.8	1.2	1.6	2.2
SK0004R	zinc	42.8	36.9	56	53.8	49.5	34.3	42	36.6	51	90.8	108.1	152.9
SK0005R	cadmium	0.5	0.6	0.5	0.5	0.4	0.3	-	0.4	0.5	0.4	0.4	0.4
SK0005R	chromium	2.8	2	2.3	1.3	1.5	1.1	-	3.4	1.8	2.2	3	6.1
SK0005R	copper	18.1	18.3	22.9	11.1	23.9	21.4	-	49.3	12.9	30.5	9.7	18.2
SK0005R	lead	15.2	13.9	12.8	12.9	11.6	10	-	16.2	15.2	16.4	17.6	19.3
SK0005R	manganese	23.9	30.4	19.1	23.4	17.1	15.7	-	34.7	13.9	11.5	16.2	16.9
SK0005R	nickel	1.4	0.7	0.6	0.4	0.1	0.6	-	1.5	1.1	1	3.3	5.9
SK0005R	vanadium	3.8	2.5	1.6	1.7	1.3	1.7	-	2.1	1.4	1.3	3.1	3.5
SK0005R	zinc	53.6	58.1	54.2	48.3	31.6	60.8	-	59.2	63.1	60.3	94.2	69.8
SK0006R	cadmium	0.7	0.9	0.3	0.4	0.2	0.3	0.3	0.4	0.6	0.5	-	0.6
SK0006R	chromium	0.5	0.9	0.5	1	0.4	0.5	1.2	3.1	4.7	3.7	-	2.2
SK0006R	copper	3.3	3.7	2.2	3.8	2.5	3.2	2.5	4.3	4.9	6.1	-	4.1

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SK0006R	lead	26.8	31.2	11.7	27.1	9.2	15.9	12.1	16.9	28.5	23.3	-	21.2
SK0006R	manganese	2.6	4.1	3.2	1	3.7	3.6	3.2	5.6	6.3	3.7	-	2.3
SK0006R	nickel	-	-	-	-	-	-	0.2	-	0.4	1.2	-	0.9
SK0006R	vanadium	2	3	2.1	2	1.1	1.1	0.8	1.8	2.6	2.5	-	4
SK0006R	zinc	31.9	48.2	30.3	43.4	28.4	35.8	26.7	71.5	59.2	58.4	-	61.2

Annex 7

Monthly mean values on data for POPs in precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
DE0001R HCB	0.530	0.730	0.240	0.030	0.350	0.200	0.030	0.030	0.030	0.030	0.110	0.030	
DE0001R PCB_101	0.030	0.030	0.030	0.030	0.030	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R PCB_118	0.070	0.070	0.070	0.070	0.070	-	-	-	-	-	-	-	
DE0001R PCB_138	0.070	0.070	0.070	0.600	0.250	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R PCB_153	0.070	0.070	0.420	0.260	0.450	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R PCB_28	0.010	0.010	0.010	0.010	0.010	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R PCB_52	0.070	0.070	0.520	0.070	0.070	0.130	0.130	0.130	0.130	0.130	0.130	0.130	
DE0001R alpha_HCH	0.660	0.550	0.500	0.510	0.750	0.330	0.630	0.180	0.310	1.100	0.700	0.450	
DE0001R anthracene	4.300	10.000	0.650	0.610	-	0.330	0.900	0.400	0.500	0.330	0.500	0.500	
DE0001R benzo_a_anthracene	66.000	166.000	3.610	1.500	-	0.700	0.670	0.670	0.670	1.910	2.900	2.500	
DE0001R benzo_a_pyrene	26.000	62.000	2.610	0.700	-	0.670	0.670	1.200	1.500	1.700	3.000	2.800	
DE0001R benzo_b_fluoranthene	33.000	76.000	6.200	2.400	-	1.500	1.600	1.600	2.700	4.400	7.500	5.400	
DE0001R benzo_ghi_perylene	18.000	40.000	0.700	1.200	-	1.000	1.700	1.400	2.000	2.300	4.300	3.500	
DE0001R benzo_k_fluoranthene	19.000	41.000	2.300	1.000	-	0.670	0.670	0.670	0.900	1.700	2.900	2.200	
DE0001R chrysene	73.000	168.000	6.800	5.800	-	1.200	1.500	1.400	2.800	5.300	8.800	5.400	
DE0001R dibenzo_ah_anthracene	2.700	8.000	6.500	0.670	-	0.670	0.670	0.670	0.670	0.670	0.700	0.900	
DE0001R dieldrin	0.330	0.070	0.110	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R fluoranthene	84.000	277.000	27.000	9.300	-	1.330	1.330	2.700	5.400	15.500	17.800	14.600	
DE0001R gamma_HCH	3.000	36.000	14.000	13.900	12.400	8.800	4.500	0.950	2.900	5.300	2.200	2.400	
DE0001R heptachlor	0.010	0.010	0.010	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	
DE0001R inden_123cd_pyrene	3.330	17.000	3.330	3.330	-	3.330	3.330	3.330	3.330	3.330	3.800	3.330	
DE0001R phenanthrene	78.000	175.000	25.000	-	-	-	-	4.000	7.300	15.300	19.500	19.400	
DE0001R pp_DDD	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R pp_DDE	0.850	1.900	0.160	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R pp_DDT	3.200	6.400	0.900	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0001R precipitation_amount	42.800	26.100	24.600	70.000	7.500	45.000	56.400	109.200	71.200	124.400	100.600	61.800	
DE0001R precipitation_amount_off	61.900	23.500	30.100	56.100	11.000	46.400	92.000	52.600	75.200	149.000	57.700	47.200	
DE0001R pyrene	81.000	203.000	15.000	10.400	-	3.500	1.330	2.700	5.300	11.000	12.500	9.900	
DE0009R HCB	0.180	0.050	0.060	0.210	0.550	0.030	0.030	0.030	0.030	0.030	0.030	0.030	
DE0009R PCB_101	0.030	0.710	0.310	0.110	0.840	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R PCB_118	0.140	0.070	0.070	0.070	0.270	-	-	-	-	-	-	-	
DE0009R PCB_138	0.860	0.500	0.420	0.120	0.540	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R PCB_153	0.680	0.160	0.220	0.130	0.160	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R PCB_180	0.590	0.260	0.200	0.070	0.100	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R PCB_28	0.010	0.500	0.010	0.010	0.030	-	-	-	-	-	-	-	
DE0009R PCB_52	0.070	0.750	0.070	0.070	0.520	0.130	0.130	0.130	0.130	0.260	0.130	0.130	
DE0009R aldrin	0.010	0.010	0.010	0.010	0.010	0.070	0.070	0.070	0.070	0.070	0.070	0.210	
DE0009R anthracene	0.800	0.500	0.900	0.600	1.200	2.500	2.100	1.900	2.000	1.300	4.900	2.200	
DE0009R benzo_a_anthracene	5.200	5.400	6.300	9.500	4.800	7.300	0.700	0.700	0.700	3.900	16.300	9.400	
DE0009R benzo_a_pyrene	3.100	3.500	2.900	6.700	3.900	9.500	2.100	1.900	1.800	3.000	10.600	9.000	
DE0009R benzo_b_fluoranthene	9.300	6.100	5.600	11.000	4.600	15.700	3.300	3.200	3.700	9.400	33.100	22.400	
DE0009R benzo_ghi_perylene	4.600	5.200	3.500	10.000	5.600	12.400	4.400	4.300	4.200	5.400	14.700	12.500	
DE0009R benzo_k_fluoranthene	3.500	2.700	2.600	5.100	2.100	7.300	0.700	0.700	0.700	3.700	13.200	8.800	
DE0009R chrysene	10.000	7.600	7.100	16.000	6.200	14.500	3.000	2.700	3.900	10.300	36.300	24.800	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
DE0009R dibenzo_ah_anthracene	0.700	0.700	0.700	0.700	0.700	2.800	0.700	0.700	0.700	0.800	2.400	2.000	
DE0009R dieldrin	0.070	0.070	0.270	0.590	-	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R endrin	0.130	0.130	0.130	0.130	-	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R fluoranthene	19.000	19.000	26.000	55.000	19.000	12.600	9.200	1.300	15.400	30.200	93.500	73.100	
DE0009R heptachlor	0.010	0.010	0.010	0.010	0.040	0.130	0.130	0.130	0.130	0.130	0.130	0.130	
DE0009R inden_123cd_pyrene	3.300	3.300	3.300	3.300	3.300	12.100	3.300	3.300	3.300	5.100	16.900	14.000	
DE0009R op_DDT	0.470	1.200	0.670	0.290	0.400	-	-	-	-	-	-	-	
DE0009R phenanthrene	27.000	21.000	25.000	19.000	31.000	-	-	3.500	29.900	52.300	85.400	100.100	
DE0009R pp_DDT	2.300	1.900	1.600	1.900	1.100	0.070	0.070	0.070	0.070	0.070	0.070	0.070	
DE0009R precipitation_amount	58.500	36.600	37.800	72.000	15.200	190.000	83.200	55.600	53.800	51.600	84.000	34.000	
DE0009R pyrene	12.000	8.900	14.000	19.000	12.000	16.300	10.600	8.600	12.300	22.700	69.600	45.900	
DE0009R sum_PCB	2.380	2.950	1.300	0.580	2.460	0.410	0.410	0.410	0.410	0.540	0.410	0.410	
IS0091R HCB	0.030	0.013	0.037	0.018	0.024	0.008	0.008	0.007	0.023	0.008	0.012	0.076	*
IS0091R PCB_101	0.015	0.001	0.001	0.002	0.002	0.019	0.004	0.002	0.001	0.002	0.002	0.001	*
IS0091R PCB_105	0.030	0.001	0.002	0.001	0.008	0.002	0.008	0.025	0.001	0.005	0.006	0.001	*
IS0091R PCB_118	0.044	0.001	0.011	0.005	0.014	0.022	0.021	0.005	0.001	0.002	0.007	0.003	*
IS0091R PCB_138	0.084	0.002	0.010	0.008	0.001	0.010	0.004	0.002	0.001	0.002	0.003	0.009	*
IS0091R PCB_153	0.039	0.002	0.002	0.007	0.001	0.005	0.004	0.002	0.001	0.003	0.001	0.003	*
IS0091R PCB_156	0.025	0.004	0.006	0.001	0.011	0.001	0.001	0.010	0.003	0.001	0.006	0.001	*
IS0091R PCB_180	0.054	0.007	0.004	0.002	0.004	0.001	0.005	0.011	0.007	0.008	0.021	0.017	*
IS0091R PCB_28	0.066	0.016	0.016	0.126	0.041	0.016	0.019	0.026	0.016	0.023	0.016	0.016	*
IS0091R PCB_31	0.052	0.007	0.007	0.083	0.025	0.007	0.007	0.012	0.007	0.008	0.008	0.007	*
IS0091R PCB_52	0.020	0.003	0.003	0.168	0.010	0.003	0.009	0.005	0.003	0.003	0.010	0.003	*
IS0091R alpha_HCH	0.290	0.344	0.341	0.275	0.258	0.168	0.255	0.197	0.473	0.422	0.337	0.228	*
IS0091R beta_HCH	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.003	0.007	0.003	*
IS0091R cis_CD	0.001	0.004	0.003	0.002	0.001	0.001	0.001	0.007	0.007	0.002	0.016	0.011	*
IS0091R dieldrin	0.049	0.055	0.046	0.050	0.036	0.027	0.025	0.015	0.021	0.046	0.040	0.054	*
IS0091R gamma_HCH	0.133	0.057	0.341	0.619	0.460	0.344	0.110	0.141	1.111	0.038	0.043	0.003	*
IS0091R op_DDT	0.030	0.009	0.003	0.015	0.003	0.012	0.001	0.001	0.001	0.001	0.001	0.001	*
IS0091R pp_DDD	0.015	0.009	0.006	0.004	0.009	0.009	0.004	0.004	0.004	0.004	0.004	0.004	*
IS0091R pp_DDE	0.003	0.006	0.013	0.007	0.006	0.008	0.006	0.003	0.007	0.003	0.003	0.003	*
IS0091R pp_DDT	0.008	0.025	0.031	0.019	0.028	0.035	0.004	0.004	0.004	0.004	0.026	0.004	*
IS0091R precipitation_amount_off	41.385	70.882	47.689	28.240	68.714	41.000	46.133	135.881	31.571	49.114	123.701	140.531	*
IS0091R trans_CD	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	*
IS0091R trans_NO	0.001	0.003	0.003	0.002	0.003	0.003	0.001	0.002	0.003	0.001	0.002	0.002	*
NO0099R HCB	0.750	1.150	0.789	0.846	1.064	0.680	0.408	0.576	0.661	1.023	0.436	0.822	
NO0099R alpha_HCH	0.913	0.941	0.769	1.710	1.655	0.601	0.667	0.664	0.991	1.455	1.070	0.925	
NO0099R gamma_HCH	3.968	1.677	14.708	4.833	15.051	8.697	1.927	2.541	5.476	1.999	2.566	2.516	
NO0099R precipitation_amount	30.574	25.541	82.198	39.044	18.247	40.381	36.306	75.191	72.707	84.681	81.147	51.688	

Annex 8

Monthly mean values on data for POPs in air

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
CS0003R PCB_101	12.000	28.000	19.750	42.400	32.500	28.250	32.400	41.750	23.600	22.750	17.000	17.250	
CS0003R PCB_118	1.500	5.250	2.750	4.000	2.750	2.500	4.600	4.250	2.200	2.750	1.000	1.500	
CS0003R PCB_138	11.250	42.500	33.500	39.800	19.750	17.250	35.800	31.500	20.800	23.000	18.000	20.750	
CS0003R PCB_180	7.250	28.000	21.250	25.200	14.000	10.750	20.200	13.500	11.000	11.250	9.500	14.250	
CS0003R PCB_28	12.250	28.750	20.000	46.600	114.000	49.750	52.000	45.000	30.000	28.750	19.250	15.000	
CS0003R PCB_52	18.000	48.750	36.500	53.800	77.000	44.000	37.000	40.250	26.200	23.000	16.250	15.250	
CS0003R acenaphtene	0.295	0.260	0.290	0.106	0.057	0.027	0.028	0.050	0.070	0.080	0.540	0.770	
CS0003R alpha_HCH	32.000	59.750	61.250	114.000	68.250	51.000	38.600	37.500	52.600	61.000	27.000	29.000	
CS0003R antracene	0.520	0.335	0.295	0.078	0.052	0.040	0.038	0.032	0.086	0.237	0.252	0.514	
CS0003R benz_a_antracene	1.245	0.592	0.650	0.112	0.048	0.010	0.018	0.020	0.060	0.078	0.470	1.296	
CS0003R benzo_a_pyrene	1.210	0.540	0.493	0.090	0.022	0.010	0.010	0.010	0.084	0.102	0.353	0.954	
CS0003R fluoranthene	5.553	3.978	3.380	1.416	0.810	0.312	0.244	0.278	0.720	1.550	3.553	6.154	
CS0003R fluorene	5.028	4.807	3.480	1.624	0.977	0.412	0.338	0.427	1.016	1.248	6.245	7.496	
CS0003R gamma_HCH	3.250	40.250	98.250	443.400	200.750	241.500	135.400	93.250	69.400	80.000	37.000	17.750	
CS0003R iden_123cd_pyrene	1.393	0.670	0.618	0.156	0.030	0.010	0.018	0.015	0.122	0.132	0.600	1.258	
CS0003R naphtalene	0.270	0.610	0.435	0.348	0.190	0.047	0.130	0.207	0.432	0.440	3.053	2.960	
CS0003R phenanthrene	13.148	10.887	6.968	3.768	2.490	1.540	1.010	1.125	2.482	5.462	10.427	13.574	
CS0003R pp_DDD	2.000	2.000	2.000	2.000	2.000	2.000	2.000	-	-	-	-	-	
CS0003R pp_DDE	21.750	70.750	60.500	102.000	31.000	38.500	30.800	29.444	29.968	51.500	17.750	10.200	
CS0003R pp_DDT	4.000	4.000	4.000	4.000	4.000	4.000	4.000	-	-	-	-	-	
CS0003R pyrene	3.788	2.477	2.165	0.836	0.500	0.138	0.118	0.138	0.414	1.187	2.325	4.298	
IS0091R HCB	20.372	36.739	45.304	64.912	7.029	2.461	3.094	2.915	4.698	8.117	6.135	4.858	
IS0091R PCB_101	0.133	0.212	0.076	0.067	0.181	0.067	0.353	0.162	0.481	0.579	0.120	0.088	
IS0091R PCB_105	0.122	0.046	0.046	0.046	0.046	0.111	0.442	0.415	0.070	0.213	0.046	0.046	
IS0091R PCB_118	0.219	0.380	0.068	0.047	0.047	0.199	0.047	0.047	0.073	0.073	0.049	0.047	
IS0091R PCB_138	0.043	0.355	0.043	0.043	0.043	0.043	0.044	0.043	0.049	0.048	0.043	0.047	
IS0091R PCB_153	0.303	0.512	0.060	0.050	0.050	0.050	0.133	0.083	0.098	0.096	0.052	0.050	
IS0091R PCB_180	0.041	1.689	0.041	0.041	0.041	0.041	0.044	0.041	0.070	0.041	0.041	0.041	
IS0091R PCB_28	0.234	0.234	13.485	0.234	1.844	0.234	9.722	15.092	10.412	3.705	1.570	1.976	
IS0091R PCB_31	0.319	0.319	20.009	0.319	0.319	0.319	0.319	0.569	0.621	1.357	0.364	0.508	
IS0091R PCB_52	0.177	0.177	0.491	0.177	0.231	0.177	0.177	0.177	0.220	1.045	0.210	0.442	
IS0091R alpha_HCH	14.353	16.221	40.879	57.895	9.975	3.767	5.613	6.750	12.399	24.267	19.816	8.555	
IS0091R aop_DDE	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 beta_HCH	0.269	0.269	0.269	0.269	0.162	0.228	0.269	0.269	0.269	0.269	0.306	0.270	
IS0091R cis_CD	0.206	0.233	0.721	0.233	0.983	0.814	0.752	0.787	0.661	0.675	0.413	0.357	
IS0091R dieldrin	0.466	0.466	0.466	0.466	1.357	1.594	1.504	1.123	1.049	1.350	0.672	0.663	
IS0091R gamma_HCH	2.696	0.345	7.638	7.017	9.695	3.603	4.508	6.761	7.278	7.867	5.008	2.580	
IS0091R op_DDT	0.134	0.134	0.134	0.134	0.081	0.223	0.432	0.657	0.144	0.357	0.070	0.067	
IS0091R pp_DDD	3.377	0.345	1.403	2.632	0.244	0.244	0.244	0.363	0.261	0.245	0.244	0.244	
IS0091R pp_DDE	1.044	0.248	0.479	0.877	0.336	0.407	0.139	0.139	0.139	0.139	0.139	0.139	
IS0091R pp_DDT	10.299	0.690	6.803	10.526	0.088	0.088	0.530	0.716	0.174	0.088	0.088	0.088	
IS0091R trans_CD	0.134	0.134	0.134	0.134	0.162	0.158	0.134	0.134	0.134	0.134	0.134	0.134	
IS0091R trans_NO	0.151	0.151	0.151	0.151	0.548	0.407	0.398	0.415	0.285	0.386	0.206	0.151	
NO0042G HCB	75.171	71.475	76.925	69.975	27.200	-	76.700	93.425	93.892	92.188	94.950	72.360	
NO0042G N2methylphenanthrene	0.042	0.009	0.011	0.006	0.029	0.012	0.013	-	0.013	0.018	0.004	0.017	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
NO0042G N2metylanthrachene	0.005	0.006	0.005	0.005	0.006	0.010	0.002	-	0.002	0.009	0.002	0.003	
NO0042G N2metylphenanthrene	0.069	0.013	0.010	0.005	0.009	0.017	0.022	-	0.012	0.023	0.007	0.015	
NO0042G N3metylphenanthrene	0.056	0.013	0.007	0.005	0.007	0.012	0.016	-	0.011	0.015	0.005	0.011	
NO0042G N9metylphenanthrene	0.045	0.008	0.006	0.005	0.006	0.022	0.021	-	0.012	0.028	0.005	0.010	
NO0042G PCB_101	0.825	0.775	1.747	2.338	0.550	-	8.060	2.450	0.654	0.508	0.428	0.430	
NO0042G PCB_105	0.130	0.150	0.287	0.395	0.110	-	2.757	1.635	0.475	0.264	0.100	0.190	
NO0042G PCB_114	0.013	0.027	0.022	0.032	0.010	-	0.147	0.145	0.022	0.029	0.018	0.012	
NO0042G PCB_118	0.367	0.373	0.757	1.038	0.290	-	5.587	2.840	0.765	0.438	0.198	0.316	
NO0042G PCB_122	0.010	0.010	0.030	0.020	0.010	-	0.070	0.068	0.015	0.015	0.015	0.010	
NO0042G PCB_123	0.013	0.013	0.025	0.023	0.010	-	0.153	0.117	0.022	0.018	0.015	0.012	
NO0042G PCB_128	0.108	0.108	0.168	0.248	0.070	-	1.953	1.390	0.448	0.252	0.070	0.186	
NO0042G PCB_138	0.438	0.442	0.740	1.082	0.300	-	7.223	4.780	1.455	0.824	0.257	0.596	
NO0042G PCB_141	0.132	0.105	0.188	0.265	0.070	-	1.670	1.058	0.305	0.171	0.198	0.120	
NO0042G PCB_149	0.538	0.475	1.060	1.592	0.380	-	7.430	3.852	1.014	0.580	0.278	0.416	
NO0042G PCB_153	0.535	0.505	0.795	1.195	0.340	-	6.443	3.812	1.092	0.635	0.270	0.458	
NO0042G PCB_156	0.058	0.058	0.065	0.095	0.030	-	0.743	0.530	0.161	0.112	0.030	0.088	
NO0042G PCB_157	0.010	0.018	0.013	0.020	0.010	-	0.147	0.117	0.037	0.027	0.013	0.020	
NO0042G PCB_167	0.020	0.025	0.030	0.040	0.010	-	0.277	0.215	0.068	0.048	0.018	0.032	
NO0042G PCB_170	0.127	0.117	0.068	0.080	0.030	-	0.487	0.393	0.133	0.084	0.030	0.068	
NO0042G PCB_18	13.622	7.907	13.492	8.780	2.160	-	229.667	73.750	20.862	17.321	19.858	3.712	
NO0042G PCB_180	0.255	0.223	0.148	0.207	0.070	-	1.203	0.985	0.293	0.208	0.075	0.168	
NO0042G PCB_183	0.070	0.055	0.062	0.090	0.030	-	0.513	0.427	0.130	0.085	0.035	0.060	
NO0042G PCB_187	0.147	0.112	0.138	0.183	0.060	-	0.967	0.755	0.232	0.156	0.065	0.116	
NO0042G PCB_189	0.010	0.013	0.010	0.010	0.010	-	0.010	0.020	0.012	0.011	0.010	0.010	
NO0042G PCB_194	0.035	0.030	0.010	0.010	0.010	-	0.030	0.050	0.015	0.014	0.007	0.010	
NO0042G PCB_206	0.015	0.013	0.010	0.010	0.010	-	0.010	0.015	0.010	0.011	0.010	0.010	
NO0042G PCB_209	0.027	0.013	0.018	0.010	0.010	-	0.010	0.015	0.010	0.011	0.010	0.010	
NO0042G PCB_28	7.035	4.108	7.642	3.900	1.200	-	100.067	30.750	7.554	4.831	5.920	1.646	
NO0042G PCB_31	7.058	4.128	7.620	3.793	1.210	-	99.433	33.025	8.642	5.519	6.740	1.828	
NO0042G PCB_33	5.765	3.322	6.372	3.145	0.980	-	66.733	23.890	6.609	4.280	5.093	1.414	
NO0042G PCB_37	0.740	0.497	1.082	0.780	0.230	-	7.957	2.410	0.627	0.362	0.460	0.172	
NO0042G PCB_47	1.247	0.975	1.675	1.043	0.300	-	10.600	3.477	1.089	0.758	0.918	0.434	
NO0042G PCB_52	2.003	1.592	2.903	2.000	0.580	-	19.633	6.512	2.114	1.567	1.870	1.064	
NO0042G PCB_60	0.153	0.157	0.285	0.312	0.110	-	1.703	0.475	0.117	0.089	0.108	0.062	
NO0042G PCB_66	0.670	0.655	1.100	1.055	0.330	-	6.537	1.720	0.492	0.393	0.420	0.278	
NO0042G PCB_74	0.420	0.387	0.672	0.615	0.180	-	3.490	1.033	0.315	0.251	0.285	0.184	
NO0042G PCB_99	0.278	0.285	0.545	0.700	0.200	-	2.450	0.827	0.238	0.224	0.182	0.188	
NO0042G acenaphtene	0.082	0.007	0.010	0.005	0.007	0.006	0.017	-	0.020	0.007	0.005	0.296	
NO0042G acenaphtylene	0.024	0.006	0.008	0.005	0.006	0.003	0.001	-	0.001	0.002	0.002	0.008	
NO0042G alpha_HCH	42.914	37.975	38.825	27.170	4.980	-	53.000	37.975	45.923	39.847	35.150	28.580	
NO0042G anthanthrene	0.006	0.005	0.005	0.006	0.014	0.004	0.000	-	0.000	0.000	0.000	0.003	
NO0042G anthracene	0.019	0.007	0.005	0.005	0.005	0.010	0.001	-	0.007	0.007	0.001	0.006	
NO0042G benz_a_anthracene	0.040	0.007	0.008	0.005	0.012	0.004	0.001	-	0.001	0.002	0.001	0.011	
NO0042G benzo_a_fluoranthene	0.008	0.005	0.006	0.004	0.015	0.084	0.003	-	0.002	0.000	0.000	0.003	
NO0042G benzo_a_fluorene	0.031	0.008	0.008	0.005	0.005	0.003	0.002	-	0.001	0.003	0.002	0.012	

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	QA
NO0042G	benzo_a_pyrene	0.041	0.008	0.009	0.005	0.004	0.007	0.022	-	0.004	0.004	0.000	0.015	
NO0042G	benzo_b_fluorene	0.015	0.006	0.006	0.005	0.004	0.003	0.000	-	0.000	0.001	0.001	0.006	
NO0042G	benzo_bjk_fluoranthenes	0.207	0.052	0.042	0.005	0.004	0.033	0.004	-	0.002	0.007	0.000	0.063	
NO0042G	benzo_e_pyrene	0.056	0.015	0.014	0.005	0.004	0.013	0.004	-	0.004	0.004	0.000	0.021	
NO0042G	benzo_ghi_fluoranthene	0.046	0.011	0.015	0.004	0.018	0.014	0.002	-	0.002	0.005	0.002	0.013	
NO0042G	benzo_ghi_perylene	0.048	0.011	0.011	0.004	0.007	0.012	0.001	-	0.014	0.006	0.011	0.035	
NO0042G	biphenyl	4.706	1.245	1.940	0.215	0.267	0.178	0.699	-	1.006	1.320	0.994	1.488	
NO0042G	chrysene_triphenylene	0.098	0.024	0.022	0.004	0.008	0.004	0.002	-	0.001	0.015	0.006	0.047	
NO0042G	cis_cd	0.410	0.580	0.765	0.820	0.090	-	1.697	0.933	0.717	0.666	0.637	0.846	
NO0042G	cis_no	0.031	0.023	0.038	0.075	0.010	-	0.193	0.145	0.108	0.117	0.052	0.070	
NO0042G	coronene	0.014	0.005	0.006	0.006	0.012	0.004	0.001	-	0.001	0.001	0.008	0.008	
NO0042G	cyklopenta_cd_pyrene	0.019	0.005	0.006	0.006	0.017	0.005	0.000	-	0.000	0.001	0.005	0.007	
NO0042G	dibenz(ae)pyrene	0.009	0.005	0.007	0.009	0.023	0.005	0.001	-	0.001	0.002	0.001	0.001	
NO0042G	dibenz(ah)pyrene	0.010	0.006	0.008	0.010	0.028	0.006	0.001	-	0.001	0.001	0.001	0.001	
NO0042G	dibenz(ai)pyrene	0.011	0.006	0.009	0.011	0.031	0.006	0.001	-	0.001	0.001	0.001	0.002	
NO0042G	dibenzo_ac_ah_anthracenes	0.006	0.005	0.005	0.006	0.012	0.004	0.000	-	0.000	0.000	0.000	0.003	
NO0042G	dibenzofuran	3.932	1.887	2.423	0.417	0.128	0.106	0.266	-	0.620	1.571	1.231	2.042	
NO0042G	dibenzothiophene	0.116	0.034	0.030	0.016	0.008	0.017	0.018	-	0.012	0.021	0.019	0.053	
NO0042G	fluoranthene	0.346	0.081	0.076	0.008	0.009	0.011	0.017	-	0.008	0.036	0.020	0.104	
NO0042G	fluorene	1.781	0.575	0.640	0.052	0.044	0.052	0.117	-	0.125	0.368	0.307	0.712	
NO0042G	gamma_HCH	8.241	7.112	11.410	11.670	2.220	-	17.800	9.797	7.658	10.163	9.602	5.842	
NO0042G	inden_123cd_pyrene	0.051	0.011	0.012	0.005	0.012	0.004	0.000	-	0.000	0.001	0.002	0.019	
NO0042G	n1_methylnaphtalene	2.698	0.300	0.350	0.091	0.452	0.224	0.629	-	0.779	0.673	0.320	0.601	
NO0042G	n2_methylnaphtalene	3.554	0.352	0.477	0.167	0.754	0.358	0.944	-	1.184	1.034	0.472	0.804	
NO0042G	naphtalene	9.040	2.423	3.705	2.242	0.865	0.318	0.402	-	0.554	0.908	0.957	2.138	
NO0042G	op_DDD	0.037	0.035	0.043	0.080	0.020	-	0.123	0.210	0.039	0.052	0.035	0.030	
NO0042G	op_DDE	0.217	0.255	0.295	0.205	0.040	-	0.230	0.187	0.065	0.146	0.160	0.204	
NO0042G	op_DDT	0.551	0.460	0.520	0.527	0.110	-	1.110	0.762	0.344	0.425	0.268	0.348	
NO0042G	perylene	0.007	0.005	0.005	0.011	0.004	0.012	0.185	-	0.003	0.223	0.002	0.004	
NO0042G	phenanthrene	0.587	0.147	0.175	0.040	0.082	0.092	0.177	-	0.095	0.259	0.061	0.177	
NO0042G	pp_DDD	0.053	0.035	0.047	0.093	0.020	-	0.047	0.190	0.047	0.049	0.035	0.034	
NO0042G	pp_DDE	1.679	1.155	1.440	0.905	0.210	-	1.737	0.895	0.326	0.765	0.762	0.912	
NO0042G	pp_DDT	0.914	0.285	0.668	0.452	0.130	-	1.303	0.958	0.341	0.317	0.190	0.224	
NO0042G	pyrene	0.218	0.058	0.050	0.006	0.007	0.007	0.010	-	0.006	0.015	0.008	0.060	
NO0042G	rethene	0.006	0.005	0.005	0.005	0.007	0.004	0.001	-	0.000	0.001	0.001	0.001	
NO0042G	trans_cd	0.301	0.407	0.562	0.515	0.040	-	0.790	0.220	0.144	0.202	0.260	0.476	
NO0042G	trans_no	0.304	0.440	0.565	0.618	0.070	-	1.337	0.630	0.483	0.484	0.465	0.624	
NO0099R	HCB	94.880	82.775	87.875	116.800	97.500	90.925	95.325	88.975	89.500	90.120	86.000	90.914	
NO0099R	alpha_HCH	25.400	22.200	29.650	59.100	40.075	36.525	43.025	42.775	49.867	40.440	30.850	20.757	
NO0099R	gamma_HCH	25.100	30.600	110.535	88.900	93.700	52.775	57.225	36.100	87.067	42.500	22.100	23.871	

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
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

Data Report October 1977-September 1978.
EMEP/CCC-Report 3/80 by J. Schaug, H. Dovland, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1980.

Data Report October 1978-September 1979.
EMEP/CCC-Report 4/81 by J.E. Skjelmoen, H. Dovland, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1981.

Data Report October 1979-September 1980.
EMEP/CCC-Report 5/84 by J.E. Skjelmoen, J. Schaug. Lillestrøm, Norwegian Institute for Air Research, 1984.

Data Report October 1980-September 1981.
EMEP/CCC-Report 6/84 by J.E. Skjelmoen, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1984.

Data Report October 1981-September 1982.
EMEP/CCC-Report 2/85 by K. Nodop, J.E. Skjelmoen, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1985.

Data Report October 1982-December 1982.
EMEP/CCC-Report 4/86 by J. Schaug, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1986.

Data Report January 1983-December 1983.
EMEP/CCC-Report 5/86 by J. Schaug, A. Harstad, T. Krognes,
J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1986.

Data Report January 1984-June 1984
EMEP/CCC-Report 1/87 by J. Schaug, J. Pacyna, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1987.

Data Report July 1984-December 1984
EMEP/CCC-Report 2/87 by J. Schaug, J. Pacyna, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1987.

Data Report January 1985-June 1985
EMEP/CCC-Report 5/87 by J. Pacyna, J. Schaug, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1987.

Data Report July 1985-December 1985
EMEP/CCC-Report 6/87 by J. Pacyna, J. Schaug, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1987.

Ozone measurements January-December 1985
EMEP/CCC-Report 3/89 by U. Feister, U. Pedersen.
Potsdam/Lillestrøm, Meteorological Service of the GDR/Norwegian Institute for Air Research, 1989.

European Precipitation Chemistry Atlas.
An Atlas of monthly and seasonal maps of precipitation amount, non-marine sulphate, nitrate, ammonium and hydrogen ion concentrations and depositions based on the EMEP precipitation network: October 1977 to September 1982.
EMEP/CCC-Report 5/88 by R.J. Barthelmie, T.D. Davies, G. Farmer, J. Schaug.
Norwich/Lillestrøm, Climatic Research Unit, University of East Anglia/ Norwegian Institute for Air Research, 1988.

Data Report 1986. Part 1: Annual summaries.
EMEP/CCC-Report 6/88 by J. Schaug, J.E. Skjelmoen, S.E. Walker, A. Harstad, K. Nodop, J. Pacyna
Lillestrøm, Norwegian Institute for Air Research, 1988.

Data Report 1986. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 7/88 by J. Schaug, J.E. Skjelmoen, S.E. Walker, A. Harstad, K. Nodop, J. Pacyna
Lillestrøm, Norwegian Institute for Air Research, 1988.

Ozone measurements January-December 1986.
EMEP/CCC-Report 8/90 by U. Feister, U. Pedersen, E. Schulz, S. Hechler.
Potsdam/Lillestrøm, Meteorological Service of the GDR/Norwegian Institute for Air Research, 1990.

Data Report 1987. Part 1: Annual summaries.
EMEP/CCC-report 1/89 by J. Schaug, J.E. Skjelmoen, S.-E. Walker, U. Pedersen, A. Harstad
Lillestrøm, Norwegian Institute for Air Research, 1989.

Data Report 1987. Part 2: Monthly and seasonal summaries. EMEP/CCC-Report 2/89 by J. Schaug, J.E. Skjelmoen, S.E. Walker, U. Pedersen, A. Harstad
Lillestrøm, Norwegian Institute for Air Research, 1989.

Data Report 1988. Part 1: Annual summaries.
EMEP/CCC-Report 4/90 by U. Pedersen, J. Schaug, J.E. Skjelmoen, J.E. Hanssen.
Lillestrøm, Norwegian Institute for Air Research, 1990.

European Precipitation Chemistry Atlas (Volume 2).
An Atlas of monthly and seasonal maps of precipitation amount, non-marine sulphate, nitrate, ammonium and hydrogen ion concentrations and depositions based on the EMEP precipitation network: October 1982 to December 1985.
EMEP/CCC-Report 6/90 by T.D. Davies, R.J. Barthelmie, M. Varley, S. Dorling, G. Farmer, J. Schaug.
Norwich/Lillestrøm, Climatic Research Unit, University of East Anglia/ Norwegian Institute for Air Research, 1990.

Data Report 1988. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 5/90 by J. Schaug, U. Pedersen, J.E. Skjelmoen, J.E. Hanssen.
Lillestrøm, Norwegian Institute for Air Research, 1990.

Data Report 1989. Part 1: Annual summaries.
EMEP/CCC-Report 2/91 by J. Schaug, U. Pedersen, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1991.

Data Report 1989. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 3/91 by J. Schaug, U. Pedersen, J.E. Skjelmoen. Lillestrøm, Norwegian Institute for Air Research, 1991.

Ozone Data Report 1988.
EMEP/CCC-Report 1/92 by U. Pedersen.
Lillestrøm, Norwegian Institute for Air Research, 1992.

Data Report 1990. Part 1: Annual summaries.
EMEP/CCC-Report 2/92 by U. Pedersen, J. Schaug, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1992.

Data Report 1990. Part 2: Monthly and Seasonal Summaries.
EMEP/CCC-Report 3/92 by J. Schaug, U. Pedersen, J.E. Skjelmoen and I. Kvalvågnes.
Lillestrøm, Norwegian Institute for Air Research, 1992.

European Precipitation Chemistry Atlas (Volume 3). An Atlas of monthly and seasonal maps of precipitation amount, non-sea-salt sulphate, nitrate, ammonium and hydrogen ion concentrations and depositions based on the EMEP precipitation chemistry network: January 1986 to December 1989.
EMEP/CCC-Report 6/92 by T.D. Davies, S. Glynn, R.J. Barthelmie.
Norwich/Lillestrøm, Climate Research Unit, University of East Anglia, Norwegian Institute for Air Research, 1992.

Ozone Data Report 1989.
EMEP/CCC-Report 2/93 by U. Pedersen and I. Kvalvågnes.
Lillestrøm, Norwegian Institute for Air Research, 1993.

Data Report 1991. Part 1: Annual summaries.
EMEP/CCC-Report 4/93 by J. Schaug, U. Pedersen, J.E. Skjelmoen and I. Kvalvågnes.
Lillestrøm, Norwegian Institute for Air Research, 1993.

Data Report 1991. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 5/93 by J. Schaug, U. Pedersen, J.E. Skjelmoen and I. Kvalvågnes.
Lillestrøm, Norwegian Institute for Air Research, 1993.

Data Report 1992. Part 1: Annual summaries.
EMEP/CCC-Report 4/94 by J. Schaug, U. Pedersen, J.E. Skjelmoen, K. Arnesen, A. Bartonova.
Lillestrøm. Norwegian Institute for Air Research, 1992.

Data Report 1992. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 5/94 by J. Schaug, U. Pedersen, J.E. Skjelmoen and K. Arnesen.
Lillestrøm, Norwegian Institute for Air Research, 1993.

VOC measurements August 1992-June 1993.
EMEP/CCC-Report 6/93 by S. Solberg, N. Schmidbauer, C. Dye, U. Pedersen and J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1993.

VOC measurements 1993.
EMEP/CCC-Report 3/94 by S. Solberg, C. Dye and N. Schmidbauer.
Lillestrøm, Norwegian Institute for Air Research, 1994.

Ozone Measurements 1990-1992.
EMEP/CCC-Report 4/95 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1995.

Data Report 1993. Part 1: Annual summaries.
EMEP/CCC-Report 7/95 by A.-G. Hjellbrekke, G. Lövblad, K. Sjöberg, J. Schaug, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1995.

Data Report 1993. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 8/95 by G. Lövblad, A.-G. Hjellbrekke, K. Sjöberg, J. Schaug, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1995.

Ozone Measurements 1993-1994.
EMEP/CCC-Report 1/96 by A.G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1996.

Data Report 1994. Part 1: Annual summaries.
EMEP/CCC-Report 4/96 by A.-G. Hjellbrekke, J. Schaug, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1996.

Data Report 1994. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 5/96 by A.-G. Hjellbrekke, J. Schaug, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1996.

VOC measurements 1994–1995.
EMEP/CCC-Report 6/96 by S. Solberg, C. Dye and N. Schmidbauer.
Lillestrøm, Norwegian Institute for Air Research, 1996.

Heavy metals and POPs within the ECE region.
EMEP/CCC-Report 8/96 by T. Berg, A.-G. Hjellbrekke, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1996.

Ozone Measurements 1995.
EMEP/CCC-Report 3/97 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1997.

Data Report 1995. Part 1: Annual summaries.
EMEP/CCC-Report 4/97 by A.-G. Hjellbrekke, J. Schaug, J.E. Hanssen, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1997.

Data Report 1995. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 5/97 by A.-G. Hjellbrekke, J. Schaug, J.E. Hanssen, J.E. Skjelmoen.
Kjeller, Norwegian Institute for Air Research, 1997.

VOC measurements 1996.
EMEP/CCC-Report 7/97 by S. Solberg, C. Dye and N. Schmidbauer.
Lillestrøm, Norwegian Institute for Air Research, 1997.

Heavy metals and POPs within the ECE region. Additional data.
EMEP/CCC-Report 9/97 by T. Berg, A.-G. Hjellbrekke, N. Ritter.
Kjeller, Norwegian Institute for Air Research, 1996.

Data Report 1996. Part 1: Annual summaries.
EMEP/CCC-Report 1/98 by A.-G. Hjellbrekke and J.E. Hanssen.
Kjeller, Norwegian Institute for Air Research, 1998.

Data Report 1996. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 2/98 by A.-G. Hjellbrekke and J.E. Hanssen.
Kjeller, Norwegian Institute for Air Research, 1998.

Ozone Measurements 1996.
EMEP/CCC-Report 3/98 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1998.

VOC measurements 1997.
EMEP/CCC-Report 4/98 by S. Solberg, C. Dye and N. Schmidbauer.
Kjeller, Norwegian Institute for Air Research, 1998.

Data Report 1997. Part 1: Annual summaries.
EMEP/CCC-Report 3/99 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1999.

Data Report 1997. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 4/99 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1999.

Ozone Measurements 1997.
EMEP/CCC-Report 2/99 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1999.