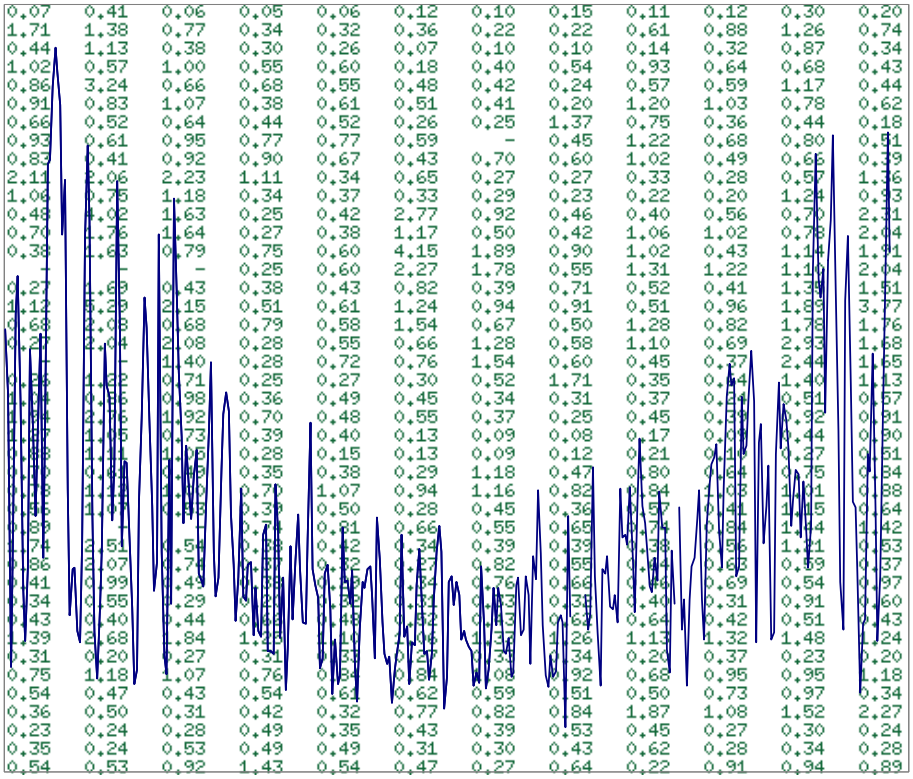
EMEP/CCC-Report 6/2002

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

Data Report 2000

Acidifying and eutrophying compounds
Part 1: Annual summaries

Anne-Gunn Hjellbrekke



Norwegian Institute for Air Research
PO Box 100, NO-2027 Kjeller, Norway
Chemical Co-ordinating Centre of EMEP (CCC)

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1. Introduction

Measurements of air quality in Europe have been carried out under the "Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe" (EMEP) since 1 October 1977. From the start, priority was given to sulphur dioxide and sulphate in air, and pH and sulphate in precipitation, gradually increasing to all main components in precipitation and ozone and nitrogen compounds in air. A few sites also measure VOC, POPs and heavy metals.

The EMEP data from 2000 for acidifying and eutrophying components in air and precipitation have been presented in two reports. Part 1, contained in this volume, gives the annual summaries. Part 2, contained in EMEP/CCC-Report 7/2002, gives the seasonal and monthly summaries of the data from 2000.

In total, precipitation data from 81 stations and air data from 104 stations are presented in this report. The total number of measurement sites in this report is 111.

The air and precipitation samples were analysed at the laboratories in the participating countries and the results have been forwarded to the Chemical Co-ordinating Centre (CCC) at the Norwegian Institute for Air Research (NILU).

2. The measurement network

The locations of the measurement sites, which have delivered data during 2000, are given in Table 1 and Figure 1. In addition to the network presented here, there are additionally sites with other types of measurements.

In some parts of Europe, the site density is low and highly unsatisfactory. There is a need for more sites especially in the Mediterranean region and in the eastern parts of Europe.

There are no data from Valentia Observatory this year due to technical problems at the laboratory. Three Spanish sites have been moved to new locations. NO_2 data from three Belgium sites have also been included in this report, as well as data on base cations from seven Norwegian sites and three Danish sites. Germany has changed to weekly wet-only sampling at all sites except Langenbrügge and Deuselbach, and these data have not been submitted to CCC.

For detailed information on sites and their surroundings please see descriptions at http://www.nilu.no/NILUwebhtmlsider/ilab/EMEP/.

Table 1: List of EMEP monitoring stations in operation in 2000.

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Austria	AT0002R	AT2,A2	Illmitz	47°46'E	16°46'E	117
	AT0004R	AT4,A4	St. Koloman	47°39'N	13°12'E	851
	AT0005R	AT5	Vorhegg	46°40'N	12°58'E	1020
Belgium	BE0001R	B1	Offagne	49°52'N	5°12'E	430
	BE0032R	B32	Eupen	50°37'N	6°00'E	295
	BE0035R	-	Vezin	50°30'N	4°59'E	160
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
	DK0022R	-	Sepstrup Sande	55°05'N	9°36'E	60
Estonia	EE0009R	EE9,SU9	Lahemaa	59°30'N	25°54'E	32
	EE0011R	EE11,SU11	Vilsandi	58°23'N	21°49'E	6
Finland	FI0004R	FI4,SF4	Ähtari	62°33'N	24°13'E	162
	FI0009R	FI9,SF9	Utö	59°47'N	21°23'E	7
	FI0017R	FI17,SF17	Virolahti II	60°31'N	27°41'E	4
	FI0022R	FI22,SF22	Oulanka	66°19'N	29°24'E	310
	FI0037R	-	Ähtari II	62°35'N	24°11'E	180
France	FR0003R	FR3,F3	La Crouzille	45°50'N	1°16'E	497
	FR0005R	FR5,F5	La Hague	49°37'N	1°50'W	133
	FR0008R	FR8,F8	Donon	48°30'N	7°08'E	775
	FR0009R	FR9,F9	Revin	49°54'N	4°38'E	390
	FR0010R	FR10,F10	Morvan	47°16'N	4°05'E	620
	FR0012R	FR12,F12	Iraty	43°02'N	1°05'W	1300
	FR0013R	-	Peyrusse Vielle	47°22'N	0°06'E	236
	FR0014R	-	Montandon	47°11'N	6°30'E	746
Germany	DE0001R	DE1,D1	Westerland	54°55'N	8°18'E	12
	DE0002R	DE2,D2	Langenbrügge	52°48'N	10°45'E	74
	DE0003R	DE3,D3	Schauinsland	47°55'N	7°54'E	1205
	DE0004R	DE4,D4	Deuselbach	49°46'N	7°03'E	480
	DE0005R	DE5,D5	Brotjacklriegel	48°49'N	13°13'E	1016
	DE0007R	DE7,D2	Neuglobsow	53°09'N	13°02'E	62
	DE0008R	DE8,D8	Schmücke	50°39'N	10°46'E	937
	DE0009R	DE9	Zingst	54°26'N	12°44'E	1
Hungary	HU0002R	HU2,H1	K-puszta	46°58'N	19°35'E	125
Iceland	IS0002R	IS2	Irafoss	64°05N	21°01'W	61
Ireland	IE0002R	IE2,IR2	Turlough Hill	53°02N	6°24'W	420
	IE0003R	IE3	The Burren	53°00'N	7°27'W	90
	IE0004R	IE4	Ridge of Capard	53°07'N	7°27'W	340
Italy	IT0001R	IT1,I1	Montelibretti	42°06'N	12°38'E	48
	IT0004R	IT4,I4	Ispra	45°48'N	8°38'E	209
Latvia	LV0010R	LV10,SU10	Rucava	56°13'N	21°13'E	18
	LV0016R	LV16	Zoseni	57°08'N	25°55'E	183
Lithuania	LT0015R	LT15,SU15	Preila	55°21'N	21°04'E	5
Netherlands	NL0009R	NL9	Kollumerwaard	53°20'N	6°17'E	0
	NL0010R	NL10	Vreedepeel	51°32'N	5°51'E	28
Norway	NO0001R	NO1,N1	Birkenes	58°23'N	8°15'E	190
	NO0008R	NO8,N8	Skreådalen	58°49'N	6°43'E	475
	NO0015R	NO15,N15	Tustervatn	65°50'N	13°55'E	439
	NO0039R	NO39,N39	Kårvatn	62°47'N	8°53'E	210
	NO0041R	NO41,N41	Osen	61°15'N	11°47'E	440
	NO0042G	NO42,N42	Spitsbergen, Zeppelinfjell	78°54'N	11°53'E	474

Table 1 cont.:

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Norway	NO0055R	NO55	Karasjok	69°28'N	25°13'E	333
cont.	NO0099R	NO99	Lista	58°06'N	6°34'E	13
Poland	PL0002R	PL2	Jarczew	51°49'N	21°59'E	180
	PL0003R	PL3	Sniezka	50°44'N	15°44'E	1604
	PL0004R	PL4	Leba	54°45'N	17°32'E	2
	PL0005R	PL5	Diabla Gora	54°09'N	22°04'E	157
Portugal	PT0001R	PT1,P1	Braganca	41°49'N	6°46'W	691
	PT0003R	PT3,P3	V. d. Castelo	41°42'N	8°48'W	16
	PT0004R	PT4,P4	Monte Velho	38°05'N	8°48'W	43
Russian	RU0001R	RU1,SU1	Janiskoski	68°56'N	28°51'E	118
Federation	RU0013R	RU13,SU13	Pinega	64°42'N	43°24'E	28
	RU0016R	RU16	Shepeljovo	59°58'N	29°07'E	4
	RU0018R	-	Danki	54°54'N	37°48'E	150
Slovenia	SI0008R	SI8	Iskrba	45°34'N	14°52'E	520
Slovakia	SK0002R	SK2,CS2	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
Spain	ES0001R	ES1,E1	San Pablo	39°33'N	4°21'W	917
	ES0003R	ES3,E3	Roquetas	40°49'N	0°30'W	50
	ES0004R	ES4,E4	Logrono	42°27'N	2°30'W	445
	ES0005R	ES5	Noya	42°44'N	8°55'W	685
	ES0006R	ES6	Mahon	39°52'N	4°19'E	78
	ES0007R	ES7	Viznar	37°14'N	3°32'W	1265
	ES0008R	-	Niembro	43°27'N	4°51'W	134
	ES0009R	-	Campisabolos	41°17'N	3°9'W	1360
	ES0010R	-	Cabo de Creus	42°19'N	3°19'E	23
	ES0011R	-	Barcarrola	38°29'N	6°55'W	393
	ES0012R	-	Zarra	39°5'N	1°6'W	885
	ES0013R	-	Penausende	41°17'N	5°52'W	985
	ES0014R	-	Els Torms	41°24'N	0°43'E	470
	ES0015R	-	Risco Llano	39°31'N	4°21'W	1241
Sweden	SE0002R	SE2,S2	Rörvik	57°25'N	11°56'E	10
	SE0005R	SE5,S5	Bredkälen	63°51'N	15°20'E	404
	SE0008R	SE8,S8	Hoburg	56°55'N	18°09'E	58
	SE0011R	SE11,S11	Vavihill	56°01'N	13°09'E	172
	SE0012R	SE12,S12	Aspvreten	58°48'N	17°23'E	20
Switzerland	CH0001G	CH1	Jungfraujoch	46°33'N	7°59'E	3573
	CH0002R	CH2	Payerne	46°48'N	6°57'E	510
	CH0003R	CH3,CH32	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	GB0002R	GB2,UK2	Eskdalemuir	55°19'N	3°12'W	243
Kingdom	GB0004R	GB4UK4	Stoke Ferry	52°34'N	0°30'E	15
	GB0006R	GB6,UK6	Lough Navar	54°26'N	7°54'W	126
	GB0007R	GB7,UK7	Barcombe Mills	50°52'N	0°02'W	8
	GB0013R	GB13,UK13	Yarner Wood	50°36'N	3°43'W	119
	GB0014R	GB14,UK14	High Muffles	54°20'N	0°48'W	267
	GB0015R	GB15,UK15	Strath Vaich Dam	57°44'N	4°46'W	270
	GB0016R	GB16,UK16	Glen Dye	56°58'N	2°25'W	85
	GB0036R	GB36	Harwell	51°34'N	1°18'W	137
	GB0037R	GB37	Ladybower	53°23'N	1°45'W	420
	GB0038R	GB38	Lullington Heath	50°47'N	0°10'W	120

Table 1 cont.:

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
United Kingdom	GB0043R	GB43	Narberth	51°14'N	4°42'W	160
cont.	GB0045R	GB45	Wicken Fen	52°18'N	0°18'W	5
Yugoslavia	YU0005R	YU5	Kamenicki vis	43°24'N	21°57'E	813
	YU0008R	YU8	Zabljak	43°09'N	19°08'E	1450

3. Site codes

The site codes used in this report are the codes used for data submission and storage in the EMEP database. 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). The station numbers have been retained from previous codes used.

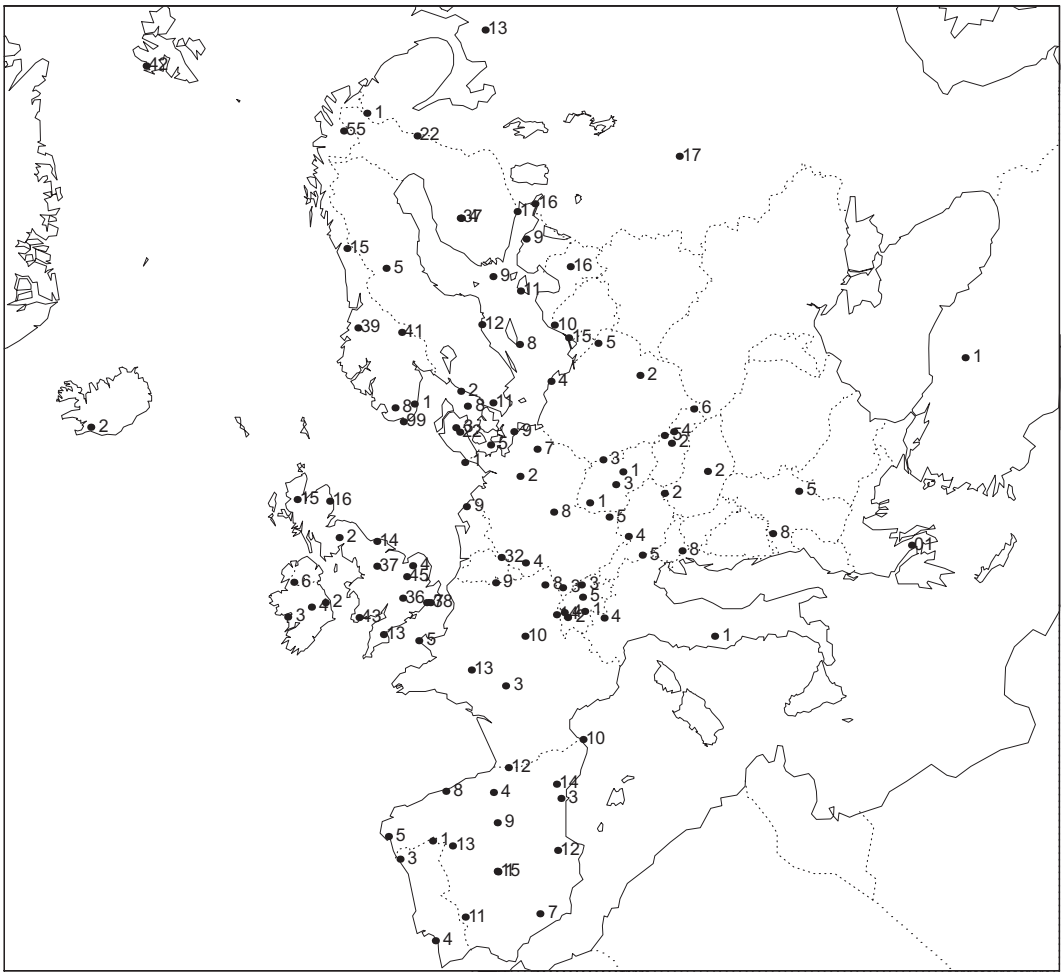

Figure 1: Location of the EMEP monitoring stations in operation in 2000. Sites with ozone/VOC measurements only are not included.

4. The measurement programme during 2000

EMEP's measurement programme during 2000 is presented in Table 2. Many sites had, however, even during 2000, a less extensive measurement programme, as can be seen from the data tables in this report. Most sites measure air as well as precipitation components. However, some sites perform either the one or the other type of measurements.

Table 2: EMEP's measurement programme 2000.

	Components	Measurement period	Measurement frequency
Gas	SO_2, NO_2	24 hours	daily
	O_3	hourly means stored	continuously
	Light hydrocarbons C_2-C_7	10-15 mins	twice weekly
	Ketones and aldehydes (VOC)	8 hours	twice weekly
	Hg	24 hours	weekly
Particles	SO_4^{2-}	24 hours	daily
	Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
Gas + particles	$HNO_3(g)+NO_3^-(p)$, $NH_3(g)+NH_4^-(p)$	24 hours	daily
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	to be decided	to be decided
Precipitation	Amount, SO_4^{2-}, NO_3^-, Cl^-, pH, NH_4^+, Na^+, Mg^{2+}, Ca^{2+}, K^+, conductivity	24 hours/weekly	daily/weekly
	Hg, Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	to be decided	to be decided

Measurements of VOC, heavy metals and POPs are made at a small number of sites only.

An evaluation of the VOC measurement programme within EMEP has been published earlier (Solberg et al., 1995). The VOC data from 2000 was reported separately by Solberg et al. (2002), while ozone data from 2000 was reported by Hjellbrekke and Solberg (2002). Heavy metals and POPs were reported by Berg and Hjellbrekke (2002).

A list of data reports from EMEP/CCC can be found in Annex 5. The most resent data reports are also available on the web in pdf, word and text format at http://www.nilu.no/projects/ccc/reports.html.

5. Sampling and analytical methods

The recommended procedures for sampling and analysis of precipitation and air are described in the EMEP Manual for sampling and chemical analysis. The manual has been updated and sent out in 1996 (Hanssen et al., 1995). A version is also available on the web at http://www.nilu.no/projects/ccc/manual/. The methods used by the participating countries are given in Annex 1.

Generally, concentrations of gaseous nitric acid and ammonia, and of nitrate and ammonium in aerosol particles are determined by filter pack sampling. However, sampling artefacts due to the volatile nature of ammonium nitrate, and the possible interaction with strong acids, e.g. sulphuric acid, make separation of gases and particles by simple aerosol filters unreliable. Therefore only the sums of nitric acid and nitrate, and of ammonium and ammonia are unbiased.

6. Laboratory intercomparison

During 2000 the 18th laboratory intercomparison of analytical methods was carried out. As usual most of the laboratories report acceptable data, but there are still some outliers. The intercomparison results are presented in Uggerud et al. (2001).

7. Calculation of excess sulphate in precipitation

The sulphate in precipitation is stored in the database as reported, i.e. total sulphate, and as corrected, non-marine sulphate, i.e. total sulphate minus sulphate originating from sea-salt particles.

When the sulphate concentrations originating from sea-salt are larger than the total sulphate, and the corrected sulphate concentrations consequently become less than zero, negative concentrations have been stored in the database and have been used to calculate averages in the report in order to avoid bias in the aggregates. Negative concentrations are mainly caused by random errors in the data and occur when non sea-salt sulphate concentrations are low compared to total sulphate.

CCC has since 1994 used a routine worked out by the Canadian Air and Precipitation Monitoring Network (CAPMoN) for calculation of the marine contribution to sulphate in precipitation. The routine has been adopted by the WMO GAW. A series of EMEP's sites will also report data to WMO, and common routines will necessarily fill the data bases with identical data. This is consequently a step in a harmonisation process between EMEP and WMO GAW.

Excess sulphate data as calculated with the old routine are available from the CCC as a continuation of the data series upon request.

8. Annual summaries of the data

8.1 Maps over Europe

Geographical distributions based on annual means of SO_2, NO_2 and SO_4^{--} in air and pH, NH_4^+, NO_3^- and excess SO_4^{--} in precipitation of are shown in Annex 4.

8.2 Annual summaries in tables

Annual summaries of the precipitation data are given in Annex 2 and of the air data in Annex 3. The precipitation component summaries contain:

- the precipitation weighted arithmetic mean value,
- the minimum and maximum daily concentrations,
- the wet deposition,
- percent of total precipitation amount analysed for a specific component (completeness for precipitation data),
- the number of data below the detection limit,
- a sampling flag which gives information about deviations from the EMEP sampling procedures.

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

Concentrations less than zero may exist in the database for sulphate in precipitation corrected for sea-salt. This occurs whenever the sea-salt contribution is larger than the total sulphate concentration, and it is caused by random errors in the results. The negative values have been included in the estimation of the weighted arithmetic mean values.

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. If the data come from a random sample of independent data in a normal distribution, about 95% of the data will lie between

$$\overline{c_a} - 2sd_a \; and \; \overline{c_a} + 2sd_a$$

and between

$$\frac{\overline{c_g}}{sd_g^2} \; and \; \overline{c_g} \cdot sd_g^2$$

if the data come from a lognormal distribution. The minimum, maximum, 5 and 95 percentiles are also presented in Annex 3. As a measure of the completeness of the dataset, the percentage 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:

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

$$sd_g = exp\left(sdlnc\right)$$

Min — is the minimum value reported for a specific component, and it is printed both for precipitation and air components.

5% — is the 5 percentile computed from the histogram of the daily results. The data have been divided into 30 classes of equal size with the addition of two extreme classes. The 5 percentile has been computed by linear interpolation of the two closest class marks. The percentile has been computed for air components only.

50% — is the 50 percentile, defined as above and computed for air data only.

95% — is the 95 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.

% anal — for precipitation components this is the percent of the total precipitation reported analysed for a specific component, and for air components based on the number of days with data.

Num bel — is the number of data below the detection limit (not used for precipitation amount).

Num day — is the number of days with measurements for a specific component.

Samp flag — is a one-character code which gives information about routine-wise deviation from the EMEP sampling length and frequency. The code used in this report is:

W: weekly sampling
BW: bi-weekly sampling

The units used for the results in this report are given in Table 3 and Table 4.

The start hours for the sample collections for the period covered by this report are given in Table 5.

Table 3: Units used for precipitation components.

Precipitation components	Units for W. mean, Min., Max.	Units for depositions
Amount	mm	mm
SO_4^{--}	mg S/l	mg S/m^2
NO_3^-	mg N/l	mg N/m^2
Cl^-	mg Cl/l	mg Cl/m^2
NH_4^+	mg N/l	mg N/m^2
H^+	µe H^+/l	µe H^+/m^2
pH	pH-units	µe H^+/m^2
Na^+	mg Na/l	mg Na/m^2
Mg^{2+}	mg Mg/l	mg Mg/m^2
K^+	mg K/l	mg K/m^2
Ca^{2+}	mg Ca/l	mg Ca/m^2

Table 4: Units used for air components.

Air components	Units for arithmetic and geometric mean values, arithmetic standard deviations, Min., Max, percentiles.
SO_2	µg S/m^3
NO_2	µg N/m^3
HNO_3	µg N/m^3
NH_3	µg N/m^3
SO_4^{2-}	µg S/m^3
NO_3^-	µg N/m^3
NH_4^+	µg N/m^3
H^+	Ne H^+/m^3
SPM	µg/m^3
$HNO_3 + NO_3^-$	µg N/m^3
$NH_3 + NH_4^+$	µg N/m^3
Ca^{++}	µg/m^3
Cl^-	µg/m^3
Mg^{++}	µg/m^3
K^+	µg/m^3
Na^+	µg/m^3

Table 5: Start hours for sampling (GMT) in 2000.

Site	Prec.	Air	Site	Prec.	Air
AT 2	07	23	GR1	-	00
AT 4	07	23			
AT5	07	23	HR 2	06	06
			HR 4	06	06
CH 1	-	08			
		no2 – 00			
CH 2	00	00	HU 2	07	07
CH 3	-	00			
CH 4	00	00	IE 1	10	10
CH 5	00	000	IE 2	00	00
CZ 1	06	06	IS 2	09	09
CZ 3	06	06			
			IT 1	09	00
DE 1	07	00	IT 4	10	10
DE 2	07	00			
DE 3	07	00	LT15	06	06
DE 4	07	00			
DE 5	07	00	LV10	08	08
DE 7	07	00	LV16	08	08
DE 8	07	00			
DE 9	07	00	NL 9	09	09
DE12	-	00	NL10	09	09
DE14	-	00	NL11	10	10
DE17	-	00			
DE18	-	00	NO 1	07	07
DE19	-	00	NO 8	07	07
			NO15	07	07
DK 3	07	07	NO30	07	07
DK 5	07	07	NO39	07	07
DK 8	07	07	NO41	07	07
			NO42	-	07
ES 1	07	07			
ES 2	07	07	PL 2	06	06
ES 3	07	07	PL 3	06	06
ES 4	07	07	PL 4	06	06
ES 5	07	07	PL 5	06	06
ES 6	07	07			
			PT 1	09	-
EE 09	06	06	PT 3	09	-
EE 11	06	00	PT 4	09	09
FI 4	06	06	RU 1	(1)	(1)
FI 9	06	06	RU13	(1)	(1)
FI17	06	06	RU14	(1)	(1)
FI22	06	06	RU16	(1)	(1)
FR 3	09	09	SE 2	06	06
FR 5	09	09	SE 5	06	06
FR 8	09	09	SE 8	-	06
FR 9	09	09	SE11	06	06
FR10	09	09	SE12	06	06
FR12	09	09	SE13	-	06
FR13	09	09			
FR14	09	09	SI8	08:30	08:30
FR12	09	09			
			SK 2	07	07
GB 2	07	07	SK 4	07	07
GB 4	-	07	SK 5	07	07
GB 6	07	07	SK 6	07	07
GB 7	-	07			
GB13	07	07	TR 1	00	00
GB14	07	07			
GB15	07	70	YU 5	06	06
GB16	-	07	YU 8	06	06

(1) : Not reported

9. 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 users make certain that they have access to the most recent version of the database. For the data presented here the latest alteration was 17 June, 2002.

Scientific use of the EMEP data should be based on fresh copies of the data. Copies can be requested from the CCC (e-mail: anne-gunn.hjellbrekke@nilu.no). Information about the EMEP network and measurement data can also be found at http://www.emep.int and http://www.nilu.no/projects/ccc/index.html

10. References

Aas, W., Hjellbrekke, A.-G., Manø, S., Schaug, J., Solberg, S. and Uggerud, H.T. (2002) Data quality 2000, quality assurance and field comparisons. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 3/2002).

Berg, T., Hjellbrekke, A.-G. and Larsen, R. (2002) Heavy metals and POPs within the ECE region 2000. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 9/2002).

Hanssen, J.E., Schaug, J. and Semb, A. (1995) EMEP manual for sampling and chemical analysis. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 1/95).

Hjellbrekke, A.-G. and Solberg, S. (2002) Ozone measurements 2000. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 5/2002).

Solberg, S., Dye, C., Schmidbauer, N. and Simpson, D. (1995) Evaluation of the VOC measurement programme within EMEP. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 5/95).

Solberg, S., Dye, C., Schmidbauer, N., Wallasch, M. and Junek, R. (2002) VOC measurements 2000. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 8/2002).

Uggerud, H., Hanssen, J.E. and Skjelmoen, J.E. (2001) The eigthteenth intercomparison of analytical methods within EMEP. Kjeller, Norwegian Institute for Air Research (EMEP/CCC-Report 11/2001).

11. Acknowledgements

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Closer at home, and of equal significance to the presentation of our work, the secretarial work, and far beyond, has been performed by Ms. Kristine Aasarød. Rita Larsen has been very helpful with data flow and data base maintenance.

12. List of participating institutions

Austria	Umweltbundesamt
Belgium	CELINE - IRCEL
Commission of the European Communities	Joint Research Center. Ispra Establishment
Croatia	Meteorological and Hydrological Service of Croatia
Czech Republic	Czech Hydrometeorological Institute
Denmark	National Environmental Research Institute
Finland	Finnish Meteorological Institute
France	l' Ecole des Mines de Douai Laboratories Wolff
Germany	Umweltbundesamt
Greece	Ministry of Environmental Physical Planning and Public Works
Hungary	Institute for Atmospheric Physics, Dep. for Air Chemistry
Iceland	The Icelandic Meteorological Office
Ireland	Meteorological Service H.Q. Electricity Supply Board (ESB)
Italy	C.N.R. Istituto Inquinamento Atmosferico
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)
Poland	Institute of Meteorology and Water Management Institute of Environmental Protection
Portugal	Ministério do ambiente e recursos naturais
Russian Federation	Institute of Global Climate and Ecology
Slovakia	Slovak Hydrometeorological Institute
Slovenia	Hydrometeorological Institute of Slovenia
Spain	Dirección General de Calidad y Evaluacíon Ambiental
Sweden	Swedish Environmental Research Institute (IVL)
Switzerland	Swiss Federal Laboratory of Testing Materials and Research (EMPA)
Turkey	Refik Saydam Centre of Hygiene
United Kingdom	AEA Technology
Yugoslavia	Federal Hydrometeorological Institute

Annex 1

Overview of sampling and analytical methods 2000

This Annex gives an overview of the sampling and analytical methods in use in the participating countries during 2000. The information given is mostly based on answered questionnaires issued by the CCC.

Table 1.1 shows the sampling techniques used for precipitation and aerosol components in the different countries. Table 1.2 shows the corresponding information for gases and Table 1.3 information on sampling for the sum of aerosols and gases.

Table 1.4 shows the analytical methods used for components in aerosols, for gases and for the sum of aerosols and gases. Several combinations of reagents can be used in the Griess method for measurements of nitrogen dioxide and in the data reports different combinations have been given different names, e.g. NEDA and ANSA in the past. Due to the increasing number of different reagent combinations, no distinction was made in 2000 between the different procedures, which have all been referenced to as Griess method in Tables 1.4 and 1.7.

Table 1.5 shows the methods used for components in precipitation.

Tables 1.6 to 1.15 give the code numbers for the methods used in Tables 1.4 and 1.5.

Table 1.1: Techniques for sampling of precipitation and for aerosols in 2000.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Austria	Wet only	Teflon filters, PALL Gelman Zeflour 2µm, 47 mm diameter, 21,6 m³/day	Teflon filters, PALL Gelman Zeflour 2µm, 47 mm diameter, 21,6 m³/day	Teflon filters, PALL Gelman Zeflour 2µm, 47 mm diameter, 21,6 m³/day
Croatia	Bulk	-	-	-
Czech Republic	Bulk and wet-only	Teflon filter Gelman, pore size 1 µm 40 m3/day	Schleicher and Schüll TE36 0.45 µm 5 m3/day	As for ammonium
Denmark	Wet-only	Mixed cellulose ester filter Millipore RAWP 1.2 µm 58 m3/day	-	-
Estonia	Bulk	Whatman 40 filter 4-5 m3/day at Lahemaa	-	-
Finland	Bulk	Whatman 40 filter 24 m3/day	-	-
France	Wet-only	Whatman 40 filter 2.5 m3/day	-	-

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Germany	Bulk	Schleicher & Shüll 589/2L filter 1.0 m^3/day	-	-
Greece	Wet only	Whatman 41 filter 1,1 m^3/day	-	As for particulate sulphate
Hungary	Wet only	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	As for particulate sulphate	As for particulate sulphate
Iceland	Bulk	Whatman 40 filter 30 m^3/day	-	-
Ireland	Bulk (IE1) Wet only (IE2, IE3, IE4)	Whatman 40 filter 20-25 m^3/day (IE1) Gelman GN-6 Metricel filter 20 m^3/day (IE2, IE3, IE4)	-	-
Italy	Wet only	Teflon filter Gelman Zeflour 1 μ. 17 m^3/day	Teflon filter (as for sulphate) + phosphorous acid impregnated filter	As for sulphate + Nylasorb filter
Latvia	Bulk (LV16) Wet only (LV10 from July 1996)	Whatman 41 filter 14-20 m^3/day	Whatman 41 filter 14-20 m^3/day	As for particulate sulphate
Lithuania	Wet only	Whatman 40 filter, 24 m^3/day	As for particulate sulphate	As for particulate sulphate
Netherlands	Wet only	Whatman 42 filter 2.5 m^3/day Filter mounted behind denuder	As for particulate sulphate	As for particulate sulphate.
Norway	Bulk NILU-type	Teflon filter, Gelman Zefluor 2 μm 25 m^3/day	-	-
Poland 2,3,4	Bulk	Whatman 40 filter PL2,3,4:3.5-4 m^3/day	As for particulate sulphate	As for particulate sulphate
PL5	Bulk	PL 5: Teflon filter Gelman Zefluor 2 um 16 m^3/day		
Portugal	Bulk	Whatman 40 filter , 2.5-4.2 m^3/day	-	-
Russian Fed.	Bulk	Whatman 40 filter 10-15 m^3/day	As for particulate sulphate	As for particulate sulphate
Slovakia	Wet only SK2 - bulk	Whatman 40 filter 6-8 m^3/day	-	Whatman 40 filter 6-8 m^3/day

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Slovenia	-	Teflon filter, Gelman Zefluor 2 μm, 18-24 m^3/day	See sum of gases and aerosoles	See sum of gases and aerosoles
Spain	Wet only	Whatman GF/A filter 770 m^3/day	As for particulate sulphate	-
Sweden	Wet only	Teflon filter Gelman Zefluor 2 μm 20 m^3/day	-	-
Switzerland	Wet only	Schleicher & Schüll filter 589/4, 3.6 m^3/day (CH2,5), 4.1 m^3/day (CH1)	-	-
Turkey	Wet only	Teflon filter, Gelman Zefluor 2 μm 27 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Wet only collector	Whatman 41 filter 1.1 m^3/day	-	
Yugoslavia	Bulk	-	-	-
CEC (IT 4)	Wet only	Cellulose acetate 0.8 μm filter 12 m^3 day	As for particulate sulphate	As for particulate sulphate

Table 1.2: Techniques for sampling of gases in 2000.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Austria	Instrumental - UV fluorescence	Instrumental - Chemiluminiscence	-	-
Croatia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution Trietanolamin 1.6-2.5 m^3/day	-	-
Czech Republic	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Absorbing solution NaOH and guajacol 0.72 m^3/day	Oxalic acid imp. Whatman 41 filter 5 m^3/day	NaCl-impregnated Whatman 41 filter 0.72 m^3/day
Denmark	NaF-impregnated + KOH-impregnated Whatman 41 filters 58 m^3/day	KI-method (glass sinter) 0,7 m^3/day	-	-
Estonia	NaOH-impregnated Whatman 40 filter 4-5 m^3/day at Lahemaa Instrumental UV-fluorescense at Vilsandi	Absorbing tubes KI solution, 0.3 m^3/day at Lahemaa; Instrumental: chemiluminescence at Vilsandi	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Finland	NaOH-impregnated Whatman 40 filter 24 m^3/day	Instrumental: chemiluminescence	-	-
France	Absorbing solution H_2O_2, 2.5 m^3/day	-	-	-
Germany	Absorbing solution TCM, 1.0 m^3/day	Absorbing solution Saltzman, 1 m^3/day		
Greece	Absorbing solution H_2O_2, 1.1 m^3/day	Absorbing solution TGS, 1.1 m^3/day	-	-
Hungary	KOH-impregnated Whatman 40 filter, 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	Oxalic acid coated diffusion tube, 4 m^3/day until June 30, 1999. From July 1, 1999 alkaline impregnated Whatman 40 filter, 25 m^3/day	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day
Iceland	KOH-impregnated Whatman 40 filter 30 m^3/day	-	-	-
Ireland	KOH-impregnated Whatman 40 filter 20-25 m^3/day	Absorbing solution TGS 1.5-1.6 m^3/day	-	-
Italy	Diffusion tubes NaCl and Na_2CO_3 + glycerine 17 m^3/day	Instrumental: Chemiluminescence	Diffusion tubes coated with phosphorous acid 17 m^3/day	Diffusion tubes NaCl 17 m^3/day
Latvia	KOH-impregnated Whatman 41 filter 14-20 m^3/day	Absorbing KI solution in absorbing tubes with glass granules, 0.2-0.4 m^3/day	Whatman 41 filter 14-20 m^3/day	As for sulphur dioxide
Lithuania	KOH-impregnated Whatman 40 filter, 24 m^3/day	KI-method (glass sinter) 0.4-0.7 m^3/day	-	-
Netherlands	Instrumental: UV-fluorescence	Instrumental: Chemiluminescence	Absorption in $NaHSO_4$, membrane separation, conductivity measurement	-
Norway	KOH-impregnated Whatman 40 filter 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Poland 2,3,4	KOH-impregnated Whatman 40 filter 3.5-4 m^3/day	Absorbing solution TGS 0.7 m^3/day	-	-
Poland 5	KOH-impregnated Whatman 40 filter 16 m3/day	Iodie method (impregnated glass sitner) 0.7 m3/day	-	-
Portugal	Absorbing Solutions H_2O_2 2.5-4.2 m^3/day. Instrumental: UV-fluorescence at PT4 only	Instrumental: Chemiluminescence at PT4 only		
Russian Federation	NaOH-impregnated Whatman 40 filter 10-15 m^3/day	Absorbing tubes KI 0.3 m^3/day		
Slovakia	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Absorbing solution NaOH and guajacol 0.5 m^3/day	-	KOH-impregnated Whatman 41 filter 6-8 m^3/day
Slovenia	KOH-impregnated Whatman 40 filter, 18-24 m3/day	-	See sum of gases and aerosols	See sum of gases and aerosols
Spain	Instrumental: UV-fluorescence	Instrumental: Chemiluminescence	-	-
Sweden	KOH-impregnated Whatman 40 filter 20 m^3/day	NaI-impregnated glass sinters ~0.7 m^3/day	-	-
Switzerland	CH1: Absorbing solution H_2O_2 4.1 m^3/day CH2,3,4,5: Instrumental UV-fluorescence	Instrumental: Chemiluminescence; Cranox at CH1	-	-
Turkey	KOH-impregnated Whatman 40 filter, 27 m^3/day	NaI-impregnated glass sinters, 0.72 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Absorbing solution H_2O_2 1.1m^3/day		-	-
Yugoslavia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution TGS, 1.6-2.5 m^3/day	-	-
CEC (I4)	Instrumental UV-fluorescence	Instrumental: Chemiluminescence	-	-

Table 1.3: Techniques for sampling of sums of gases and aerosols in 2000.

	Ammonia and ammonium	Nitric acid and nitrate
Austria (filterpack)	aerosol as for sulphate, citric acid impregnated Whatman Filters 40 filters, 21,6 m³/day	aerosol as for sulphate, KOH impregnated Whatman 40 filters, 21,6 m3/day
Denmark	Aerosol filter as for sulphate + Oxalic acid impregnated Whatman 41, 58 m^3/day	Aerosol filter as for sulphate + NaF-impregnated Whatman 41, 58 m^3/day
Finland	Oxalic acid impregnated Whatman 40 filter, 24 m^3/day	Whatman 40 + NaOH impregnated Whatman 40 filter, 24 m^3/day
Hungary	Teflon filter as for sulphate + alkaline impregnated Whatman 40 filter, 25 m^3/day	Teflon filter as for sulphate + KOH-impregnated Whatman 40 filter, 25 m^3/day
Latvia	Oxalic acid impregnated Whatman 41 filter, 14-20 m^3/day	KOH impregnated Whatman 41 filter, 14-20 m^3/day
Lithuania	Oxalic acid impregnated Whatman 40 filter, 16-17 m^3/day	KOH impregnated Whatman 40 filter, 16-17 m^3/day
Norway	Aerosol filter as for sulphate + Oxalic acid imp. filter, 25 m^3/day	Aerosol filter as for sulphate + KOH-imp. filter as for sulphur dioxide, 25 m^3/day
Poland 2,3,4	Oxalic acid impregnated Whatman 40 filter, 4 m^3/day	PL2,3,4: NaF impregnated Whatman 40 filter, 4 m^3/day
Poland 5	Aerosol Teflon filter (as for sulphate) + Oxalic acid impregnated Whatman 40 filter, 16 m^3/day	Aerosol Teflon filter (as for sulphate) +NaOH impregnated Whatman 40 filter, 16 m^3/day
Russian Federation	Oxalic acid impregnated Whatman 40 filter 10-15 m^3/day	-
Slovenia	Aerosol filter as for sulphate + oxalic acid impregnated Whatman 40 filter, 18-24 m^3/day	Aerosol filter as for sulphate + KOH impregnated Whatman 40 filter, 18-24 m^3/day
Spain	Oxalic acid impregnated Whatman 40 filter, 35 m^3/day	NaOH impregnated Whatman 40 filter, 35 m^3/day
Sweden	Aerosol filter as for sulphate + Oxalic acid impregnated Whatman 40 filter, 20 m^3/day	Aerosol filter as for sulphate + KOH impregnated Whatman 40 filter, 20 m^3/day
Switzerland	Citric acid impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day	NaOH impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day
Turkey	Citric acid impregnated Whatman 40 filter Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day	KOH impregnated Whatman 40 filter Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day
United Kingdom	Citric acid impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14	NaOH impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14

Table 1.4: Analytical methods used by the participants for components in aerosols, for gases, and for the sum of aerosol components and gases in 2000. Method numbers are given in Tables 1.6–1.9.

	SO_4	NH_3/NH_4	HNO_3/NO_3	SO_2	NO_2
Austria	1	1	1	9	4
Belgium	2	-	-	7	4
Croatia	-	-	-	6	3
Czech Republic	2	3	4	3	3
Denmark	10	3	4	1	3
Estonia	1	-	-	1 & 9	3 & 4
Finland	1	1	1	1	4
France	1	-	-	1	-
Germany	2	4	1	6	2
Greece	1	-	-	1	3
Hungary	1	3	1	1	3
Iceland	13	-	-	1	-
Ireland	1	-	-	1	3
Italy	1	1	1	1	4
Latvia	3	3	2	3	3
Lithuania	1	3	1	1	3
Netherlands	1	3	1	9	4
Norway	1	3/1	1	1	3
Poland 2,3,4	3	2	4	3	3
Poland 5	14	3	5	14	3
Portugal	1	-	-	1	-
Russian Fed.	1	1	1	1/9*	3
Slovakia	14	-	1/5	1	3
Slovenia	1	1	1	1	
Spain	1	3	1	3	3
Sweden	1	4	1	1	3
Switzerland	2	1	1	1/9**	4
Turkey	1	3	1	1	3
United Kingdom	1	1	1	1	1
Yugoslavia	-	-	-	6	3
CEC (I4)	1	1	1	9	4

* 9 at RU1
** 1 at CH1
9 at CH2, CH3, CH4, CH5

Table 1.5: Analytical methods used by the participants for components in precipitation in 2000. Methods numbers are given in Tables 1.10–1.16.

	SO_4	NO_3	NH_4	H^+	Mg	Na	Cl	Ca	K
Austria	1	1	1	-	1	1	1	1	1
Belgium	1	1	1	-	3	1	1	3	1
Croatia	4	4	7	6	2	5	2	2	5
Czech Republic	1	1	4/6	6	6	4	1	6	4
Denmark	1	1	5	6	2	2	1	2	2
Estonia	1	1	5	-	2	3	1	3	3
Finland	1	1	1	6	1	1	1	1	1
France	1	1	4	6	1	1	1	1	1
Germany	1	1	4	-	3	6	1	3	6
Greece	1	1	1	6	1	1	1	1	1
Hungary	1	1	5	3	2	5	1	2	5
Iceland	1	-	-	-	-	7	-	-	-
Ireland	1	1	1	-	1	1	1	1	1
Italy	1	1	1	-	1	1	1	1	1
Latvia	1	1	5	-	2	2	2	7	2
Lithuania	1	1	5	6	2	2	1	2	2
Netherlands	1	1	6	5	8	7	1	8	7
Norway	1	1	1	-	1	1	1	1	1
Poland 2,3,4	1	1	3	-	2	5	1	2	5
Poland 5	6	8	5	-	8	7	5	8	2
Portugal	1	1	5	-	1	1	1	1	1
Russian Federation	1	1	1	-	2	1	1	3	1
Slovak Republic	1	1	1	-	1	1	1	1	1
Spain	1	1	5	6	3	3	1	3	6
Sweden	1	1	4	6	1	1	1	1	1
Switzerland	1	1	1	-	1	1	1	1	1
Turkey	1	1	5	6	2	5	1	2	5
United Kingdom	1	1	1	6	1	1	1	1	1
Yugoslavia	2	2	5	-	2	5	2	2	5
CEC (I4)	1	1	1/5	6	1/2	1/2	1	1/2	1/2

Table 1.6: Methods used for analysing sulphur dioxide and sulphate in particles.

Ion chromatography	SO_2	SO_4	1
X-ray fluorescence (XRF)		SO_4	2
Thorin	SO_2	SO_4	3
Ring-oven technique		SO_4	4
Isotopic dilution method	SO_2	SO_4	5
Pararosanilin method	SO_2		6
Flame photometry	SO_2		7
Sulfonazo III, automatic,	SO_2	SO_4	8
UV-fluorescence	SO_2		9
Proton Induced X-ray Emission (PIXE)		SO_4	10
Nephelometry (barium sulphate)	SO_2	SO_4	11
DOAS	SO_2		12
Plasma emission spectrometry		SO_4	13
Capillary Electrophoresis	SO_2	SO_4	14

Table 1.7: Methods used for analysing nitrogen dioxide.

Ion chromatography	1
Saltzman	2
Spectrophotometric, Griess method	3
Chemiluminescence	4
DOAS	5

Table 1.8: Methods used for determination of ammonium in aerosols, ammonia, and the sum of ammonium and ammonia.

Ion chromatography	1
Spectrophotometric, Chloramin T	2
Spectrophotometric, Indophenol method	3
Flow Injection Analysis	4

Table 1.9: Methods used for determination of nitrate in aerosols, nitric acid, and the sum of nitrate and nitric acid.

Ion chromatography	1
Spectrophotometric, Griess after Cd reduction	2
Spectrophotometric, Nitration of sodium salicylate	3
Spectrophotometric, Griess after hydrazine reduction	4
Capillary Electrophoresis	5

Table 1.10: Methods used for determination of sulphate in precipitation.

Ion chromatography	1
Thorin	2
Isotope dilution	3
Turbidity/Nephelometry (barium sulphate)	4
Sulfonazo III	5
Capillary Electrophoresis	6

Table 1.11: Methods used for determination of nitrate in precipitation.

Ion chromatography	1
Spectrophotometric Griess method, Cd reduction	2
Spectrophotometric, Flow injection analysis	3
UV-spectrophotometric	4
Other spectrophotometric	5
Griess method, Hydrazine reduction	6
Nesslers method after reduction	7
Capillary Electrophoresis	8

Table 1.12: Methods used for determination of ammonium in precipitation.

Ion chromatography	1
Spectrophotometric, Nesslers method	2
Spectrophotometric, Chloramin T	3
Spectrophotometric, Flow injection analysis	4
Spectrophotometric, Indophenol method	5
As method 5, using sodium salicylate instead of phenol	6
Gas sensitive electrode	7

Table 1.13: Methods used for determination of strong acid in precipitation.

Coulometric titration method	1
As above, but automatic plotting of Gran's function	2
Alkali titration	3
Gran's plot titration	4
Acid and alkali titration	5
Calculated from pH	6

Table 1.14: Methods used for determination of magnesium and calcium in precipitation.

Ion chromatography	1
Atomic absorption method	2
As method 2 + addition of lanthanium	3
As method 2 + addition of cesium	4
As method 2 + addition of potassium	5
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	6
Atomic emission method	7
Plasma emission spectrometry	8

Table 1.15: Methods used for determination of sodium and potassium in precipitation.

Ion chromatography	1
Atomic emission method	2
As method 2 + addition of cesium	3
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	4
Atomic absorption method	5
As method 5 + addition of cesium	6
Plasma emission spectrometry	7

Table 1.16: Methods used for determination of chloride in precipitation.

Ion chromatography	1
Spectrophotometric, mercury thiocyanate/iron method	2
Ion selective electrode	3
Setpoint titration	4
Capillary Electrophoresis	5

Annex 2

Annual statistics on precipitation data

AT0002R Illmitz Austria

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	1.11	0.05	5.66	486.0	98.4	0	73	
Ca++	0.73	0.10	7.70	319.2	98.4	0	73	
Cl-	0.19	0.00	3.50	83.4	97.7	10	72	
Mg++	0.234	0.014	4.457	102.3	98.4	0	73	
NO3-	0.56	0.09	4.86	245.7	98.4	0	73	
pH	5.30	4.15	7.14	2183.9	98.4	0	73	
K+	0.16	0.01	1.33	70.6	98.4	0	73	
Precip	-	0.0	31.8	430.9	99.7	291	365	
Na+	0.16	0.02	2.99	67.5	98.4	0	73	
SO4-- corr	0.88	0.07	6.76	384.7	98.4	0	73	
SO4--	0.90	0.08	6.97	394.0	98.4	0	73	

AT0004R St. Koloman Austria

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.70	0.03	14.85	876.2	89.1	0	152	
Ca++	0.35	0.00	2.70	443.0	90.6	2	155	
Cl-	0.17	0.00	5.10	211.9	90.6	28	155	
Mg++	0.048	0.010	0.473	59.7	86.0	0	150	
NO3-	0.37	0.01	2.94	456.8	90.6	0	154	
pH	5.11	3.64	7.78	9574.9	91.9	0	166	
K+	0.17	0.01	4.96	206.4	71.4	0	130	
Precip	-	0.0	32.7	1246.5	100.0	188	366	
Na+	0.12	0.01	4.05	149.1	86.5	0	152	
SO4-- corr	0.31	0.02	2.19	390.7	90.6	0	154	
SO4--	0.33	0.03	2.22	407.7	90.6	0	154	

AT0005R Vorhegg Austria

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.29	0.01	4.03	425.7	89.7	0	120	
Ca++	0.51	0.00	9.60	747.7	90.8	10	122	
Cl-	0.20	0.00	5.20	295.0	84.8	28	115	
Mg++	0.068	0.010	2.188	98.3	90.6	0	122	
NO3-	0.29	0.02	3.14	421.0	90.8	0	121	
pH	5.13	3.43	7.35	10855.1	90.9	0	128	
K+	0.03	0.00	1.23	44.9	81.7	4	114	
Precip	-	0.0	36.6	1450.6	100.0	226	366	
Na+	0.14	0.00	4.31	203.2	89.1	2	118	
SO4-- corr	0.44	-0.03	3.13	637.0	90.5	1	119	
SO4--	0.46	0.03	3.14	662.6	90.8	0	120	

CH0002R Payerne Switzerland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.46	0.03	3.56	394.9	97.9	0	113	
Ca++	0.45	0.03	2.33	390.1	97.9	2	113	
Cl-	0.16	0.03	7.65	138.6	97.9	22	113	
Mg++	0.040	0.005	0.483	34.6	97.9	12	113	
NO3-	0.29	0.03	1.87	248.9	97.9	0	113	
pH	5.36	4.16	7.10	3735.5	99.6	0	132	
K+	0.04	0.01	0.92	35.5	97.9	59	113	
Precip	-	0.0	39.1	866.5	99.5	213	364	
Na+	0.11	0.01	4.89	94.8	97.9	12	113	
SO4-- corr	0.31	0.01	2.17	264.5	97.9	1	113	
SO4--	0.31	0.01	2.18	272.7	97.9	1	113	

CH0004R Chaumont Switzerland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.33	0.04	2.00	361.3	99.8	0	45	W
Ca++	0.37	0.03	2.76	407.9	99.8	5	45	W
Cl-	0.15	0.03	0.81	168.7	99.8	2	45	W
Mg++	0.033	0.005	0.252	36.7	99.8	4	45	W
NO3-	0.25	0.05	1.67	270.9	99.8	0	45	W
pH	5.13	4.49	6.63	8200.1	100.0	0	48	W
K+	0.03	0.01	0.30	37.8	99.8	22	45	W
Precip	-	0.0	73.0	1096.4	82.0	2	50	W
Na+	0.11	0.02	0.66	122.3	99.8	0	45	W
SO4-- corr	0.28	0.04	2.40	312.8	99.8	0	45	W
SO4--	0.29	0.04	2.46	323.2	99.8	0	45	W

CH0005R Rigi Switzerland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.46	0.01	2.32	555.5	98.9	1	142	
Ca++	0.50	0.03	6.24	606.5	98.9	20	142	
Cl-	0.12	0.03	2.15	152.1	98.9	40	142	
Mg++	0.033	0.005	0.245	40.1	98.9	33	142	
NO3-	0.34	0.03	1.99	416.7	98.9	0	142	
pH	5.14	4.08	7.51	8813.9	99.7	0	156	
K+	0.04	0.01	0.40	45.1	98.9	71	142	
Precip	-	0.0	45.5	1212.6	99.7	193	365	
Na+	0.10	0.01	1.55	120.0	98.9	20	142	
SO4-- corr	0.34	0.01	2.62	412.1	98.9	1	142	
SO4--	0.35	0.01	2.67	422.6	98.9	1	142	

CZ0001R Svratouch Czech Republic

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	1.34	0.14	5.84	968.3	93.7	0	41	W
Ca++	0.39	0.10	3.08	282.4	93.7	0	41	W
Cl-	0.99	0.06	3.92	712.2	93.7	0	41	W
Mg++	0.074	0.020	0.400	53.5	93.7	0	41	W
NO3-	0.60	0.00	2.55	429.4	93.7	1	41	W
pH	4.75	4.11	6.72	12876.8	97.0	0	43	W
K+	0.37	0.01	1.62	263.2	93.7	0	41	W
Precip	-	0.0	58.6	721.8	95.9	3	51	W
Na+	0.17	0.03	0.55	125.6	88.8	0	36	W
SO4-- corr	0.62	-0.08	3.08	449.6	93.7	3	41	W
SO4--	0.65	0.00	3.36	471.0	93.7	3	41	W

CZ0003R Kosetice Czech Republic

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.52	0.11	3.66	338.8	96.9	0	46	W
Ca++	0.27	0.02	2.79	178.8	96.9	0	46	W
Cl-	0.26	0.01	1.09	171.7	96.8	0	45	W
Mg++	0.036	0.010	0.230	23.7	96.9	0	46	W
NO3-	0.49	0.20	2.07	318.0	96.8	0	45	W
pH	4.74	4.18	6.50	12044.1	96.9	0	46	W
K+	0.06	0.01	0.46	38.2	96.8	0	45	W
Precip	-	0.0	39.8	653.8	95.9	3	51	W
Na+	0.09	0.02	0.57	60.7	63.1	0	31	W
SO4-- corr	0.53	0.07	3.45	347.4	96.8	0	45	W
SO4--	0.55	0.08	3.48	357.1	96.8	0	45	W

CZ0003R Kosetice Czech Republic

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.56	0.05	5.90	367.4	98.7	0	153		
Ca++	0.23	0.02	3.09	152.7	93.4	0	139		
Cl-	0.36	0.03	9.22	234.7	90.0	0	141		
Mg++	0.038	0.010	0.750	25.2	94.3	0	143		
NO3-	0.50	0.09	2.49	326.3	97.9	0	143		
pH	4.68	3.85	6.86	13909.6	98.8	0	155		
K+	0.09	0.02	2.05	58.1	95.8	0	142		
Precip	-	0.0	39.3	658.4	100.0	191	366		
Na+	0.14	0.01	3.77	92.3	96.2	0	145		
SO4-- corr	0.56	0.05	4.36	371.3	96.0	0	143		
SO4--	0.57	0.06	4.38	374.4	98.1	0	144		

DE0002R Langenbrugge Germany

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.78	0.00	5.32	398.1	81.2	1	122	
Ca++	0.67	0.00	9.40	338.7	82.0	2	133	
Cl-	0.76	0.10	36.20	385.5	82.1	0	136	
Mg++	0.140	0.020	1.600	71.2	82.0	0	132	
NO3-	0.81	0.14	4.79	410.5	82.1	0	136	
pH	4.90	4.31	6.93	6474.9	81.9	0	120	
K+	0.14	0.00	6.04	72.6	84.1	5	134	
Precip	-	0.0	23.9	428.8	92.9	146	340	
Na+	0.36	0.00	7.94	185.2	82.0	2	132	
SO4-- corr	0.67	0.20	7.29	339.7	82.1	0	136	
SO4--	0.71	0.21	7.33	360.5	82.1	0	136	

DE0004R Deuselbach Germany

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.40	0.01	7.16	372.6	95.3	0	181	
Ca++	0.25	0.00	7.00	237.4	95.6	8	189	
Cl-	0.58	0.10	33.10	542.3	95.5	0	189	
Mg++	0.057	0.005	1.110	53.1	98.0	16	192	
NO3-	0.40	0.08	5.71	374.4	95.5	0	189	
pH	4.81	4.02	7.14	14361.9	95.0	0	170	
K+	0.05	0.00	1.63	50.4	95.9	32	190	
Precip	-	0.0	35.6	895.6	98.4	138	360	
Na+	0.29	0.00	19.25	273.9	97.1	12	190	
SO4-- corr	0.44	0.03	11.46	405.9	95.5	0	189	
SO4--	0.46	0.08	12.12	431.4	95.5	0	189	

DK0005R Keldsnor Denmark

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.74	0.26	1.84	383.8	100.0	0	23	BW
Ca++	0.30	0.12	1.01	154.5	100.0	0	23	BW
Cl-	3.40	0.63	18.90	1764.4	100.0	0	23	BW
Mg++	0.218	0.050	1.250	113.1	100.0	0	23	BW
NO3-	0.62	0.33	1.22	322.6	100.0	0	23	BW
pH	4.85	4.24	6.44	7313.7	100.0	0	23	BW
K+	0.21	0.10	0.62	107.6	100.0	0	23	BW
Precip	-	6.8	45.0	518.3	99.7	0	23	BW
Na+	1.94	0.39	10.60	1006.0	100.0	0	23	BW
SO4-- corr	0.53	0.28	1.15	275.3	100.0	0	23	BW
SO4--	0.69	0.34	1.18	359.2	100.0	0	23	BW

DK0008R Anholt Denmark

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.44	0.05	0.79	314.0	100.0	0	23	BW
Ca++	0.36	0.10	1.54	253.2	100.0	0	23	BW
Cl-	6.49	0.54	69.00	4617.7	100.0	0	23	BW
Mg++	0.414	0.050	4.410	294.7	100.0	0	23	BW
NO3-	0.60	0.21	1.11	424.4	100.0	0	23	BW
pH	4.66	4.28	5.51	15477.7	100.0	0	23	BW
K+	0.19	0.04	1.53	133.6	100.0	0	23	BW
Precip	-	8.7	64.5	711.5	99.7	0	23	BW
Na+	3.30	0.37	20.15	2349.0	100.0	0	23	BW
SO4-- corr	0.50	0.09	1.81	353.3	100.0	0	23	BW
SO4--	0.77	0.35	3.50	546.6	100.0	0	23	BW

DK0022R Sepstrup Sande Denmark

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.60	0.33	2.03	422.1	100.0	0	18	BW
Ca++	0.11	0.05	0.48	77.7	100.0	0	18	BW
Cl-	2.27	0.26	6.75	1587.8	100.0	0	18	BW
Mg++	0.128	0.010	0.390	89.3	100.0	0	18	BW
NO3-	0.54	0.28	1.69	376.2	100.0	0	18	BW
pH	4.82	4.43	5.81	10528.6	100.0	0	18	BW
K+	0.07	0.03	0.14	49.3	100.0	0	18	BW
Precip	-	0.0	82.6	699.3	83.1	1	19	BW
Na+	1.30	0.15	3.78	910.0	100.0	0	18	BW
SO4-- corr	0.43	0.24	1.29	302.2	100.0	0	18	BW
SO4--	0.54	0.34	1.41	377.9	100.0	0	18	BW

EE0009R Lahemaa Estonia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.14	0.00	0.94	88.1	96.7	3	42	W
Ca++	0.24	0.10	1.70	148.0	90.4	0	39	W
Cl-	0.38	0.05	1.80	229.0	97.4	2	44	W
Mg++	0.042	0.005	0.200	25.3	96.6	9	42	W
NO3-	0.24	0.01	1.11	148.5	92.6	1	44	W
pH	4.67	3.98	6.50	12923.0	97.4	0	45	W
K+	0.11	0.05	0.64	66.1	96.6	18	42	W
Precip	-	0.0	43.3	608.5	99.5	6	52	W
Na+	0.20	0.05	1.15	122.6	96.6	12	42	W
SO4-- corr	0.39	0.14	1.95	236.2	97.4	0	44	W
SO4--	0.41	0.14	2.07	248.7	97.4	0	44	W

EE0011R Vilsandi Estonia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.24	0.01	0.81	120.7	100.0	0	29	W
Ca++	0.28	0.05	1.50	138.9	100.0	2	29	W
Cl-	0.32	0.00	1.40	163.8	100.0	3	29	W
Mg++	0.080	0.005	0.500	40.5	100.0	3	29	W
NO3-	0.31	0.01	1.37	159.0	100.0	0	29	W
pH	4.54	4.04	6.31	14435.3	100.0	0	29	W
K+	0.09	0.05	0.60	46.0	100.0	14	29	W
Precip	-	0.0	55.1	505.2	99.5	23	52	W
Na+	0.61	0.05	5.79	306.7	100.0	1	29	W
SO4-- corr	0.44	0.15	1.58	224.8	100.0	0	29	W
SO4--	0.49	0.16	1.63	249.0	100.0	0	29	W

ES0001R Toledo Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.21	0.04	1.25	43.6	97.9	13	35	
Ca++	0.58	0.10	2.86	120.8	97.1	0	33	
Cl-	0.86	0.51	3.26	179.2	98.2	0	37	
Mg++	0.077	0.030	0.450	16.0	97.1	0	33	
NO3-	0.23	0.04	1.03	47.3	98.2	1	37	
pH	6.03	5.32	7.18	196.1	99.1	0	43	
K+	0.10	0.05	0.64	21.8	97.1	0	33	
Precip	-	0.0	32.4	208.0	44.5	117	163	
Na+	0.36	0.10	2.80	74.3	97.1	0	33	
SO4-- corr	0.49	0.18	1.77	102.6	98.2	0	37	
SO4--	0.53	0.20	1.90	110.7	98.2	0	37	

ES0003R Roquetas Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.37	0.04	2.64	88.2	98.8	4	18	
Ca++	4.55	1.30	21.90	1073.2	77.6	0	13	
Cl-	2.39	0.69	6.74	563.6	99.7	0	20	
Mg++	0.357	0.120	1.400	84.3	77.6	0	13	
NO3-	1.13	0.22	6.23	266.0	99.7	0	20	
pH	6.87	6.46	7.55	31.7	100.0	0	22	
K+	0.28	0.07	1.08	65.5	77.6	0	13	
Precip	-	0.0	45.6	236.0	44.3	140	162	
Na+	0.89	0.26	2.90	209.7	77.6	0	13	
SO4-- corr	1.41	0.28	10.52	332.7	99.7	0	20	
SO4--	1.53	0.36	10.83	362.2	99.7	0	20	

ES0004R Logrono Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	1.21	0.04	9.59	398.9	90.4	1	59	
Ca++	2.16	0.47	15.30	712.7	88.1	0	53	
Cl-	1.00	0.00	9.59	331.6	92.1	1	67	
Mg++	0.149	0.040	0.600	49.0	88.1	0	53	
NO3-	0.62	0.09	3.49	204.8	91.9	0	66	
pH	6.54	5.32	8.11	96.0	94.5	0	81	
K+	0.85	0.09	5.60	279.2	88.1	0	53	
Precip	-	0.0	19.8	330.2	97.5	255	357	
Na+	0.36	0.05	2.22	120.2	88.1	2	53	
SO4-- corr	0.94	0.03	7.62	309.4	91.9	0	66	
SO4--	1.00	0.22	7.81	331.3	91.9	0	66	

ES0005R Noia Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.05	0.04	0.60	37.0	100.0	22	30	
Ca++	0.19	0.04	5.50	127.1	100.0	0	30	
Cl-	1.97	0.53	11.43	1321.5	100.0	0	30	
Mg++	0.148	0.030	0.800	99.6	100.0	0	30	
NO3-	0.15	0.11	0.82	103.4	100.0	0	30	
pH	5.39	4.00	6.88	2760.4	100.0	0	30	
K+	0.06	0.03	0.34	40.5	100.0	7	30	
Precip	-	0.0	99.8	672.1	40.7	119	149	
Na+	1.16	0.10	6.80	778.4	100.0	0	30	
SO4-- corr	0.32	0.14	1.90	214.4	100.0	0	30	
SO4--	0.42	0.24	1.91	279.4	100.0	0	30	

ES0007R Viznar Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.14	0.04	1.30	82.0	97.0	41	67	
Ca++	1.20	0.20	12.50	716.6	96.2	0	62	
Cl-	1.03	0.43	5.75	613.5	97.4	0	70	
Mg++	0.223	0.070	1.600	132.6	96.2	0	62	
NO3-	0.29	0.04	2.12	171.1	97.4	4	70	
pH	6.44	5.91	7.28	216.4	97.6	0	75	
K+	0.11	0.03	0.74	66.2	96.2	5	62	
Precip	-	0.0	39.0	595.6	98.6	276	361	
Na+	0.46	0.05	3.20	275.8	96.2	1	62	
SO4-- corr	0.50	0.17	4.90	298.6	97.4	0	70	
SO4--	0.56	0.23	5.09	333.4	97.4	0	70	

ES0008R Niembro Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.27	0.04	6.22	180.1	98.8	44	148	
Ca++	0.58	0.07	9.00	386.5	98.2	0	137	
Cl-	7.81	0.22	85.60	5159.4	99.1	0	151	
Mg++	0.557	0.070	2.900	367.8	98.2	0	137	
NO3-	0.42	0.04	6.70	275.3	99.1	1	151	
pH	4.89	3.55	7.44	8576.6	99.1	0	151	
K+	0.24	0.03	5.80	158.2	98.2	4	137	
Precip	-	0.0	58.0	660.8	99.7	205	365	
Na+	4.75	0.43	23.75	3137.2	98.2	0	137	
SO4-- corr	0.75	0.14	9.98	494.8	99.1	0	151	
SO4--	1.14	0.36	11.39	752.5	99.1	0	151	

ES0009R Campisabalos Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.20	0.04	3.63	92.9	94.3	30	74	
Ca++	1.03	0.05	11.60	483.9	92.8	0	68	
Cl-	1.11	0.42	27.20	519.9	95.6	0	85	
Mg++	0.116	0.010	1.000	54.3	92.8	2	68	
NO3-	0.24	0.04	2.04	113.7	96.2	6	87	
pH	6.25	5.30	7.56	266.5	97.3	0	96	
K+	0.10	0.03	1.29	45.4	93.0	16	69	
Precip	-	0.0	30.8	469.0	94.5	218	346	
Na+	0.50	0.05	6.50	233.3	92.8	4	68	
SO4-- corr	0.40	0.14	4.28	189.0	96.0	0	86	
SO4--	0.46	0.16	5.55	215.4	96.2	0	87	

ES0010R Cabo de Creus Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.26	0.04	3.06	85.8	86.0	18	51	
Ca++	6.26	0.86	29.60	2057.8	84.4	0	48	
Cl-	40.07	3.52	396.00	13166.0	86.1	0	52	
Mg++	2.997	0.400	27.000	985.0	84.4	0	48	
NO3-	0.86	0.17	10.45	283.9	86.1	0	53	
pH	6.14	5.41	7.97	238.6	86.2	0	54	
K+	1.21	0.22	8.25	396.4	84.4	0	48	
Precip	-	0.0	44.8	328.6	99.2	288	363	
Na+	23.39	2.40	242.00	7685.3	84.4	0	48	
SO4-- corr	1.17	0.26	23.29	385.4	86.1	0	52	
SO4--	3.09	0.94	25.42	1016.2	86.1	0	53	

ES0011R Barcarrola Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.19	0.04	5.01	95.1	92.7	42	73	
Ca++	2.09	0.43	24.90	1045.5	92.3	0	70	
Cl-	1.54	0.09	25.67	771.0	92.8	0	76	
Mg++	0.910	0.130	21.500	456.3	92.3	0	70	
NO3-	0.25	0.04	2.68	125.8	92.8	7	76	
pH	6.71	6.28	8.31	97.5	93.3	0	78	
K+	0.22	0.03	3.40	111.1	92.3	3	70	
Precip	-	0.0	36.0	501.2	96.4	247	353	
Na+	0.79	0.12	8.20	393.3	92.3	0	70	
SO4-- corr	0.53	-0.15	3.96	265.9	92.8	1	76	
SO4--	0.60	0.34	4.75	301.4	92.8	0	76	

ES0012R Zarra Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.32	0.04	1.82	85.8	97.1	22	54	
Ca++	5.73	0.49	37.50	1524.4	95.9	0	53	
Cl-	1.34	0.47	7.24	356.2	97.3	0	56	
Mg++	0.380	0.070	2.500	101.2	95.9	0	53	
NO3-	0.88	0.04	7.91	234.7	97.3	1	56	
pH	6.92	6.52	7.89	32.0	98.3	0	58	
K+	0.21	0.03	1.50	55.8	95.9	5	53	
Precip	-	0.0	38.4	266.0	100.0	298	366	
Na+	0.84	0.05	5.70	223.0	95.9	1	53	
SO4-- corr	0.86	0.13	6.93	229.0	97.3	0	56	
SO4--	0.95	0.18	7.29	251.8	97.3	0	56	

ES0013R Penausende Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.10	0.04	4.48	24.7	97.3	21	46	
Ca++	0.37	0.07	3.84	89.4	94.6	0	42	
Cl-	1.07	0.52	6.54	257.4	98.8	0	53	
Mg++	0.108	0.020	0.800	26.1	94.6	0	42	
NO3-	0.15	0.04	1.50	36.4	98.8	11	53	
pH	6.33	5.77	8.15	113.5	99.1	0	55	
K+	0.07	0.03	1.01	17.0	94.6	14	42	
Precip	-	0.0	21.8	241.4	41.5	93	152	
Na+	0.54	0.11	4.50	130.4	94.6	0	42	
SO4-- corr	0.30	0.14	1.94	72.7	98.8	0	53	
SO4--	0.35	0.20	2.01	85.1	98.8	0	53	

ES0014R Els Torms Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.30	0.04	1.00	23.0	93.5	1	13	
Ca++	3.33	2.11	7.50	255.8	92.7	0	12	
Cl-	0.95	0.49	2.59	72.6	95.1	0	14	
Mg++	0.273	0.160	0.600	21.0	92.7	0	12	
NO3-	0.28	0.16	0.63	21.5	95.1	0	14	
pH	7.16	7.01	7.92	5.3	95.6	0	15	
K+	0.10	0.03	0.25	7.7	92.7	1	12	
Precip	-	0.0	23.8	76.8	16.7	42	61	
Na+	0.40	0.10	1.50	30.8	92.7	0	12	
SO4-- corr	0.55	0.25	0.85	42.2	95.1	0	14	
SO4--	0.58	0.30	0.90	44.8	95.1	0	14	

ES0015R Risco Llano Spain

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.27	0.04	0.83	49.5	94.7	2	22	
Ca++	0.54	0.21	1.70	98.2	87.2	0	21	
Cl-	1.66	0.58	10.15	299.9	95.3	0	26	
Mg++	0.140	0.060	0.600	25.4	87.2	0	21	
NO3-	0.29	0.04	0.68	51.9	95.3	1	26	
pH	6.26	5.84	6.95	100.0	95.3	0	26	
K+	0.12	0.03	0.50	22.3	87.2	1	21	
Precip	-	0.0	16.6	180.6	15.8	23	58	
Na+	0.73	0.18	3.60	130.9	87.2	0	21	
SO4-- corr	0.57	0.27	1.27	102.9	95.3	0	26	
SO4--	0.66	0.31	1.57	119.1	95.3	0	26	

FI0004R Ahtari Finland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.15	0.00	1.13	91.0	100.0	1	52	
Ca++	0.07	0.01	1.72	45.4	100.0	0	52	
Cl-	0.17	0.04	1.73	104.8	100.0	0	52	
Mg++	0.019	0.004	0.137	12.0	100.0	0	52	
NO3-	0.22	0.03	0.98	135.6	100.0	0	52	
pH	4.73	4.24	6.18	11377.0	100.0	0	52	
K+	0.05	0.01	0.53	34.2	100.0	0	52	
Precip	-	0.0	52.8	617.0	100.0	9	63	
Precip off	-	0.0	26.1	692.6	100.0	161	366	
Na+	0.09	0.01	1.10	56.8	100.0	0	52	
SO4-- corr	0.26	0.04	1.39	161.7	100.0	0	52	
SO4--	0.27	0.06	1.41	167.3	100.0	0	52	

FI0009R Uto Finland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.37	0.00	2.45	113.4	93.6	3	90	
Ca++	0.22	0.03	2.72	69.0	93.6	0	90	
Cl-	1.92	0.12	28.34	593.3	93.6	0	90	
Mg++	0.151	0.006	1.781	46.5	93.6	0	90	
NO3-	0.45	0.05	3.72	138.9	93.6	0	90	
pH	4.55	3.67	6.19	8619.7	94.0	0	98	
K+	0.12	0.01	1.96	37.2	93.6	0	90	
Precip	-	0.0	12.8	308.4	99.7	250	365	
Precip off	-	0.0	22.2	542.6	100.0	213	366	
Na+	1.10	0.04	15.74	338.4	93.6	0	90	
SO4-- corr	0.50	0.04	2.90	154.5	93.6	0	90	
SO4--	0.59	0.05	3.35	182.6	93.6	0	90	

FI0017R Virolahti II Finland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.43	0.00	3.52	234.2	99.5	3	136	
Ca++	0.26	0.02	4.14	140.9	99.5	0	136	
Cl-	0.43	0.03	12.99	235.4	99.5	0	136	
Mg++	0.051	0.005	1.206	28.0	99.5	0	136	
NO3-	0.38	0.03	2.67	204.4	99.5	0	136	
pH	4.66	3.80	6.45	11854.8	99.8	0	145	
K+	0.12	0.01	1.91	67.8	99.5	0	136	
Precip	-	0.0	20.5	544.8	100.0	212	366	
Precip off	-	0.0	23.2	659.0	100.0	188	366	
Na+	0.24	0.00	7.26	131.3	99.5	0	136	
SO4-- corr	0.62	0.04	3.51	338.4	99.5	0	136	
SO4--	0.65	0.05	3.76	352.0	99.5	0	136	

FI0022R Oulanka Finland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.08	0.00	0.94	44.7	99.3	16	180	
Ca++	0.05	0.00	1.36	24.3	99.3	14	180	
Cl-	0.12	0.00	2.28	64.9	99.3	1	180	
Mg++	0.013	0.002	0.147	6.7	99.3	26	180	
NO3-	0.15	0.00	1.19	79.6	99.3	3	180	
pH	4.75	3.92	5.98	9364.0	99.8	0	194	
K+	0.03	0.00	0.46	15.0	99.3	14	180	
Precip	-	0.0	17.2	529.8	100.0	160	366	
Precip off	-	0.0	20.0	643.1	100.0	139	366	
Na+	0.06	0.00	1.30	31.5	99.3	1	180	
SO4-- corr	0.21	0.00	2.24	109.5	99.3	2	180	
SO4--	0.21	0.01	2.25	112.8	99.3	2	180	

FR0003R La Crouzille France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.35	0.01	3.37	362.5	73.5	6	113	
Ca++	0.32	0.01	3.14	331.2	67.3	4	106	
Cl-	0.83	0.03	4.29	860.3	72.2	2	109	
Mg++	0.097	0.010	0.490	100.7	72.7	6	111	
NO3-	0.22	0.03	1.28	225.9	72.7	0	111	
pH	5.29	4.35	6.88	5286.9	72.0	0	115	
K+	0.06	0.01	0.73	60.9	72.6	36	110	
Precip	-	0.1	39.5	1040.0	100.0	203	366	
Na+	0.48	0.01	2.55	499.0	72.4	2	109	
SO4-- corr	0.29	0.03	2.00	300.9	72.7	0	111	
SO4--	0.33	0.04	2.04	343.7	72.7	0	111	

FR0005R La Hague France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.31	0.01	3.43	355.3	88.3	1	145	
Ca++	0.41	0.06	6.19	470.3	88.0	0	142	
Cl-	10.37	0.47	51.98	12053.2	87.8	0	141	
Mg++	0.784	0.010	3.660	911.2	87.8	1	141	
NO3-	0.25	0.02	6.36	285.5	87.6	0	141	
pH	5.03	3.90	6.83	10875.4	89.4	0	156	
K+	0.24	0.01	1.50	282.0	87.8	11	141	
Precip	-	0.1	60.5	1139.3	99.2	162	363	
Na+	5.96	0.24	30.95	6924.1	87.8	0	141	
SO4-- corr	0.30	-0.25	5.14	350.7	88.0	1	142	
SO4--	0.80	0.03	6.36	934.2	88.0	0	142	

FR0008R Donon France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num Samp sampl	flag
NH4+	0.32	0.01	2.65	543.2	91.8	1	167	
Ca++	0.16	0.01	3.28	278.3	91.3	6	165	
Cl-	0.30	0.03	2.93	512.8	91.5	2	165	
Mg++	0.028	0.010	0.310	46.8	91.7	77	166	
NO3-	0.26	0.05	2.58	444.0	91.6	0	166	
pH	4.89	3.74	6.70	21607.1	90.3	0	169	
K+	0.04	0.01	0.64	71.7	91.2	54	165	
Precip	-	0.2	78.0	1678.7	99.7	159	365	
Na+	0.18	0.01	1.85	302.1	91.3	6	164	
SO4-- corr	0.29	0.05	2.77	485.0	91.8	0	167	
SO4--	0.30	0.05	2.80	513.4	91.8	0	167	

FR0009R Revin France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.45	0.07	3.25	680.7	90.4	0	160	
Ca++	0.22	0.01	2.48	333.1	88.0	2	153	
Cl-	0.56	0.03	6.25	854.1	89.8	3	155	
Mg++	0.048	0.010	0.510	72.6	89.8	45	155	
NO3-	0.32	0.07	1.62	492.5	89.2	0	153	
pH	4.95	4.03	6.69	17212.5	90.3	0	176	
K+	0.06	0.01	0.46	87.8	89.6	40	154	
Precip	-	0.2	35.0	1520.4	100.0	154	366	
Na+	0.33	0.01	3.60	501.9	89.8	7	155	
SO4-- corr	0.37	0.09	1.56	563.5	89.6	0	154	
SO4--	0.40	0.10	1.68	607.1	89.6	0	154	

FR0010R Morvan France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.34	0.01	2.55	406.7	96.9	4	173	
Ca++	0.30	0.01	2.95	355.9	95.6	4	167	
Cl-	0.44	0.03	4.23	520.5	96.7	3	170	
Mg++	0.047	0.010	0.330	56.5	96.7	49	170	
NO3-	0.25	0.01	1.52	299.8	96.7	4	170	
pH	5.16	4.38	6.84	8160.6	97.5	0	181	
K+	0.09	0.01	2.12	107.7	95.3	43	167	
Precip	-	0.1	31.6	1190.9	100.0	157	366	
Na+	0.24	0.01	2.42	290.2	96.7	9	170	
SO4-- corr	0.31	0.00	1.72	374.2	96.7	1	170	
SO4--	0.34	0.01	1.76	400.6	96.7	1	170	

FR0012R Iraty France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.24	0.01	6.33	398.7	86.8	5	144	
Ca++	0.35	0.01	8.86	582.0	85.8	3	138	
Cl-	0.64	0.03	8.05	1065.5	86.6	6	141	
Mg++	0.067	0.010	0.910	110.5	86.6	33	142	
NO3-	0.19	0.02	2.10	306.8	86.6	0	141	
pH	5.21	4.25	7.12	10194.4	88.4	0	149	
K+	0.05	0.01	1.57	75.5	86.4	43	141	
Precip	-	0.1	84.8	1635.3	99.7	190	365	
Na+	0.40	0.01	4.45	656.4	86.6	5	142	
SO4-- corr	0.30	0.02	4.24	495.5	86.6	0	142	
SO4--	0.33	0.02	4.32	551.4	86.6	0	142	

FR0013R Peyrusse Vieille France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.27	0.01	2.29	241.8	97.0	4	123	
Ca++	0.33	0.01	3.35	290.8	96.5	2	120	
Cl-	1.19	0.06	27.98	1051.7	96.9	0	123	
Mg++	0.101	0.010	1.910	89.0	97.1	16	124	
NO3-	0.24	0.01	2.61	211.7	96.7	1	123	
pH	5.01	4.24	6.90	8600.0	97.1	0	128	
K+	0.08	0.01	1.29	65.8	97.0	18	123	
Precip	-	0.1	39.6	882.2	100.0	217	366	
Na+	0.69	0.01	15.44	607.9	96.9	1	123	
SO4-- corr	0.36	0.01	3.76	320.5	97.1	0	124	
SO4--	0.42	0.04	3.83	372.2	97.1	0	124	

FR0014R Montandon France

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.33	0.01	2.83	345.5	95.9	1	154	
Ca++	0.34	0.01	4.80	355.2	95.4	8	150	
Cl-	0.22	0.03	2.70	234.5	95.3	7	151	
Mg++	0.025	0.010	0.450	26.1	95.3	74	151	
NO3-	0.27	0.01	3.29	288.5	95.6	1	152	
pH	5.11	4.05	7.07	8259.6	96.4	0	161	
K+	0.04	0.01	0.62	39.5	95.6	65	151	
Precip	-	0.1	34.4	1059.4	100.0	174	366	
Na+	0.13	0.01	1.55	134.6	95.3	14	151	
SO4-- corr	0.29	0.04	4.16	304.2	95.6	0	152	
SO4--	0.30	0.04	4.26	318.1	95.6	0	152	

GB0002R Eskdalemuir United Kingdom

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.26	0.01	11.25	174.6	83.5	3	86	
Ca++	0.07	0.00	1.10	43.3	84.7	24	87	
Cl-	1.70	0.10	50.00	1119.4	81.8	0	85	
Mg++	0.109	0.014	3.206	72.2	83.5	9	86	
NO3-	0.15	0.01	1.43	101.1	83.5	0	86	
K+	0.07	0.01	2.64	48.4	83.5	18	86	
Precip	-	0.0	23.5	562.3	45.6	71	167	
Na+	0.92	0.06	27.85	607.5	81.8	0	85	
SO4-- corr	0.23	0.06	2.91	154.9	83.5	0	86	
SO4--	0.31	0.08	2.96	204.2	83.5	0	86	

HU0002R K-Puszta Hungary

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.75	0.04	6.19	184.1	98.6	0	46	
Ca++	1.08	0.24	7.25	264.1	99.9	0	45	
Cl-	1.23	0.29	19.67	301.7	100.0	0	47	
Mg++	0.334	0.110	2.240	82.1	99.9	0	45	
NO3-	0.46	0.13	4.29	113.2	100.0	0	47	
pH	5.79	4.70	7.38	395.6	93.2	0	44	
K+	0.23	0.07	1.64	55.6	99.9	0	45	
Precip	-	0.0	20.5	245.6	100.0	319	366	
Na+	0.68	0.28	7.90	166.6	99.9	0	45	
SO4-- corr	1.23	0.38	10.47	301.5	100.0	0	47	
SO4--	1.29	0.44	11.39	317.4	100.0	0	47	

IE0002R Turlough Hill Ireland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.41	-0.01	5.98	408.2	100.0	20	185	
Ca++	0.28	0.00	4.30	277.8	100.0	12	185	
Cl-	3.31	0.00	269.10	3256.4	100.0	1	185	
Mg++	0.246	0.000	8.370	241.6	100.0	10	185	
NO3-	0.22	-0.19	6.27	217.0	100.0	4	185	
pH	5.45	3.70	7.00	3518.6	99.6	0	164	
K+	0.22	-0.01	10.60	219.4	100.0	24	184	
Precip	-	0.1	31.4	983.9	81.1	117	297	
Na+	1.98	0.00	141.25	1946.8	100.0	2	185	
SO4-- corr	0.32	-0.13	4.30	320.3	100.0	3	185	
SO4--	0.48	0.00	6.44	474.2	100.0	3	185	

IE0003R The Burren Ireland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.22	-0.04	3.42	159.8	100.0	32	211	
Ca++	0.51	0.00	7.40	364.1	100.0	3	211	
Cl-	11.90	0.40	134.30	8436.5	99.6	0	210	
Mg++	0.861	0.021	19.848	610.4	100.0	0	211	
NO3-	0.18	0.00	1.94	128.8	100.0	3	211	
pH	5.50	3.50	6.80	2244.9	99.5	0	198	
K+	0.53	0.00	6.85	378.8	100.0	5	211	
Precip	-	0.2	23.4	709.1	100.0	155	366	
Na+	7.38	0.12	127.75	5234.1	99.6	0	210	
SO4-- corr	0.29	-4.83	6.68	204.3	100.0	25	211	
SO4--	0.93	0.03	17.01	660.0	100.0	0	211	

IE0004R Ridge Of Capard Ireland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	1.13	0.00	177.92	1054.2	100.0	5	153	
Ca++	0.26	0.00	2.61	242.7	100.0	4	153	
Cl-	3.08	0.10	96.40	2874.7	100.0	0	153	
Mg++	0.213	0.000	4.998	198.3	100.0	5	153	
NO3-	0.14	0.00	2.38	126.0	100.0	4	153	
pH	5.60	4.20	7.80	2359.5	100.0	0	152	
K+	0.43	0.00	16.06	404.8	100.0	11	153	
Precip	-	0.4	30.7	933.0	82.2	148	301	
Na+	1.94	0.02	77.20	1811.5	100.0	0	153	
SO4-- corr	0.30	-3.05	40.20	276.6	100.0	10	153	
SO4--	0.46	0.04	41.15	427.2	100.0	0	153	

IS0002R Irafoss Iceland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
pH	5.58	4.90	7.70	4033.2	100.0	0	161	
Precip	-	0.0	93.0	1518.8	100.0	205	366	
Na+	3.63	0.10	108.40	5517.1	100.0	0	161	
SO4-- corr	0.11	-0.72	2.34	168.4	100.0	15	161	
SO4--	0.41	0.10	9.50	630.2	100.0	0	161	

IT0001R Montelibretti Italy

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.44	0.01	12.96	391.0	96.1	0	44	
Ca++	2.10	0.28	48.90	1880.0	100.0	0	47	
Cl-	3.70	0.10	224.00	3311.8	100.0	0	47	
Mg++	0.329	0.030	18.750	294.5	100.0	0	47	
NO3-	0.43	0.07	9.05	388.9	100.0	0	47	
pH	4.60	3.14	7.97	22436.3	100.0	0	47	
K+	0.26	0.03	8.67	228.8	100.0	0	47	
Precip	-	0.0	81.0	895.4	100.0	319	366	
Na+	2.15	0.04	137.60	1928.0	100.0	0	47	
SO4-- corr	0.61	0.13	9.19	548.3	100.0	0	47	
SO4--	0.80	0.15	12.73	714.3	100.0	0	47	

IT0004R Ispra Italy

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.82	0.03	15.03	1721.5	99.1	0	104	
Ca++	0.71	0.00	25.80	1503.4	99.1	2	104	
Cl-	0.32	0.00	4.50	676.1	99.1	7	104	
Mg++	0.068	0.010	0.840	143.8	99.1	0	104	
NO3-	0.57	0.01	11.82	1205.0	99.1	0	104	
pH	4.86	3.56	7.90	29403.6	99.0	0	103	
K+	0.08	0.00	0.82	171.2	99.1	8	104	
Precip	-	0.0	89.4	2106.7	98.9	257	362	
Na+	0.23	0.00	2.79	476.9	99.1	1	104	
SO4-- corr	0.62	0.00	6.76	1305.3	99.1	0	104	
SO4--	0.64	0.01	6.84	1350.6	99.1	0	104	

LT0015R Preila Lithuania

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.61	0.02	3.47	215.5	99.1	0	103	
Ca++	0.88	0.20	10.00	309.9	99.1	0	103	
Cl-	3.90	0.25	30.70	1374.6	99.1	0	103	
NO3-	0.60	0.05	6.12	210.7	99.1	0	103	
pH	5.00	3.97	6.77	3500.5	99.1	0	104	
K+	0.21	0.05	2.90	73.6	99.1	0	103	
Precip	-	0.0	18.8	352.2	100.0	181	289	
Na+	2.26	0.20	17.90	796.9	99.1	0	103	
SO4-- corr	0.68	-0.27	9.37	239.2	99.1	1	103	
SO4--	0.87	0.14	9.58	305.9	99.1	0	103	

LV0010R Rucava Latvia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.35	0.01	1.64	211.5	99.1	5	116	
Ca++	0.23	0.01	7.51	137.8	98.8	0	115	
Cl-	1.04	0.10	6.00	623.7	98.0	0	112	
Mg++	0.093	0.002	0.986	55.5	98.8	0	115	
NO3-	0.58	0.10	2.40	348.2	98.8	0	115	
pH	4.18	3.08	6.71	39336.9	99.5	0	119	
K+	0.10	0.01	1.26	57.2	98.0	1	114	
Precip	-	0.0	39.4	597.0	100.0	244	365	
Na+	0.58	0.04	3.14	346.5	98.8	0	115	
SO4-- corr	0.60	-0.03	2.96	358.4	98.8	2	115	
SO4--	0.65	0.03	3.00	389.0	98.8	0	115	

LV0016R Zoseni Latvia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.43	0.02	3.03	293.4	96.7	0	139	
Ca++	0.48	0.01	4.52	323.0	95.8	0	133	
Cl-	0.58	0.10	7.56	389.6	92.8	0	121	
Mg++	0.178	0.001	1.416	120.0	95.2	0	128	
NO3-	0.41	0.04	2.00	279.7	96.0	0	134	
pH	4.92	3.65	7.15	8035.8	98.8	0	161	
K+	0.12	0.01	1.24	82.0	96.0	0	134	
Precip	-	0.0	50.4	675.2	100.0	184	365	
Na+	0.30	0.01	4.16	203.5	95.8	0	133	
SO4-- corr	0.50	0.04	1.98	335.9	96.0	0	134	
SO4--	0.53	0.04	2.00	357.4	96.0	0	134	

NL0009R Kollumerwaard Netherlands

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
H+	-5.	-288.	116.	-3584.	91.3	103	153	
NH4+	0.79	0.04	3.32	563.1	89.3	0	127	
Ca++	0.37	0.00	2.10	262.6	88.1	1	119	
Cl-	2.64	0.10	45.80	1873.8	90.8	0	144	
Mg++	0.191	0.000	2.044	136.1	88.1	10	119	
NO3-	0.51	0.09	2.64	363.5	90.8	0	144	
pH	5.25	3.97	7.35	4022.8	91.4	0	154	
K+	0.19	0.00	1.77	136.0	88.1	6	119	
Precip	-	0.0	16.9	710.8	99.7	166	365	
Na+	1.46	0.07	17.06	1037.2	88.1	0	119	
SO4-- corr	0.57	0.13	1.92	403.9	90.8	0	144	
SO4--	0.70	0.21	2.99	494.6	90.8	0	144	

NO0001R Birkenes Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.34	0.00	3.44	823.0	99.0	18	187	
Ca++	0.10	0.00	1.18	234.1	99.3	8	189	
Cl-	2.84	0.00	30.91	6853.2	99.3	2	189	
Mg++	0.190	0.005	2.019	459.3	99.3	13	189	
NO3-	0.45	0.00	3.15	1083.4	99.3	4	189	
pH	4.56	3.72	5.75	66894.4	99.3	0	202	
K+	0.08	0.00	0.62	199.9	99.0	10	187	
Precip	-	0.0	62.9	2415.2	100.0	123	366	
Na+	1.53	0.00	16.12	3698.2	99.3	1	189	
SO4-- corr	0.40	0.01	2.37	955.8	99.3	0	189	
SO4--	0.52	0.02	2.50	1262.1	99.3	0	189	

NO0008R Skreaadalen Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.25	0.00	3.48	750.8	99.1	3	212	
Ca++	0.14	0.00	1.67	425.7	98.4	2	212	
Cl-	3.60	0.05	58.77	10789.2	99.3	0	214	
Mg++	0.212	0.005	3.341	635.7	99.4	3	215	
NO3-	0.23	0.00	3.37	705.2	99.4	3	215	
pH	4.90	4.02	6.90	37411.5	98.5	0	223	
K+	0.19	0.03	1.85	578.8	99.1	0	212	
Precip	-	0.0	92.3	2997.3	100.0	120	366	
Na+	2.02	0.07	32.11	6062.0	99.3	0	214	
SO4-- corr	0.22	-0.06	3.08	675.2	99.4	3	215	
SO4--	0.38	0.02	3.28	1148.5	99.4	0	215	

NO0015R Tustervatn Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.15	0.00	1.49	191.2	92.7	7	160	
Ca++	0.11	0.00	0.97	145.3	94.8	3	161	
Cl-	3.20	0.00	48.45	4198.4	97.2	1	166	
Mg++	0.203	0.005	2.947	267.0	97.3	23	167	
NO3-	0.06	0.00	0.52	79.6	96.7	11	165	
pH	5.33	4.10	6.77	6189.9	94.4	0	191	
K+	0.14	0.00	1.36	187.1	92.7	1	160	
Precip	-	0.0	38.1	1313.1	95.4	101	349	
Na+	1.76	0.00	26.28	2305.9	97.3	1	167	
SO4-- corr	0.09	-0.08	0.60	125.0	97.2	2	166	
SO4--	0.23	0.00	2.20	308.6	97.2	1	166	

NO0039R Kaarvatn Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.08	0.00	1.49	104.1	98.4	15	135	
Ca++	0.10	0.00	1.61	125.9	98.5	8	136	
Cl-	3.57	0.03	79.14	4436.0	98.9	0	139	
Mg++	0.228	0.005	4.935	284.0	98.9	14	139	
NO3-	0.05	0.00	0.81	63.1	98.9	10	139	
pH	5.26	4.45	6.56	6814.7	98.4	0	153	
K+	0.09	0.00	1.55	116.2	98.4	5	135	
Precip	-	0.0	46.5	1243.0	100.0	202	366	
Na+	1.99	0.02	45.72	2474.9	98.9	0	139	
SO4-- corr	0.09	-0.02	0.99	111.3	98.9	1	139	
SO4--	0.25	0.01	3.88	314.1	98.9	0	139	

NO0041R Osen Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.17	0.00	1.86	165.7	96.5	7	122	
Ca++	0.06	0.00	0.92	59.9	98.5	11	126	
Cl-	0.34	0.00	12.78	325.3	98.9	2	128	
Mg++	0.028	0.005	0.796	26.8	98.5	48	126	
NO3-	0.20	0.00	1.54	199.1	98.9	15	128	
pH	4.72	4.10	6.13	18383.0	96.6	0	124	
K+	0.06	0.00	0.70	59.5	96.5	19	122	
Precip	-	0.0	42.7	971.3	99.7	233	365	
Na+	0.19	0.00	7.02	181.0	98.9	3	127	
SO4-- corr	0.24	0.02	1.58	231.7	98.9	0	128	
SO4--	0.25	0.02	1.59	246.9	98.9	0	128	

NO0055R Karasjok Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.13	0.00	0.75	40.1	86.2	5	68	
Ca++	0.07	0.00	0.51	22.1	87.9	3	71	
Cl-	0.60	0.05	5.48	183.2	89.2	0	73	
Mg++	0.034	0.005	0.422	10.2	88.8	10	73	
NO3-	0.11	0.00	0.53	33.8	89.6	2	74	
pH	4.97	4.18	6.86	3279.6	91.4	0	100	
K+	0.19	0.02	1.33	57.2	84.8	0	66	
Precip	-	0.0	24.2	304.1	100.0	214	366	
Na+	0.38	0.03	3.82	114.8	89.2	0	73	
SO4-- corr	0.25	0.01	1.99	76.1	89.6	0	74	
SO4--	0.28	0.02	2.28	85.9	89.6	0	74	

NO0099R Lista Norway

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.49	0.00	6.90	807.7	97.6	17	177	
Ca++	1.28	0.03	30.70	2110.5	98.4	0	177	
Cl-	54.40	0.52	1350.20	89821.7	98.6	0	178	
Mg++	3.452	0.025	80.130	5699.4	98.6	0	178	
NO3-	0.64	0.04	5.71	1064.3	98.6	0	178	
pH	4.54	3.63	6.49	47273.7	98.4	0	200	
K+	1.22	0.04	29.75	2016.4	98.6	0	178	
Precip	-	0.0	40.4	1651.0	100.0	143	366	
Na+	30.75	0.29	749.10	50773.9	98.6	0	178	
SO4-- corr	0.44	-4.57	11.72	732.9	98.6	20	178	
SO4--	2.95	0.13	64.17	4871.5	98.6	0	178	

PL0002R Jarczew Poland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.72	0.10	9.20	418.1	99.2	0	153	
Ca++	0.26	0.00	3.70	149.5	98.9	9	143	
Cl-	0.44	0.00	11.30	253.8	99.2	2	153	
Mg++	0.043	0.005	0.654	25.0	98.9	0	143	
NO3-	0.50	0.08	7.56	290.3	99.2	0	153	
pH	4.61	3.31	7.42	14242.2	99.3	0	157	
K+	0.08	0.01	3.27	48.2	98.9	0	143	
Precip	-	0.0	45.2	579.7	100.0	182	366	
Na+	0.16	0.01	5.53	91.7	98.9	0	143	
SO4-- corr	0.80	0.10	10.41	462.6	99.2	0	153	
SO4--	0.82	0.10	10.73	474.6	99.2	0	153	

PL0003R Sniezka Poland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.46	0.02	5.08	473.0	98.3	0	214	
Ca++	0.76	0.10	6.70	776.8	98.2	0	210	
Cl-	1.18	0.20	12.80	1207.9	98.3	0	214	
Mg++	0.165	0.020	1.580	169.4	98.2	0	210	
NO3-	1.08	0.11	6.58	1107.5	98.3	0	214	
pH	4.46	3.57	6.49	35718.0	98.3	0	214	
K+	0.25	0.05	4.95	257.4	98.2	0	210	
Precip	-	0.0	37.9	1025.8	100.0	121	366	
Na+	0.70	0.07	12.80	714.7	98.2	0	210	
SO4-- corr	0.61	-0.15	7.78	629.5	98.3	4	214	
SO4--	0.69	0.09	7.94	704.1	98.3	0	214	

PL0004R Leba Poland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.50	0.04	10.43	298.6	98.2	0	143	
Ca++	0.19	0.00	10.80	114.6	98.2	12	143	
Cl-	1.38	0.10	30.10	822.0	98.2	0	143	
Mg++	0.100	0.003	1.593	59.7	98.2	0	143	
NO3-	0.50	0.03	8.77	294.3	98.2	0	143	
pH	4.64	3.65	7.01	13637.7	98.2	0	143	
K+	0.09	0.01	1.97	54.6	98.2	0	143	
Precip	-	0.0	26.3	594.3	100.0	179	366	
Na+	0.72	0.02	16.50	426.7	98.2	0	143	
SO4-- corr	0.51	0.04	6.58	303.2	98.2	0	143	
SO4--	0.57	0.04	7.03	339.6	98.2	0	143	

PL0005R Diabla Gora Poland

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.68	0.00	10.40	385.8	95.2	1	151	
Ca++	0.19	0.00	4.10	107.1	97.8	13	126	
Cl-	0.74	0.05	21.60	415.3	98.0	16	151	
Mg++	0.070	0.007	1.715	39.5	97.8	0	127	
NO3-	0.49	0.03	3.28	274.9	99.6	1	153	
pH	4.43	3.58	7.00	20913.6	99.8	0	157	
K+	0.31	0.01	15.26	174.9	97.1	0	124	
Precip	-	0.0	27.6	564.6	99.7	204	365	
Precip off	-	0.0	29.9	571.7	99.7	203	365	
Na+	0.29	0.01	8.59	163.6	97.7	0	126	
SO4-- corr	0.64	0.01	8.82	361.0	99.5	1	152	
SO4--	0.67	0.03	8.90	380.7	99.5	1	152	

PT0001R Braganca Portugal

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.16	0.01	1.45	153.2	81.8	20	53	
Ca++	1.78	0.05	23.70	1663.7	81.8	18	53	
Cl-	0.93	0.00	4.70	873.1	81.8	2	53	
Mg++	0.102	0.015	0.960	95.6	81.8	24	53	
NO3-	0.11	0.01	0.59	99.5	81.8	4	53	
pH	5.52	4.65	7.47	2819.2	81.8	0	53	
K+	0.08	0.04	0.66	77.3	81.8	41	53	
Precip off	-	0.0	77.9	935.5	100.0	228	366	
Na+	0.33	0.01	2.60	305.4	81.8	25	53	
SO4-- corr	0.38	-0.01	4.02	350.6	81.8	5	53	
SO4--	0.41	0.03	4.08	385.2	81.8	4	53	

PT0003R V. Do Castelo Portugal

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.13	0.01	3.15	243.1	91.6	22	99	
Ca++	0.30	0.05	5.30	573.4	91.6	16	99	
Cl-	5.20	0.20	31.90	9823.0	91.6	0	99	
Mg++	0.346	0.015	2.320	654.0	91.6	4	99	
NO3-	0.12	0.01	0.81	223.7	91.6	5	99	
pH	4.96	4.01	8.56	20803.5	91.4	0	98	
K+	0.12	0.04	4.61	234.0	91.6	60	99	
Precip off	-	0.0	63.3	1890.6	100.0	184	366	
Na+	2.74	0.07	23.59	5172.0	91.6	0	99	
SO4-- corr	0.28	-0.32	2.68	525.9	91.6	4	99	
SO4--	0.51	0.05	2.96	957.1	91.6	0	99	

PT0004R Monte Velho Portugal

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.13	0.01	2.47	73.3	88.8	13	31	
Ca++	0.50	0.05	8.60	286.5	88.8	3	31	
Cl-	6.55	1.00	28.10	3761.7	88.8	0	31	
Mg++	0.502	0.110	2.090	288.1	88.8	0	31	
NO3-	0.14	0.01	2.21	81.4	88.8	2	31	
pH	4.96	3.78	6.72	6256.9	88.8	0	31	
K+	0.16	0.04	3.65	93.6	88.8	16	31	
Precip off	-	0.0	57.8	574.4	100.0	311	366	
Na+	3.51	0.65	14.13	2014.7	88.8	0	31	
SO4-- corr	0.38	0.03	4.68	218.7	88.8	0	31	
SO4--	0.68	0.22	5.50	387.8	89.2	0	32	

RU0001R Janiskoski Russian Federation

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.21	0.00	2.37	99.4	100.0	30	116	
Ca++	0.12	0.01	1.59	60.1	100.0	1	116	
Cl-	1.70	0.04	16.54	822.8	100.0	0	116	
Mg++	0.055	0.001	0.503	26.5	100.0	3	116	
NO3-	0.10	0.00	1.20	46.8	100.0	21	116	
pH	5.14	4.29	7.62	3517.5	100.0	0	116	
K+	0.49	0.00	3.63	237.7	100.0	1	116	
Precip	-	0.0	18.0	483.2	99.7	250	365	
Na+	1.11	0.16	10.10	534.2	100.0	0	116	
SO4-- corr	0.25	-0.17	2.59	120.1	100.0	6	116	
SO4--	0.33	0.03	2.73	161.4	100.0	0	116	

RU0013R Pinega Russian Federation

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.17	0.00	2.46	80.3	100.0	30	155	
Ca++	0.26	0.02	1.82	124.5	98.1	0	150	
Cl-	0.51	0.00	4.25	242.2	100.0	1	155	
Mg++	0.066	0.001	0.500	31.6	98.1	4	150	
NO3-	0.14	0.00	1.24	65.8	100.0	28	155	
pH	4.99	4.07	7.33	4942.1	100.0	0	155	
K+	0.25	0.00	4.47	118.5	100.0	2	155	
Precip	-	0.0	33.0	477.7	100.0	211	366	
Na+	0.26	0.06	2.53	122.6	100.0	0	155	
SO4-- corr	0.34	-0.04	3.31	161.1	100.0	3	155	
SO4--	0.37	0.02	3.36	174.4	100.0	2	155	

RU0016R Shepeljovo Russian Federation

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.35	0.00	6.68	261.6	100.0	16	114	
Ca++	0.77	0.06	5.28	575.7	99.9	0	113	
Cl-	5.34	0.22	63.20	3977.1	100.0	0	114	
Mg++	0.320	0.006	3.250	238.3	100.0	0	114	
NO3-	0.40	0.00	8.18	294.4	100.0	5	114	
pH	5.14	4.35	7.80	5429.2	100.0	0	114	
K+	0.58	0.00	13.96	429.9	100.0	4	114	
Precip	-	0.0	54.9	745.4	100.0	252	366	
Na+	2.99	0.04	33.50	2226.0	100.0	0	114	
SO4-- corr	0.96	0.03	5.83	714.5	100.0	0	114	
SO4--	1.19	0.15	7.32	886.7	100.0	0	114	

RU0018R Danki Russian Federation

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.32	0.00	3.55	184.0	100.0	19	142	
Ca++	0.40	0.02	2.98	232.5	94.0	0	127	
Cl-	0.33	0.00	2.15	189.6	100.0	2	142	
Mg++	0.080	0.008	0.866	46.5	94.0	0	127	
NO3-	0.30	0.00	1.69	173.6	100.0	13	142	
pH	4.96	4.14	6.91	6411.0	99.8	0	141	
K+	0.23	0.00	3.29	135.9	100.0	7	142	
Precip	-	0.0	21.7	580.8	100.0	224	366	
Na+	0.21	0.02	1.63	120.3	100.0	0	142	
SO4-- corr	0.53	0.04	3.71	307.9	100.0	0	142	
SO4--	0.55	0.05	3.75	319.5	100.0	0	142	

SE0002R Rorvik Sweden

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.46	0.01	3.49	406.1	99.5	0	151	
Ca++	0.16	0.01	1.03	145.7	99.8	0	159	
Cl-	3.13	0.00	30.91	2774.3	99.9	1	160	
Mg++	0.222	0.000	2.020	196.4	99.8	2	159	
NO3-	0.57	0.03	4.08	509.6	99.9	0	160	
pH	4.45	3.68	6.12	31202.4	100.0	0	168	
K+	0.10	0.01	4.29	88.2	99.8	0	159	
Precip	-	0.0	27.3	886.1	100.0	198	366	
Na+	1.84	0.01	18.26	1629.0	98.6	0	158	
SO4-- corr	0.40	0.03	4.04	355.4	99.9	0	160	
SO4--	0.56	0.03	4.28	492.0	99.9	0	160	

SE0005R Bredkalen Sweden

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.09	0.00	1.74	76.4	100.0	1	53	W
Ca++	0.05	0.01	0.70	39.2	99.9	0	52	W
Cl-	0.13	0.00	2.78	104.3	100.0	1	53	W
Mg++	0.034	0.000	0.200	27.5	99.9	5	52	W
NO3-	0.14	0.03	1.53	108.7	100.0	0	53	W
pH	4.81	3.97	5.29	12556.1	100.0	0	55	W
K+	0.04	0.00	0.43	29.7	99.9	1	52	W
Precip	-	0.0	53.1	805.2	98.4	7	62	W
Na+	0.07	0.00	1.61	55.9	99.9	1	52	W
SO4-- corr	0.18	0.03	1.95	146.3	100.0	0	53	W
SO4--	0.19	0.04	1.97	151.0	100.0	0	53	W

SE0011R Vavihill Sweden

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.57	0.01	3.46	459.1	97.3	0	53	W
Ca++	0.12	0.02	0.52	101.0	97.3	0	53	W
Cl-	1.76	0.10	15.10	1422.5	97.3	0	53	W
Mg++	0.136	0.010	1.050	109.9	97.3	0	53	W
NO3-	0.54	0.01	3.30	436.3	97.3	0	53	W
pH	4.56	3.71	5.89	22314.6	97.3	0	53	W
K+	0.09	0.01	0.60	74.5	97.3	0	53	W
Precip	-	0.0	61.1	804.0	98.1	8	62	W
Na+	1.06	0.05	9.27	858.3	97.3	0	53	W
SO4-- corr	0.45	0.09	2.86	364.2	97.3	0	53	W
SO4--	0.54	0.14	2.93	435.7	97.3	0	53	W

SE0012R Aspvreten Sweden

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.39	0.07	0.95	12.9	100.0	0	7	
Ca++	0.36	0.04	1.06	11.9	100.0	0	7	
Cl-	0.61	0.13	2.17	20.3	100.0	0	7	
Mg++	0.052	0.010	0.130	1.7	100.0	0	7	
NO3-	0.50	0.16	0.68	16.6	100.0	0	7	
pH	4.56	4.45	4.92	912.7	100.0	0	7	
K+	0.05	0.03	0.07	1.6	100.0	0	7	
Precip	-	0.0	10.1	33.2	21.0	2	9	
Na+	0.31	0.04	1.38	10.4	100.0	0	7	
SO4-- corr	0.45	0.11	1.10	15.0	100.0	0	7	
SO4--	0.49	0.12	1.17	16.3	100.0	0	7	

SK0002R Chopok Slovakia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.53	0.03	2.97	549.9	96.1	0	163	
Ca++	0.58	0.01	4.31	609.3	95.9	0	162	
Cl-	0.50	0.04	4.92	523.6	95.9	0	162	
Mg++	0.098	0.007	0.891	102.3	96.1	0	163	
NO3-	0.48	0.07	3.57	498.3	96.1	0	163	
pH	4.55	3.47	6.70	29640.7	94.5	0	161	
K+	0.23	0.05	1.18	242.2	96.1	0	163	
Precip	-	0.1	48.5	1046.2	100.0	163	366	
Na+	0.32	0.04	3.80	334.0	96.1	0	163	
SO4-- corr	1.00	0.09	5.72	1045.9	96.1	0	163	
SO4--	1.03	0.12	5.77	1079.2	96.1	0	163	

SK0004R Stara Lesna Slovakia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.36	0.01	1.94	327.0	98.7	0	132	
Ca++	0.52	0.09	6.71	474.2	98.7	0	132	
Cl-	0.31	0.05	6.02	284.7	98.7	0	132	
Mg++	0.108	0.014	1.112	97.8	98.7	0	132	
NO3-	0.35	0.06	2.63	321.2	98.7	0	132	
pH	4.52	3.85	6.08	27472.6	97.4	0	130	
K+	0.19	0.02	1.95	171.9	98.7	0	132	
Precip	-	0.1	95.0	908.5	100.0	195	366	
Na+	0.20	0.02	4.31	180.7	98.7	0	132	
SO4-- corr	0.76	0.13	5.56	688.7	98.7	0	132	
SO4--	0.78	0.13	5.62	707.5	98.7	0	132	

SK0005R Liesek Slovakia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.31	0.03	2.17	277.8	97.2	0	129	
Ca++	0.49	0.08	3.87	434.8	97.2	0	129	
Cl-	0.46	0.07	4.99	404.1	97.2	0	129	
Mg++	0.079	0.011	1.176	70.5	97.2	0	129	
NO3-	0.36	0.01	2.36	321.7	97.2	0	129	
pH	4.50	3.84	5.99	28127.5	96.6	0	126	
K+	0.20	0.02	2.52	180.7	97.2	0	129	
Precip	-	0.1	36.5	888.1	100.0	177	366	
Na+	0.29	0.03	2.87	258.1	97.2	0	129	
SO4-- corr	0.69	0.14	4.65	616.8	97.2	0	129	
SO4--	0.72	0.15	4.70	641.8	97.2	0	129	

SK0006R Starina Slovakia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.38	0.03	2.00	333.3	95.4	0	134	
Ca++	0.50	0.08	5.84	436.5	95.4	0	134	
Cl-	0.43	0.05	3.27	377.0	95.4	0	134	
Mg++	0.079	0.011	0.460	69.3	95.4	0	134	
NO3-	0.48	0.05	3.04	422.6	95.4	0	134	
pH	4.44	3.71	6.84	32314.4	95.4	0	134	
K+	0.20	0.02	1.15	172.6	95.4	0	134	
Precip	-	0.1	62.2	881.7	100.0	207	366	
Na+	0.25	0.00	1.50	220.2	95.4	1	134	
SO4-- corr	0.79	0.14	4.19	697.2	95.4	0	134	
SO4--	0.82	0.15	4.32	720.5	95.4	0	134	

TR0001R Cubuk II Turkey

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.49	0.09	1.70	72.7	98.6	0	40	
Ca++	2.37	0.38	10.68	352.8	94.5	0	39	
Cl-	0.58	0.16	2.13	86.0	98.6	0	40	
Mg++	0.164	0.050	0.600	24.4	99.0	0	42	
NO3-	0.34	0.07	1.46	50.6	98.6	0	40	
pH	5.87	4.68	7.89	199.7	100.0	0	45	
K+	0.35	0.10	1.48	51.5	99.0	0	42	
Precip	-	0.0	21.1	148.6	72.1	221	264	
Na+	0.71	0.14	5.73	104.8	99.0	0	42	
SO4-- corr	0.92	0.14	3.54	136.5	98.6	0	40	
SO4--	0.97	0.16	3.85	144.7	98.6	0	40	

YU0005R Kamenicki Vis Yugoslavia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.76	0.04	22.17	327.2	98.5	0	64	
Ca++	1.23	0.28	14.88	529.5	90.1	0	51	
Cl-	3.09	0.60	12.25	1335.9	96.3	0	58	
Mg++	0.238	0.060	1.800	102.7	90.4	0	52	
NO3-	0.41	0.02	3.00	178.0	97.8	0	64	
pH	5.36	4.09	7.34	1873.0	100.0	0	70	
K+	0.53	0.13	6.64	227.9	90.4	0	52	
Precip	-	0.0	36.4	432.1	100.0	296	366	
Na+	0.88	0.17	6.75	380.9	90.4	0	52	
SO4-- corr	1.47	0.23	6.44	633.2	97.0	0	60	
SO4--	1.58	0.42	6.60	681.7	99.8	0	69	

YU0008R Zabljak Yugoslavia

January 2000 - December 2000

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.43	0.03	14.00	629.3	99.7	0	95	
Ca++	0.92	0.01	11.11	1333.0	99.6	0	94	
Cl-	1.24	0.05	7.00	1799.2	96.9	0	89	
Mg++	0.148	0.040	0.980	214.9	99.6	0	94	
NO3-	0.21	0.01	1.99	306.7	99.4	0	92	
pH	5.85	4.33	7.43	2061.9	100.0	0	98	
K+	0.22	0.07	3.38	318.6	99.6	0	94	
Precip	-	0.0	128.4	1450.0	100.0	268	366	
Na+	0.65	0.08	3.30	938.5	99.6	0	94	
SO4-- corr	0.69	-0.08	5.09	1001.4	99.7	1	95	
SO4--	0.76	0.08	5.20	1106.6	100.0	0	98	

Annex 3

Annual statistics on gases and aerosol data

AT0002R Illmitz Austria

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.60	1.57	2.24	1.71	0.49	0.97	2.09	6.07	10.02	99.5	0	364	
SO4--	1.02	0.62	0.83	2.02	0.04	0.26	0.91	2.30	2.94	87.4	0	320	
SO2	1.19	0.98	0.91	2.11	0.00	0.25	0.88	3.17	6.69	87.7	1	321	
SO2	1.49	1.70	0.94	2.67	0.06	0.17	0.94	5.02	11.33	94.0	0	344	
NH3+NH4+	2.68	1.51	2.38	1.62	0.56	1.05	2.38	4.90	17.98	87.2	0	319	
HNO3+NO3	0.67	0.97	0.53	1.82	0.13	0.20	0.52	1.32	14.98	87.4	0	320	

AT0004R St. Koloman Austria

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.64	1.24	1.33	1.94	0.13	0.43	1.37	4.07	10.82	97.8	0	358	
SO2	0.37	0.36	0.28	2.16	0.01	0.08	0.30	0.77	5.66	99.5	0	364	

AT0005R Vorhegg Austria

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.89	0.56	0.77	1.70	0.15	0.32	0.76	1.79	4.23	98.1	0	359	
SO2	0.40	0.52	0.25	3.18	0.00	0.00	0.22	1.34	4.55	98.9	18	362	

BE0001R Offagne Belgium

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	3.80	2.13	3.36	1.62	1.13	1.61	3.20	7.99	13.83	97.8	0	358	

BE0032R Eupen Belgium

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	4.31	2.94	3.60	1.77	1.83	1.83	3.19	10.74	21.17	98.1	0	359	

BE0035R Vezin Belgium

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	5.84	2.67	5.32	1.53	1.44	2.71	5.10	11.38	17.56	95.9	0	351	

CH0001G Jungfraujoch Switzerland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.10	0.17	0.06	2.56	0.01	0.02	0.05	0.36	1.54	82.8	0	303	
PM10	3.38	4.57	1.73	3.15	0.50	0.50	1.60	10.43	35.40	97.8	130	358	
SO4--	0.12	0.16	0.07	2.94	0.02	0.02	0.07	0.47	1.25	99.5	122	364	
SO2	0.06	0.06	0.04	2.28	0.01	0.01	0.04	0.17	0.75	98.4	0	360	

CH0002R Payerne Switzerland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	4.85	2.59	4.22	1.72	0.83	1.60	4.36	9.89	15.83	94.8	0	347	
PM10	19.78	12.31	16.51	1.85	3.10	5.78	17.90	43.60	71.50	97.3	0	356	
SO4--	0.60	0.38	0.48	1.97	0.06	0.14	0.53	1.28	2.35	98.9	0	362	
SO2	0.73	0.45	0.58	2.07	0.06	0.13	0.68	1.50	2.61	93.7	0	343	

CH0003R Tanikon Switzerland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	4.35	2.17	3.89	1.60	1.11	1.90	3.84	8.72	14.32	97.3	0	356	
PM10	17.90	10.05	15.48	1.73	2.20	6.04	16.40	36.91	61.10	99.5	0	364	

CH0004R Chaumont Switzerland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.24	1.04	2.02	1.60	0.45	0.86	2.09	4.13	7.38	94.8	0	347	
PM10	10.24	6.74	8.15	2.03	1.40	2.36	8.90	22.71	45.70	100.0	0	366	
SO2	0.46	0.39	0.32	2.39	0.02	0.08	0.34	1.30	2.35	97.0	0	355	

CH0005R Rigi Switzerland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.39	1.24	2.18	1.50	0.77	1.14	2.15	3.99	12.16	96.2	0	352	
PM10	11.01	7.43	8.60	2.10	1.39	2.37	8.75	24.38	37.50	99.5	0	364	
SO4--	0.53	0.38	0.41	2.12	0.02	0.12	0.43	1.37	1.84	99.2	0	363	
SO2	0.31	0.21	0.26	1.81	0.05	0.09	0.26	0.67	1.89	97.0	0	355	
NH3+NH4+	1.67	1.24	1.19	2.46	0.10	0.24	1.38	4.03	6.35	99.5	0	364	
HNO3+NO3	0.65	0.49	0.49	2.29	0.03	0.11	0.52	1.62	2.70	99.5	0	364	

CZ0001R Svratouch Czech Republic

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	1.70	0.77	1.55	1.54	0.36	0.65	1.58	2.88	7.30	99.5	0	364	
NH4+	0.90	0.66	0.70	2.06	0.07	0.21	0.73	2.22	4.25	99.5	0	364	
NO3-	0.56	0.45	0.40	2.49	0.01	0.07	0.47	1.37	3.32	99.5	0	364	
HNO3	0.32	0.40	0.20	2.86	0.01	0.03	0.26	0.72	5.22	99.5	0	364	
NO2	1.29	1.16	0.86	2.65	0.10	0.10	0.90	3.62	5.80	92.1	0	337	
SO2	1.84	1.56	1.38	2.19	0.10	0.30	1.40	4.40	11.70	98.4	0	360	
NH3+NH4+	2.60	1.05	2.42	1.46	0.71	1.34	2.38	4.45	9.47	99.5	0	364	
HNO3+NO3	0.88	0.61	0.70	2.05	0.07	0.16	0.78	1.92	5.81	99.5	0	364	

CZ0003R Kosetice Czech Republic

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	2.04	0.93	1.84	1.64	0.08	0.72	1.96	3.36	8.19	100.0	0	366	
NH4+	1.02	0.83	0.81	1.97	0.13	0.28	0.85	2.55	6.53	100.0	0	366	
NO3-	0.63	0.46	0.45	2.65	0.02	0.05	0.54	1.39	3.04	100.0	0	366	
HNO3	0.52	0.44	0.33	3.01	0.02	0.03	0.43	1.40	3.06	98.9	0	362	
NO2	1.60	1.24	1.13	2.52	0.10	0.20	1.30	4.10	7.70	98.1	0	359	
SO2	1.23	1.25	0.80	2.60	0.10	0.10	0.80	3.58	10.60	98.9	0	362	
NH3+NH4+	3.06	1.27	2.86	1.43	0.98	1.64	2.79	5.19	10.58	100.0	0	366	
HNO3+NO3	1.15	0.73	0.93	2.03	0.10	0.22	1.03	2.47	4.68	98.9	0	362	

DE0001R Westerland Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.12	1.64	1.64	2.08	0.15	0.57	1.59	5.27	12.42	99.2	0	363	
PM10	20.46	9.41	18.51	1.57	6.00	9.00	19.00	40.00	62.00	92.6	0	339	

DE0002R Langenbrugge Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.49	1.65	2.10	1.80	0.09	0.99	1.89	5.84	11.19	99.2	1	363	
PM10	16.52	9.55	14.46	1.66	4.00	7.00	14.00	36.00	77.00	98.9	0	362	
SO4--	11.38	7.55	9.75	1.71	3.00	4.00	10.00	24.85	63.00	50.0	0	183	
SO2	0.52	0.74	0.30	2.73	0.05	0.05	0.30	1.67	7.15	97.8	0	358	

DE0003R Schauinsland Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.17	0.53	1.09	1.44	0.24	0.66	1.05	2.01	5.76	98.4	0	360	
PM10	10.46	7.39	7.75	2.32	0.00	2.00	9.00	24.25	38.00	91.5	10	335	
SO2	0.13	0.20	0.08	2.20	0.05	0.05	0.05	0.45	1.85	82.5	0	302	

DE0004R Deuselbach Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.03	0.99	1.85	1.57	0.03	1.05	1.74	3.81	8.34	100.0	0	366	
PM10	14.81	7.05	13.26	1.61	4.00	6.00	14.00	29.00	44.00	98.9	0	362	
SO4--	10.74	5.55	9.44	1.68	2.00	4.00	10.00	21.50	36.00	46.4	0	170	
SO2	0.60	0.82	0.25	3.95	0.05	0.05	0.25	2.20	5.65	99.7	0	365	

DE0005R Brotjacklriegel Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.84	0.77	1.72	1.43	0.72	1.05	1.62	3.48	6.24	100.0	0	366	
PM10	11.50	7.55	9.18	2.04	0.50	3.00	10.00	26.00	56.00	100.0	1	366	
SO2	0.25	0.45	0.12	2.90	0.05	0.05	0.10	0.95	5.15	100.0	0	366	

DE0007R Neuglobsow Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.13	1.46	1.78	1.83	0.03	0.99	1.56	5.21	8.91	99.7	0	365	
PM10	17.36	10.15	14.91	1.75	2.00	6.00	15.00	38.55	67.00	95.4	0	349	
SO2	0.51	0.66	0.25	3.32	0.05	0.05	0.25	2.01	3.60	100.0	0	366	

DE0008R Schmucke Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.63	0.90	1.47	1.54	0.54	0.82	1.38	3.20	8.97	99.5	0	364	
PM10	12.05	7.40	10.02	1.88	0.50	3.00	11.00	28.80	44.00	99.5	1	364	
SO2	0.43	0.56	0.24	2.91	0.00	0.05	0.20	1.49	4.10	99.2	1	363	

DE0009R Zingst Germany

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	2.15	1.14	1.93	1.57	0.72	0.99	1.86	4.39	11.52	100.0	0	366	
PM10	19.62	10.49	17.30	1.65	5.00	8.00	17.00	41.00	71.00	93.2	0	341	
SO2	0.67	0.60	0.53	1.94	0.10	0.20	0.50	1.75	6.85	100.0	0	366	

DK0003R Tange Denmark

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Na+	1.23	1.16	0.80	2.60	0.05	0.19	0.76	3.71	5.76	89.6	0	328	
SO4--	0.81	0.48	0.69	1.75	0.07	0.31	0.69	1.85	2.87	89.3	0	327	
SO2	0.32	0.30	0.21	2.63	0.00	0.05	0.22	0.86	1.96	89.6	5	328	
NH3+NH4+	2.58	1.82	2.10	1.89	0.36	0.78	2.01	6.26	12.02	89.6	0	328	
HNO3+NO3	0.90	0.76	0.64	2.40	0.06	0.14	0.66	2.37	3.89	89.3	0	327	

DK0005R Keldsnor Denmark

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Na+	2.03	2.58	1.55	2.08	0.06	0.43	1.69	4.40	45.21	98.1	0	359	
SO4--	1.00	0.56	0.85	1.80	0.03	0.31	0.86	2.15	3.18	98.4	0	360	
SO2	0.63	0.57	0.42	2.62	0.02	0.06	0.47	1.76	4.78	98.4	0	360	
NH3+NH4+	2.66	1.59	2.22	1.86	0.39	0.73	2.22	5.48	11.68	98.1	0	359	
HNO3+NO3	1.17	0.86	0.87	2.28	0.06	0.22	0.95	2.78	4.78	98.1	0	359	

DK0008R Anholt Denmark

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.80	1.40	1.38	2.11	0.16	0.42	1.39	4.26	9.36	95.6	0	350	
Na+	1.76	1.28	1.34	2.19	0.14	0.32	1.38	4.25	6.28	97.0	0	355	
SO4--	0.82	0.50	0.70	1.76	0.14	0.28	0.67	1.72	3.17	97.0	0	355	
SO2	0.55	0.47	0.37	2.57	0.03	0.07	0.42	1.47	3.12	97.0	0	355	
NH3+NH4+	1.29	1.07	0.92	2.39	0.10	0.19	0.97	3.64	6.56	97.0	0	355	
HNO3+NO3	0.88	0.72	0.61	2.44	0.04	0.14	0.65	2.35	3.52	97.0	0	355	

EE0009R Lahemaa Estonia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.49	0.44	0.38	2.00	0.01	0.18	0.36	1.21	3.91	99.5	4	364	
SO4--	0.33	0.18	0.29	1.72	0.04	0.10	0.30	0.60	2.05	99.5	9	364	
SO2	0.61	0.67	0.40	2.63	0.04	0.04	0.39	1.85	6.80	99.2	20	363	

EE0011R Vilsandi Estonia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.14	0.64	1.00	1.70	0.36	0.37	0.98	2.40	2.98	7.9	0	29	
SO2	0.26	0.23	0.18	2.39	0.03	0.04	0.19	0.73	1.47	97.5	12	357	

ES0001R Toledo Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	45.1	165	165		
NH4+	0.28	0.20	0.22	2.11	0.04	0.06	0.23	0.69	1.09	45.1	0	165		
NO2	0.73	1.05	0.73	2.60	0.00	0.00	0.41	2.41	7.83	45.1	51	165		
PM10	19.67	15.05	14.94	2.13	2.00	4.20	13.00	50.80	79.00	44.8	0	164		
SO4--	0.61	0.35	0.53	1.70	0.15	0.22	0.52	1.25	2.56	45.1	0	165		
SO2	0.19	0.34	0.50	2.46	0.00	0.00	0.00	0.90	2.10	45.6	87	167		
NH3+NH4+	0.71	0.94	0.22	5.69	0.01	0.02	0.20	2.75	3.94	46.4	26	170		
HNO3+NO3	0.29	0.32	0.14	4.44	0.01	0.01	0.16	1.05	1.60	46.4	34	170		

ES0003R Roquetas Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.1	-	-	0.0	0.0	0.0	0.0	1.0	42.3	152	155		
NH4+	0.43	0.46	0.32	2.21	0.00	0.07	0.29	1.28	3.71	42.3	4	155		
NO2	2.74	1.61	2.30	1.90	0.00	0.65	2.39	5.83	9.61	43.7	2	160		
PM10	41.83	24.41	34.44	1.66	0.00	13.75	38.00	81.00	202.00	42.3	4	155		
SO4--	1.31	0.70	1.18	1.66	0.00	0.38	1.14	2.81	3.19	42.3	4	155		
SO2	1.00	1.39	0.60	3.40	0.00	0.00	0.48	3.26	8.39	43.7	18	160		
NH3+NH4+	0.95	0.52	0.79	2.14	0.02	0.29	0.89	1.87	3.07	43.7	0	160		
HNO3+NO3	0.85	0.83	0.64	2.07	0.14	0.19	0.63	2.00	7.25	44.3	0	162		

ES0004R Logrono Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.1	-	-	0.0	0.0	0.0	0.0	1.0	93.4	336	342		
NH4+	0.40	0.45	0.26	2.45	0.03	0.07	0.25	1.23	3.18	93.4	0	342		
NO2	3.58	2.71	2.59	2.44	0.04	0.61	2.92	9.10	14.50	98.4	0	360		
PM10	33.23	20.52	27.43	1.90	6.00	9.00	29.00	72.00	113.00	91.3	0	334		
SO4--	1.22	0.85	0.98	1.94	0.22	0.32	0.98	2.76	6.23	93.4	0	342		
SO2	0.47	0.62	0.55	2.55	0.00	0.00	0.22	1.68	3.65	98.6	110	361		
NH3+NH4+	0.77	1.25	0.28	4.86	0.01	0.02	0.31	2.87	10.07	96.2	24	352		
HNO3+NO3	0.17	0.33	0.05	4.55	0.01	0.01	0.08	1.00	2.63	96.2	136	352		

ES0005R Noia Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.2	-	-	0.0	0.0	0.0	0.0	1.0	39.6	141	145		
NH4+	0.32	0.34	0.20	2.67	0.02	0.04	0.19	1.08	1.80	39.6	0	145		
NO2	1.12	1.04	0.73	3.28	0.00	0.00	0.70	3.09	4.65	43.2	12	158		
PM10	19.06	16.20	14.95	1.94	4.00	5.00	14.00	58.60	97.00	39.3	0	144		
SO4--	0.86	0.64	0.67	2.05	0.15	0.20	0.72	2.09	3.78	39.6	0	145		
SO2	3.72	5.37	1.82	3.70	0.00	0.00	1.61	16.30	26.48	43.2	29	158		
NH3+NH4+	0.10	0.13	0.06	2.62	0.01	0.02	0.06	0.35	0.93	39.6	29	145		
HNO3+NO3	0.47	0.36	0.34	2.53	0.01	0.10	0.37	1.20	1.97	40.2	4	147		

ES0007R Viznar Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	97.0	355	355		
NH4+	0.39	0.87	0.25	2.47	0.03	0.05	0.27	0.91	16.00	97.3	0	356		
NO2	3.17	1.92	2.59	2.00	0.09	0.76	2.91	6.81	14.07	99.5	0	364		
PM10	43.52	27.96	34.33	2.11	2.00	9.00	41.00	93.75	178.00	94.3	0	345		
SO4--	0.96	0.56	0.82	1.80	0.18	0.29	0.84	2.07	3.61	97.3	0	356		
SO2	0.50	0.63	0.51	2.60	0.00	0.00	0.26	1.74	4.65	99.5	91	364		
NH3+NH4+	1.63	1.52	1.13	2.54	0.02	0.17	1.28	4.35	12.34	94.0	0	344		
HNO3+NO3	0.50	0.32	0.41	2.02	0.01	0.15	0.46	1.06	2.37	95.4	3	349		

ES0008R Niembro Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	98.1	359	359		
NH4+	0.48	0.75	0.23	3.21	0.02	0.04	0.21	2.14	5.44	98.1	0	359		
NO2	1.63	1.33	1.21	2.30	0.00	0.22	1.30	4.03	10.73	99.7	3	365		
PM10	28.04	15.12	24.32	1.73	4.00	9.25	25.00	59.75	82.00	94.3	0	345		
SO4--	1.47	1.38	1.08	2.12	0.24	0.34	1.02	4.29	9.26	98.1	0	359		
SO2	2.42	2.85	1.37	3.42	0.00	0.04	1.61	7.12	30.96	100.0	16	366		
NH3+NH4+	2.53	2.24	1.54	3.12	0.02	0.21	1.90	6.88	12.22	99.7	1	365		
HNO3+NO3	0.52	0.44	0.38	2.33	0.01	0.11	0.39	1.34	2.84	100.0	4	366		

ES0009R Campisabalos Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.1	-	-	0.0	0.0	0.0	0.0	1.0	95.6	349	350		
NH4+	0.25	0.25	0.17	2.50	0.01	0.04	0.17	0.72	2.02	95.6	0	350		
NO2	0.39	0.56	0.49	2.36	0.00	0.00	0.20	1.27	5.58	97.3	110	356		
PM10	20.06	18.57	13.48	2.49	1.00	3.00	13.00	57.00	107.00	91.0	0	333		
SO4--	0.69	0.47	0.55	1.95	0.12	0.20	0.52	1.61	2.68	95.6	0	350		
SO2	0.19	0.46	0.55	2.37	0.00	0.00	0.00	0.86	4.74	97.5	204	357		
NH3+NH4+	0.25	0.28	0.17	2.50	0.01	0.02	0.18	0.67	2.44	98.9	12	362		
HNO3+NO3	0.17	0.12	0.12	2.87	0.00	0.01	0.15	0.39	0.87	99.2	46	363		

ES0010R Cabo de Creus Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.1	-	-	0.0	0.0	0.0	0.0	1.0	95.6	349	350		
NH4+	0.30	0.31	0.20	2.48	0.00	0.05	0.17	0.91	2.31	95.6	2	350		
NO2	1.09	1.15	0.74	2.68	0.00	0.04	0.78	3.18	8.13	99.5	13	364		
PM10	37.24	18.07	33.16	1.56	0.00	16.00	33.00	74.00	126.00	91.8	2	336		
SO4--	1.31	0.79	1.11	1.79	0.00	0.44	1.07	2.91	4.31	95.6	1	350		
SO2	0.10	0.29	0.69	2.21	0.00	0.00	0.00	0.51	2.52	99.5	274	364		
NH3+NH4+	1.77	1.38	1.16	3.43	0.00	0.03	1.52	4.50	9.87	93.4	11	342		
HNO3+NO3	0.10	0.09	0.06	3.26	0.00	0.01	0.09	0.25	0.66	96.4	98	353		

ES0011R Barcarrola Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	95.9	351	351		
NH4+	0.25	0.26	0.17	2.49	0.00	0.04	0.16	0.76	1.64	95.9	4	351		
NO2	1.46	0.98	1.18	2.20	0.00	0.13	1.39	2.82	6.52	97.8	9	358		
PM10	28.82	20.08	22.32	2.01	0.00	7.00	23.00	67.25	107.00	91.5	4	335		
SO4--	0.74	0.51	0.63	1.82	0.00	0.24	0.63	1.75	3.56	95.9	4	351		
SO2	0.40	0.66	0.47	2.70	0.00	0.00	0.14	1.49	4.68	98.1	117	359		
NH3+NH4+	1.19	0.96	0.82	2.82	0.00	0.08	0.94	2.91	6.13	95.4	7	349		
HNO3+NO3	0.19	0.17	0.14	2.65	0.00	0.01	0.15	0.50	1.77	98.9	37	362		

ES0012R Zarra Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	98.4	360	360		
NH4+	0.27	0.25	0.20	2.29	0.02	0.05	0.19	0.79	1.34	98.4	0	360		
NO2	0.74	1.25	0.47	3.06	0.00	0.00	0.30	3.46	8.74	99.7	54	365		
PM10	26.15	17.36	20.64	2.07	3.00	5.70	22.00	57.00	103.00	96.7	0	354		
SO4--	0.94	0.62	0.76	1.95	0.16	0.24	0.79	2.20	3.76	98.4	0	360		
SO2	0.21	0.49	0.54	2.48	0.00	0.00	0.00	1.00	6.57	100.0	199	366		
NH3+NH4+	2.30	1.63	1.82	2.10	0.00	0.53	1.87	5.21	9.89	99.2	1	363		
HNO3+NO3	0.40	0.23	0.34	1.93	0.01	0.12	0.36	0.82	1.59	99.2	3	363		

ES0013R Penausende Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.1	0.6	-	-	0.0	0.0	0.0	0.0	8.0	42.3	153	155		
NH4+	0.28	0.40	0.14	2.99	0.02	0.03	0.12	1.04	2.46	42.3	0	155		
NO2	0.54	0.60	0.59	2.44	0.00	0.00	0.35	1.68	4.00	41.5	39	152		
PM10	16.97	14.33	12.09	2.34	2.00	3.00	13.00	48.00	69.00	41.3	0	151		
SO4--	0.72	0.89	0.51	2.18	0.13	0.17	0.47	1.84	9.26	42.3	0	155		
SO2	0.49	0.83	0.75	2.37	0.00	0.00	0.04	2.21	4.70	41.5	74	152		
NH3+NH4+	0.75	0.82	0.50	2.34	0.06	0.12	0.49	2.37	6.08	40.7	0	149		
HNO3+NO3	0.16	0.14	0.10	3.12	0.01	0.01	0.11	0.45	0.85	43.7	25	160		

ES0014R Els Torms Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	23.2	85	85		
NH4+	0.18	0.23	0.14	2.08	0.00	0.03	0.12	0.45	1.84	23.2	2	85		
NO2	2.14	0.91	1.93	1.60	0.57	0.75	1.98	3.57	4.39	16.7	0	61		
PM10	26.67	14.36	22.80	1.58	0.00	9.25	23.00	53.75	99.00	23.2	2	85		
SO4--	0.69	0.49	0.58	1.86	0.00	0.21	0.51	1.79	2.06	23.2	2	85		
SO2	0.11	0.19	0.41	2.49	0.00	0.00	0.00	0.48	1.04	16.7	32	61		
NH3+NH4+	1.44	1.20	1.09	2.20	0.00	0.21	1.14	3.67	7.29	24.9	2	91		
HNO3+NO3	0.32	0.27	0.25	2.18	0.00	0.08	0.25	0.93	1.53	24.0	2	88		

ES0015R Risco Llano Spain

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	20.2	74	74		
NH4+	0.05	0.06	0.23	2.67	0.00	0.00	0.03	0.19	0.29	20.2	32	74		
NO2	0.37	0.57	0.52	2.72	0.00	0.00	0.09	1.69	2.35	15.6	23	57		
PM10	5.66	7.18	3.35	2.26	0.00	0.00	5.00	20.00	36.00	19.9	32	73		
SO4--	0.21	0.24	0.54	1.66	0.00	0.00	0.18	0.54	1.15	20.2	32	74		
SO2	0.64	1.68	0.75	2.75	0.00	0.00	0.00	3.48	10.61	15.8	32	58		
NH3+NH4+	0.50	0.68	0.79	1.75	0.00	0.00	0.29	1.88	3.89	21.0	32	77		
HNO3+NO3	0.18	0.26	0.40	2.08	0.00	0.00	0.11	0.60	1.62	22.1	32	81		

FI0009R Uto Finland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.59	0.44	0.44	2.33	0.01	0.11	0.49	1.40	2.42	100.0	0	366	
SO2	0.37	0.26	0.30	2.06	0.01	0.08	0.31	0.93	1.63	100.0	0	366	
NH3+NH4+	0.49	0.43	0.32	2.59	0.01	0.06	0.32	1.38	2.47	99.7	0	365	
HNO3+NO3	0.41	0.30	0.29	2.44	0.00	0.06	0.33	0.96	1.72	100.0	0	366	

FI0017R Virolahti II Finland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.67	0.49	0.51	2.23	0.00	0.13	0.57	1.67	2.62	100.0	0	366	
SO2	0.66	0.81	0.40	2.69	0.03	0.07	0.42	2.11	6.56	99.7	0	365	
NH3+NH4+	0.94	0.74	0.69	2.30	0.05	0.16	0.78	2.56	4.25	100.0	0	366	
HNO3+NO3	0.28	0.20	0.21	2.23	0.01	0.05	0.22	0.64	1.06	99.7	0	365	

FI0022R Oulanka Finland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.40	0.32	0.29	2.33	0.01	0.06	0.32	1.04	2.00	99.5	0	364	
SO2	0.31	0.47	0.13	3.82	0.01	0.01	0.11	1.28	3.60	99.5	0	364	
NH3+NH4+	0.18	0.19	0.11	2.60	0.01	0.03	0.10	0.59	1.32	99.2	0	363	
HNO3+NO3	0.07	0.06	0.05	2.39	0.00	0.01	0.05	0.17	0.50	99.5	0	364	

FI0037R Ahtari II Finland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.42	0.35	0.31	2.35	0.00	0.08	0.32	1.20	1.97	98.1	0	359	
SO2	0.22	0.29	0.14	2.73	0.01	0.03	0.13	0.70	2.44	100.0	0	366	
NH3+NH4+	0.34	0.28	0.25	2.12	0.03	0.08	0.25	0.89	1.84	99.7	0	365	
HNO3+NO3	0.16	0.12	0.12	2.24	0.00	0.03	0.12	0.39	0.80	98.1	0	359	

FR0003R La Crouzille France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.49	0.45	0.47	1.91	0.00	0.00	0.38	1.35	3.77	91.0	39	333	
SO2	0.56	0.59	0.49	2.13	0.00	0.00	0.40	1.69	4.00	89.1	136	326	

FR0005R La Hague France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.60	0.41	0.52	1.82	0.00	0.16	0.46	1.53	2.15	89.3	10	327	
SO2	0.74	0.72	0.53	2.34	0.00	0.17	0.52	2.32	3.59	89.1	113	326	

FR0008R Donon France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.42	0.25	0.35	1.91	0.04	0.12	0.37	0.90	1.57	97.5	3	357	
SO2	0.51	0.47	0.39	2.05	0.12	0.14	0.43	1.23	5.14	97.0	98	355	

FR0009R Revin France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.79	0.50	0.69	1.73	0.00	0.28	0.64	1.79	3.55	94.0	5	344	
SO2	0.75	0.66	0.54	2.23	0.12	0.15	0.54	2.16	4.20	95.9	73	351	

FR0010R Morvan France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.47	0.32	0.39	1.96	0.00	0.12	0.38	1.12	1.78	80.6	6	295	
SO2	0.42	0.34	0.33	1.92	0.14	0.16	0.32	1.00	2.09	79.8	145	292	

FR0012R Iraty France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.57	0.44	0.45	2.14	0.00	0.10	0.44	1.41	2.72	95.4	12	349	
SO2	0.60	0.49	0.46	2.14	0.00	0.15	0.47	1.69	2.59	94.8	124	347	

FR0013R Peyrusse Vieille France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.56	0.44	0.45	2.04	0.00	0.12	0.43	1.47	2.70	99.5	9	364	
SO2	0.55	0.41	0.44	2.07	0.00	0.14	0.45	1.39	2.08	99.2	99	363	

FR0014R Montandon France

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.41	0.28	0.33	1.95	0.00	0.11	0.33	0.97	1.57	99.5	2	364	
SO2	0.26	0.17	0.22	1.75	0.00	0.13	0.16	0.62	0.86	98.9	200	362	

GB0002R Eskdalemuir United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.44	0.36	0.34	2.05	0.05	0.12	0.33	1.21	2.10	94.3	1	345	
SO2	0.35	0.37	0.24	2.26	0.04	0.06	0.22	1.11	2.76	91.8	72	336	
NH3+NH4+	0.60	0.55	0.42	2.49	0.00	0.12	0.41	1.90	3.25	90.7	4	332	
HNO3+NO3	0.25	0.29	0.16	2.48	0.00	0.04	0.15	0.81	2.29	91.3	1	334	

GB0004R Stoke Ferry United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.82	0.63	0.66	1.89	0.14	0.25	0.62	2.04	5.24	92.6	0	339	
SO2	1.14	1.07	0.86	2.08	0.09	0.27	0.82	2.94	10.99	94.8	3	347	

GB0006R Lough Navar United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.40	0.41	0.29	2.12	0.03	0.11	0.25	1.22	2.64	98.4	0	360	
SO2	0.22	0.19	0.17	1.95	0.05	0.06	0.16	0.56	1.44	95.9	67	351	

GB0007R Barcomb Mills United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.79	0.58	0.61	2.10	0.05	0.17	0.61	2.05	3.07	94.3	0	345	
SO2	0.85	0.71	0.66	2.04	0.06	0.22	0.61	2.15	5.43	90.4	4	331	

GB0013R Yarner Wood United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.50	0.49	0.35	2.29	0.04	0.11	0.30	1.52	3.15	92.6	0	339	
SO2	0.42	0.49	0.28	2.38	0.05	0.06	0.22	1.46	3.21	93.4	28	342	

GB0014R High Muffles United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.61	0.44	0.50	1.83	0.09	0.20	0.48	1.45	3.35	97.8	0	358	
SO2	1.55	1.91	0.89	2.88	0.10	0.17	0.86	5.23	15.28	96.2	0	352	

GB0015R Strathvaich Dam United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.24	0.23	0.17	2.19	0.03	0.05	0.17	0.72	1.59	100.0	0	366	
SO2	0.18	0.17	0.14	1.89	0.04	0.06	0.14	0.50	1.37	97.8	117	358	

GB0016R Glen Dye United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.38	0.33	0.28	2.21	0.03	0.08	0.27	1.03	2.19	98.9	0	362	
SO2	0.35	0.40	0.24	2.26	0.06	0.09	0.22	1.02	3.65	95.1	100	348	

GB0036R Harwell United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	3.55	2.82	2.73	2.09	0.30	0.80	2.80	8.65	20.30	85.0	0	311	

GB0037R Ladybower United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	3.43	2.21	2.84	1.87	0.50	1.00	2.90	7.00	14.50	94.3	0	345	

GB0038R Lullington Heath United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	3.74	2.51	3.12	1.80	0.70	1.20	3.00	9.00	14.40	90.2	0	330	

GB0043R Narberth United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.72	1.76	1.30	1.97	0.10	0.60	1.10	5.78	11.80	73.2	0	268	

GB0045R Wicken Fen United Kingdom

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	4.23	2.82	3.48	1.89	0.40	1.14	3.45	10.56	15.40	84.4	0	309	

GR0001R Aliartos Greece

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.27	0.16	0.24	1.77	0.00	0.06	0.23	0.57	0.97	27.3	2	100	
NO2	4.10	1.97	3.40	2.10	0.30	0.30	4.10	7.60	9.70	60.1	0	220	
O3	38.61	23.86	31.83	1.88	10.00	11.00	30.00	83.56	97.96	46.2	0	169	
SO4--	0.94	0.40	0.84	1.70	0.10	0.34	0.92	1.60	2.04	27.3	0	100	
SO2	2.64	4.50	1.27	3.03	0.09	0.27	1.00	16.70	20.50	51.4	0	188	

HU0002R K-Puszta Hungary

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	1.60	0.96	1.15	2.86	0.02	0.10	1.59	3.24	4.26	95.1	1	348	
NH4+	1.48	0.98	1.08	2.82	0.01	0.25	1.25	3.28	5.19	95.1	2	348	
NO3-	0.62	0.60	0.40	2.81	0.01	0.10	0.41	1.90	3.41	95.1	0	348	
HNO3	0.27	0.20	0.21	2.18	0.01	0.06	0.23	0.57	1.56	95.1	0	348	
NO2	1.61	0.87	1.38	1.78	0.05	0.60	1.41	3.25	5.29	98.4	0	360	
SO4--	1.65	1.05	1.28	2.51	0.01	0.44	1.49	3.55	6.72	95.1	0	348	
SO2	2.87	3.07	1.70	3.48	0.01	0.26	1.92	7.98	26.29	94.8	0	347	
NH3+NH4+	3.08	1.34	2.62	2.11	0.05	0.89	3.06	5.42	7.34	95.1	1	348	
HNO3+NO3	0.89	0.64	0.70	2.17	0.02	0.26	0.68	2.18	3.64	95.1	0	348	

IE0002R Turlough Hill Ireland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.35	0.91	0.20	2.82	0.00	0.02	0.19	1.08	15.64	93.2	5	341	

IE0003R The Burren Ireland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.27	0.30	0.19	2.38	0.00	0.04	0.16	0.83	2.30	86.1	4	315	

IE0004R Ridge Of Capard Ireland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.22	0.27	0.14	2.46	0.00	0.05	0.12	0.64	2.26	95.4	1	349	

IS0002R Irafoss Iceland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.17	0.15	0.11	2.60	0.00	0.02	0.12	0.46	1.00	94.8	3	347	

IT0001R Montelibretti Italy

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	1.43	0.77	1.24	1.77	0.15	0.41	1.34	2.84	5.79	94.3	0	345	
NH4+	1.60	0.94	1.36	1.81	0.18	0.50	1.42	3.24	5.78	94.3	0	345	
NO3-	0.82	0.60	0.63	2.13	0.05	0.18	0.66	2.02	3.68	94.3	0	345	
HNO3	0.12	0.12	0.07	3.03	0.00	0.01	0.08	0.38	0.47	94.3	0	345	
NO2	4.40	2.09	3.96	1.58	1.15	1.95	3.76	8.74	10.82	85.5	0	313	
SO4--	1.08	0.57	0.93	1.77	0.10	0.34	0.97	2.21	2.92	94.3	0	345	
SO2	0.63	0.40	0.52	1.88	0.06	0.18	0.54	1.35	2.73	94.3	0	345	

IT0004R Ispra Italy

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
H+	7.2	5.9	-	-	0.0	0.3	6.2	18.0	34.3	89.1	10	326	
NH4+	1.35	1.54	0.81	3.03	0.01	0.10	0.89	4.10	16.07	89.1	0	326	
NO3-	0.52	0.54	0.33	2.61	0.01	0.06	0.34	1.68	3.64	89.1	0	326	
NO2	2.07	1.21	1.77	1.75	0.44	0.74	1.67	4.52	6.76	98.6	0	361	
SO4--	0.60	0.48	0.41	2.65	0.03	0.06	0.50	1.50	2.44	89.1	0	326	
SO2	0.78	0.62	0.51	2.80	0.00	0.07	0.60	1.87	3.00	96.4	1	353	

LT0015R Preila Lithuania

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.34	1.03	1.09	1.88	0.11	0.37	1.06	3.23	8.32	98.9	0	362	
SO4--	0.92	0.61	0.75	1.93	0.07	0.25	0.80	2.16	3.86	98.4	0	360	
SO2	0.74	0.90	0.47	2.57	0.03	0.11	0.48	2.19	9.03	98.4	0	360	
NH3+NH4+	1.71	1.43	1.21	2.45	0.09	0.23	1.38	4.30	9.67	98.1	0	359	
HNO3+NO3	0.62	0.45	0.48	2.15	0.02	0.13	0.52	1.53	2.23	97.5	0	357	

LV0010R Rucava Latvia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.87	0.58	0.70	1.97	0.03	0.23	0.72	2.18	3.88	100.0	4	366	
NO3-	0.22	0.18	0.17	2.27	0.01	0.04	0.18	0.56	1.18	100.0	2	366	
NO2	0.71	0.41	0.60	1.86	0.00	0.20	0.60	1.50	2.10	100.0	1	366	
SO4--	0.26	0.28	0.19	2.42	0.00	0.04	0.18	0.79	2.60	100.0	28	366	
SO2	0.32	0.37	0.31	2.14	0.00	0.00	0.20	1.00	2.30	100.0	84	366	
NH3+NH4+	1.22	0.64	1.05	1.74	0.10	0.41	1.10	2.48	4.71	100.0	0	366	
HNO3+NO3	0.25	0.19	0.19	2.17	0.01	0.05	0.20	0.62	1.26	100.0	0	366	

LV0016R Zoseni Latvia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.54	0.40	0.41	2.12	0.02	0.11	0.44	1.24	2.46	96.2	3	352	
NO3-	0.16	0.14	0.12	2.36	0.00	0.03	0.12	0.49	0.99	94.3	5	345	
NO2	0.66	0.38	0.57	1.66	0.10	0.30	0.60	1.33	3.30	96.7	0	354	
SO4--	0.22	0.25	0.15	2.59	0.00	0.02	0.15	0.59	1.96	94.5	71	346	
SO2	0.25	0.33	0.25	2.03	0.00	0.00	0.20	0.77	3.00	94.5	42	346	
NH3+NH4+	0.76	0.47	0.63	1.86	0.12	0.22	0.65	1.64	2.89	96.4	0	353	
HNO3+NO3	0.19	0.15	0.14	2.21	0.01	0.04	0.14	0.52	1.04	94.3	0	345	

NL0009R Kollumerwaard Netherlands

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.99	0.70	0.77	2.10	0.07	0.20	0.78	2.32	4.18	86.3	0	316	
NO3-	0.62	0.47	0.50	2.12	0.00	0.10	0.50	1.44	2.78	86.3	9	316	
NO2	3.79	2.81	2.79	2.35	0.00	0.61	3.05	9.15	17.39	98.1	2	359	
SO4--	0.62	0.43	0.50	1.93	0.00	0.14	0.51	1.44	2.95	86.3	1	316	
SO2	0.62	0.61	0.80	1.53	-0.50	0.00	0.50	1.50	4.51	96.4	92	353	

NL0010R Vreedepeel Netherlands

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	13.51	10.12	10.46	2.09	0.41	3.11	10.06	34.77	51.78	74.6	0	273	
NH4+	1.33	0.90	1.07	1.96	0.08	0.36	1.05	3.26	4.80	91.3	0	334	
NO3-	0.80	0.52	0.64	2.00	0.07	0.20	0.65	1.84	3.06	91.3	0	334	
NO2	6.55	2.98	5.93	1.57	1.52	2.74	6.10	11.59	19.83	98.1	0	359	
SO4--	0.76	0.56	0.61	1.98	0.10	0.23	0.60	1.90	3.15	91.3	0	334	
SO2	1.36	1.25	1.16	1.88	-0.50	0.00	1.00	3.01	11.02	97.8	30	358	

NO0001R Birkenes Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.04	0.05	0.02	3.16	0.00	0.00	0.02	0.15	0.37	100.0	111	366	
Cl-	0.54	0.92	0.13	6.71	0.01	0.01	0.16	2.78	7.10	100.0	91	366	
Mg++	0.05	0.06	0.03	3.36	0.00	0.00	0.03	0.18	0.32	100.0	82	366	
NO2	0.57	0.56	0.42	2.27	0.01	0.12	0.43	1.46	4.71	100.0	5	366	
K+	0.05	0.05	0.03	2.81	0.00	0.00	0.04	0.13	0.40	100.0	52	366	
Na+	0.45	0.52	0.23	3.90	0.00	0.02	0.26	1.61	2.68	100.0	15	366	
SO4--	0.44	0.44	0.29	2.75	0.00	0.05	0.31	1.28	2.91	100.0	2	366	
SO2	0.12	0.14	0.07	2.98	0.01	0.01	0.08	0.39	0.93	100.0	52	366	
NH3+NH4+	0.43	0.50	0.24	3.23	0.03	0.03	0.26	1.48	2.79	100.0	0	366	
HNO3+NO3	0.20	0.24	0.12	2.86	0.01	0.02	0.11	0.75	1.85	100.0	0	366	

NO0008R Skreaadalen Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.04	0.05	0.02	3.34	0.00	0.00	0.02	0.14	0.48	95.1	107	348	
Cl-	0.64	1.21	0.13	7.02	0.01	0.01	0.12	3.18	10.05	95.4	78	349	
Mg++	0.05	0.08	0.02	3.77	0.00	0.00	0.02	0.22	0.43	95.1	109	348	
NO2	0.38	0.31	0.32	1.79	0.01	0.14	0.31	0.86	3.19	99.2	2	363	
K+	0.04	0.04	0.03	2.61	0.00	0.00	0.03	0.10	0.34	94.8	52	347	
Na+	0.48	0.66	0.20	4.42	0.00	0.01	0.22	1.85	3.76	95.1	11	348	
SO4--	0.35	0.40	0.22	2.81	0.00	0.03	0.23	1.07	3.22	95.4	6	349	
SO2	0.09	0.17	0.05	3.00	0.01	0.01	0.05	0.33	1.66	94.8	92	347	
NH3+NH4+	1.13	1.06	0.86	2.12	0.03	0.27	0.86	2.54	9.39	95.1	0	348	
HNO3+NO3	0.15	0.19	0.10	2.41	0.02	0.02	0.09	0.42	1.85	94.8	0	347	

NO0015R Tustervatn Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.02	0.03	0.01	2.83	0.00	0.00	0.01	0.08	0.36	99.7	183	365	
Cl-	0.35	0.63	0.07	6.89	0.01	0.01	0.05	1.79	3.78	99.7	149	365	
Mg++	0.03	0.05	0.01	3.31	0.00	0.00	0.01	0.13	0.40	99.7	181	365	
NO2	0.17	0.14	0.11	2.87	0.01	0.01	0.13	0.43	0.80	99.7	50	365	
K+	0.02	0.02	0.01	2.52	0.00	0.00	0.01	0.07	0.13	99.7	129	365	
Na+	0.27	0.45	0.09	5.06	0.00	0.00	0.10	1.09	3.49	99.7	39	365	
SO4--	0.18	0.18	0.12	2.70	0.00	0.02	0.13	0.51	1.40	99.7	11	365	
SO2	0.04	0.05	0.03	2.41	0.01	0.01	0.03	0.12	0.43	100.0	137	366	
NH3+NH4+	0.88	0.99	0.53	2.79	0.02	0.11	0.51	2.65	7.76	99.5	0	364	
HNO3+NO3	0.06	0.12	0.04	1.97	0.01	0.02	0.04	0.12	1.41	99.7	0	365	

NO0039R Kaarvatn Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.02	0.03	0.01	2.62	0.00	0.00	0.00	0.08	0.22	98.6	210	361	
Cl-	0.27	0.77	0.05	5.84	0.00	0.01	0.03	1.28	10.42	97.8	158	358	
Mg++	0.02	0.04	0.01	2.81	0.00	0.00	0.00	0.09	0.46	98.6	208	361	
NO2	0.32	0.23	0.24	2.27	0.01	0.06	0.26	0.84	1.36	100.0	10	366	
K+	0.02	0.02	0.01	2.53	0.00	0.00	0.01	0.06	0.21	98.6	136	361	
Na+	0.19	0.37	0.07	4.57	0.00	0.00	0.08	0.80	4.02	98.6	46	361	
SO4--	0.17	0.21	0.10	2.78	0.00	0.02	0.10	0.51	1.53	97.0	6	355	
SO2	0.03	0.06	0.02	2.34	0.01	0.01	0.01	0.10	1.00	98.6	188	361	
NH3+NH4+	0.56	0.73	0.30	3.10	0.02	0.04	0.28	2.11	5.57	98.4	0	360	
HNO3+NO3	0.05	0.10	0.04	2.09	0.01	0.01	0.03	0.10	1.18	96.4	0	353	

NO0041R Osen Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.03	0.04	0.01	2.89	0.00	0.00	0.01	0.09	0.34	94.8	159	347	
Cl-	0.12	0.24	0.03	4.56	0.01	0.01	0.01	0.59	1.78	94.5	181	346	
Mg++	0.01	0.02	0.01	2.37	0.00	0.00	0.00	0.05	0.11	94.8	211	347	
NO2	0.38	0.36	0.27	2.39	0.01	0.05	0.29	0.96	3.70	99.7	9	365	
K+	0.03	0.03	0.02	2.50	0.00	0.00	0.02	0.09	0.27	94.8	57	347	
Na+	0.13	0.16	0.06	3.83	0.00	0.00	0.07	0.46	0.93	94.8	38	347	
SO4--	0.25	0.31	0.13	3.30	0.00	0.02	0.14	0.88	2.37	95.1	11	348	
SO2	0.04	0.05	0.03	2.56	0.01	0.01	0.03	0.14	0.42	94.8	149	347	
NH3+NH4+	0.29	0.29	0.19	2.54	0.03	0.03	0.20	0.82	2.21	94.8	0	347	
HNO3+NO3	0.08	0.10	0.05	2.28	0.02	0.02	0.05	0.28	1.28	94.3	0	345	

NO0042R Zeppelin, Spitsbergen Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.02	0.04	0.01	2.87	0.00	0.00	0.00	0.08	0.46	96.2	182	352	
Cl-	0.31	0.51	0.10	5.22	0.01	0.01	0.13	1.15	4.07	96.4	88	353	
Mg++	0.03	0.05	0.01	3.10	0.00	0.00	0.01	0.11	0.36	96.2	151	352	
K+	0.01	0.02	0.01	2.19	0.00	0.00	0.00	0.03	0.31	96.2	229	352	
Na+	0.21	0.28	0.09	4.39	0.00	0.00	0.12	0.70	2.25	96.2	41	352	
SO4--	0.14	0.15	0.08	3.41	0.00	0.00	0.09	0.46	0.92	96.4	28	353	
SO2	0.12	0.28	0.05	3.12	0.01	0.01	0.05	0.51	3.68	97.5	102	357	
NH3+NH4+	0.11	0.07	0.09	1.80	0.02	0.03	0.09	0.24	0.57	95.1	0	348	
HNO3+NO3	0.03	0.02	0.03	1.48	0.01	0.02	0.02	0.05	0.35	94.3	0	345	

NO0055R Karasjok Norway

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
Ca++	0.02	0.04	0.01	2.56	0.00	0.00	0.00	0.06	0.50	99.7	222	365	
Cl-	0.25	0.39	0.06	5.91	0.01	0.01	0.05	1.01	2.41	99.7	146	365	
Mg++	0.02	0.03	0.01	2.88	0.00	0.00	0.00	0.08	0.18	99.7	186	365	
NO2	0.25	0.30	0.15	3.12	0.01	0.01	0.18	0.64	3.35	99.5	44	364	
K+	0.02	0.03	0.01	2.56	0.00	0.00	0.01	0.06	0.21	99.7	143	365	
Na+	0.20	0.24	0.10	3.91	0.00	0.00	0.11	0.65	1.60	99.7	28	365	
SO4--	0.27	0.27	0.16	3.08	0.00	0.03	0.18	0.78	1.94	99.7	10	365	
SO2	0.35	0.99	0.08	4.55	0.01	0.01	0.05	1.47	9.64	99.7	66	365	
NH3+NH4+	0.53	0.69	0.34	2.53	0.03	0.07	0.32	1.54	6.38	99.5	0	364	
HNO3+NO3	0.09	0.31	0.04	2.18	0.01	0.02	0.04	0.13	3.99	99.7	0	365	

PL0002R Jarczew Poland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	1.57	1.12	1.23	2.11	0.08	0.30	1.28	3.69	7.20	98.4	0	360	
NO3-	0.62	0.44	0.47	2.29	0.01	0.11	0.50	1.53	2.66	97.5	2	357	
NO2	2.97	1.39	2.67	1.60	0.40	1.10	2.75	5.34	9.90	96.4	0	353	
SO4--	1.58	0.77	1.37	1.82	0.10	0.41	1.48	3.06	4.79	98.4	1	360	
SO2	2.16	1.63	1.65	2.14	0.10	0.40	1.70	5.40	10.20	98.4	1	360	
NH3+NH4+	2.38	1.42	2.03	1.78	0.42	0.76	2.02	5.05	9.51	98.6	0	361	
HNO3+NO3	0.78	0.48	0.64	1.92	0.06	0.19	0.67	1.73	2.83	97.8	0	358	

PL0003R Sniezka Poland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.58	0.41	0.46	2.03	0.08	0.14	0.49	1.39	2.27	100.0	0	366	
NO3-	0.22	0.12	0.18	1.93	0.02	0.05	0.20	0.44	0.77	100.0	0	366	
NO2	1.19	0.50	1.08	1.60	0.20	0.50	1.10	2.00	3.20	100.0	0	366	
SO4--	0.72	0.45	0.58	2.07	0.10	0.10	0.63	1.59	2.19	100.0	5	366	
SO2	1.23	0.54	1.11	1.61	0.30	0.40	1.10	2.20	3.30	100.0	0	366	
NH3+NH4+	0.87	0.57	0.71	1.94	0.15	0.22	0.72	1.99	3.25	100.0	0	366	
HNO3+NO3	0.28	0.15	0.23	1.87	0.03	0.07	0.25	0.53	0.86	100.0	0	366	

PL0004R Leba Poland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	1.09	0.85	0.77	2.63	0.03	0.12	0.85	2.75	4.62	100.0	1	366	
NO3-	0.52	0.43	0.37	2.44	0.03	0.07	0.40	1.37	2.44	100.0	0	366	
NO2	1.70	1.09	1.41	1.84	0.20	0.50	1.40	3.88	8.00	99.7	0	365	
SO4--	1.24	0.73	1.03	1.96	0.10	0.29	1.12	2.64	4.21	100.0	4	366	
SO2	1.31	1.12	0.98	2.17	0.10	0.30	1.00	3.60	7.00	98.9	7	362	
NH3+NH4+	1.47	0.94	1.19	1.99	0.09	0.35	1.25	3.21	5.46	99.7	0	365	
HNO3+NO3	0.65	0.46	0.50	2.17	0.06	0.13	0.51	1.56	2.47	99.7	0	365	

PL0005R Diabla Gora Poland

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.96	1.05	0.68	2.19	0.06	0.26	0.54	3.18	9.04	93.4	0	342	
SO4--	0.80	0.68	0.51	3.07	0.02	0.04	0.63	2.22	3.65	96.7	0	354	
SO2	1.00	1.23	0.60	2.84	0.01	0.13	0.61	3.35	10.78	96.2	3	352	
NH3+NH4+	1.39	0.84	1.06	2.56	0.00	0.19	1.27	3.02	4.64	97.3	3	356	
HNO3+NO3	0.49	0.41	0.37	2.07	0.08	0.12	0.36	1.37	2.28	96.7	0	354	

RU0001R Janiskoski Russian Federation

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.23	0.18	0.18	2.09	0.00	0.05	0.18	0.59	1.29	80.3	85	294	
NO3-	0.05	0.04	0.04	2.15	0.00	0.01	0.03	0.11	0.33	80.3	49	294	
SO4--	0.35	0.35	0.24	2.53	0.00	0.05	0.24	1.08	2.72	80.3	6	294	
SO2	1.12	2.89	0.28	5.98	0.00	0.00	0.15	5.79	33.30	80.3	97	294	

RU0016R Shepeljovo Russian Federation

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.46	0.35	0.34	2.27	0.00	0.07	0.38	1.06	2.20	94.3	1	345	
SO4--	0.15	0.11	0.13	1.96	0.00	0.02	0.12	0.34	1.06	94.3	9	345	
SO2	0.75	0.80	0.46	2.83	0.02	0.08	0.48	2.29	5.32	94.5	0	346	

RU0018R Danki Russian Federation

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH4+	0.66	0.46	0.54	1.90	0.07	0.18	0.52	1.50	3.65	89.1	13	326	
NO3-	0.15	0.13	0.11	2.33	0.00	0.03	0.10	0.46	0.71	88.8	12	325	
SO4--	0.56	0.44	0.44	2.03	0.00	0.13	0.42	1.53	3.48	89.1	3	326	
SO2	0.30	0.47	0.16	3.68	0.00	0.00	0.12	1.17	3.10	89.1	124	326	

SE0002R Rorvik Sweden

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.51	1.11	1.24	1.85	0.18	0.46	1.24	3.56	8.16	98.1	0	359	
SO4--	0.72	0.73	0.54	2.35	0.00	0.08	0.58	1.69	10.32	98.6	6	361	
SO2	0.46	0.35	0.35	2.21	0.02	0.09	0.38	1.08	3.65	98.4	6	360	
NH3+NH4+	0.89	0.87	0.59	2.71	0.02	0.12	0.62	2.69	6.12	98.6	19	361	
HNO3+NO3	0.65	0.63	0.44	2.54	0.01	0.10	0.44	1.79	5.94	98.4	9	360	
SPM	1.3	1.4	1.0	1.9	0.7	0.7	0.7	4.3	11.8	98.9	270	362	

SE0005R Bredkalen Sweden

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.16	0.14	0.12	2.34	0.03	0.03	0.12	0.42	1.13	98.1	66	359	
SO4--	0.18	0.22	0.11	2.94	0.00	0.01	0.11	0.61	1.47	98.1	5	359	
SO2	0.04	0.04	0.03	1.84	0.02	0.02	0.02	0.11	0.36	98.1	279	359	
NH3+NH4+	0.20	0.48	0.09	3.07	0.02	0.02	0.08	0.67	5.73	98.4	215	360	
HNO3+NO3	0.08	0.29	0.04	2.57	0.00	0.01	0.03	0.14	2.82	97.3	105	356	
SPM	0.8	0.6	0.7	1.3	0.7	0.7	0.7	0.7	7.0	98.6	347	361	

SE0008R Hoburg Sweden

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.08	0.87	0.83	2.07	0.12	0.25	0.86	2.59	5.68	98.9	0	362	
SO2	0.55	0.51	0.37	2.55	0.02	0.08	0.38	1.47	4.24	100.0	6	366	
SPM	2.4	3.2	1.4	2.6	0.7	0.7	0.7	10.4	20.3	98.1	226	359	

SE0011R Vavihill Sweden

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	1.70	1.37	1.32	2.06	0.06	0.40	1.28	4.28	9.87	98.1	1	359	
SO4--	0.75	0.61	0.58	2.21	0.00	0.10	0.58	1.99	3.79	98.6	9	361	
SO2	0.45	0.49	0.28	2.90	0.02	0.03	0.30	1.55	3.60	98.4	27	360	
NH3+NH4+	1.33	1.06	0.91	2.78	0.02	0.12	1.08	3.38	6.00	92.3	41	338	
HNO3+NO3	0.68	0.65	0.41	3.22	0.01	0.04	0.49	1.86	4.46	98.4	34	360	
SPM	2.4	3.0	1.4	2.6	0.7	0.7	0.7	8.4	19.0	98.1	218	359	

SE0012R Aspvreten Sweden

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	0.92	0.89	0.72	1.89	0.19	0.24	0.68	2.14	5.27	24.6	0	90	
SO4--	0.25	0.32	0.14	3.05	0.00	0.02	0.14	0.74	1.81	24.9	2	91	
SO2	0.19	0.13	0.15	2.18	0.02	0.04	0.17	0.46	0.61	24.6	4	90	
NH3+NH4+	0.22	0.26	0.14	2.46	0.02	0.04	0.13	0.54	1.67	24.6	32	90	
HNO3+NO3	0.21	0.16	0.16	2.15	0.01	0.05	0.17	0.51	0.77	24.6	1	90	

SI0008R Iskrba Slovenia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
SO4--	0.89	0.70	0.63	2.55	0.05	0.09	0.69	2.28	4.03	99.7	0	365	
SO2	0.81	1.00	0.42	3.57	0.00	0.03	0.42	3.10	5.03	99.7	12	365	
NH3+NH4+	0.90	0.63	0.67	2.32	0.08	0.12	0.76	2.10	3.57	99.5	0	364	
HNO3+NO3	0.24	0.25	0.16	2.52	0.01	0.03	0.17	0.63	2.18	99.7	2	365	

SK0002R Chopok Slovakia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.09	0.09	0.06	2.48	0.02	0.02	0.06	0.27	0.55	97.5	0	357	
HNO3	0.05	0.04	0.05	1.83	0.01	0.02	0.04	0.13	0.31	98.1	0	359	
NO2	1.19	0.52	1.09	1.53	0.20	0.50	1.10	2.10	3.80	97.5	0	357	
SO4--	0.23	0.26	0.16	2.20	0.06	0.07	0.13	0.76	1.96	97.5	0	357	
SO2	0.72	0.85	0.50	2.22	0.10	0.20	0.50	2.20	7.20	98.1	0	359	
HNO3+NO3	0.14	0.11	0.11	2.03	0.03	0.04	0.11	0.39	0.65	97.5	0	357	

SK0004R Stara Lesna Slovakia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.29	0.20	0.25	1.87	0.02	0.09	0.25	0.67	1.83	97.5	0	357	
HNO3	0.07	0.05	0.06	1.77	0.01	0.03	0.05	0.16	0.33	97.5	0	357	
NO2	1.79	0.77	1.66	1.47	0.60	0.90	1.50	3.30	5.70	99.7	0	365	
SO4--	0.87	0.53	0.73	1.85	0.12	0.27	0.75	1.99	3.18	97.5	0	357	
SO2	1.48	1.35	1.07	2.24	0.10	0.39	1.00	4.50	8.90	97.8	0	358	
HNO3+NO3	0.36	0.21	0.31	1.71	0.06	0.12	0.32	0.75	1.98	97.3	0	356	

SK0005R Liesek Slovakia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.51	0.38	0.40	2.00	0.02	0.15	0.39	1.36	2.09	100.0	0	366	
HNO3	0.07	0.07	0.06	1.93	0.00	0.02	0.06	0.20	0.59	100.0	4	366	
NO2	1.93	0.89	1.75	1.56	0.20	0.90	1.70	3.87	6.00	100.0	0	366	
SO4--	1.04	0.58	0.90	1.73	0.27	0.37	0.91	2.08	3.83	100.0	0	366	
SO2	2.31	2.45	1.58	2.30	0.00	0.50	1.30	8.20	16.20	100.0	5	366	
HNO3+NO3	0.58	0.39	0.48	1.84	0.06	0.18	0.46	1.49	2.14	100.0	0	366	

SK0006R Starina Slovakia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO3-	0.25	0.17	0.19	2.15	0.02	0.04	0.21	0.60	0.93	99.5	0	364	
HNO3	0.31	0.36	0.20	2.38	0.02	0.06	0.18	0.93	2.98	99.5	0	364	
NO2	1.49	0.84	1.31	1.68	0.20	0.50	1.40	2.90	8.90	100.0	0	366	
SO4--	1.10	0.74	0.88	2.04	0.07	0.23	0.93	2.48	5.36	99.5	0	364	
SO2	2.56	2.90	1.63	2.54	0.20	0.40	1.50	8.60	22.20	99.5	0	364	
HNO3+NO3	0.56	0.45	0.43	2.01	0.04	0.17	0.40	1.48	3.30	99.2	0	363	

TR0001R Cubuk II Turkey

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NH3	0.27	0.25	0.22	2.81	-0.11	-0.01	0.23	0.66	1.46	59.3	18	217	
HNO3	0.12	0.20	0.08	2.66	-0.03	0.01	0.06	0.35	1.95	60.4	10	221	
NO2	0.97	1.03	0.67	2.36	0.05	0.17	0.65	2.86	7.40	87.7	0	321	
SO4--	0.84	0.82	0.60	2.63	-0.10	0.06	0.62	2.32	5.79	88.0	7	322	
SO2	2.06	4.05	0.66	4.97	-0.10	-0.01	0.58	10.09	32.78	60.4	12	221	
NH3+NH4+	0.64	0.56	0.48	2.90	-0.05	-0.02	0.42	1.64	1.66	12.3	4	45	

YU0005R Kamenicki Vis Yugoslavia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	5.03	2.22	4.74	1.40	1.70	2.80	5.05	6.60	21.20	21.6	0	79	
SO2	3.61	3.57	2.43	2.32	1.25	1.25	1.25	12.30	14.90	80.1	167	293	

YU0008R Zabljak Yugoslavia

January 2000 - December 2000

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	Samp flag
NO2	7.66	2.33	7.36	1.33	3.00	4.50	7.50	10.69	21.80	29.2	0	107	
SO2	1.55	0.94	1.42	1.43	1.25	1.25	1.25	3.30	7.10	96.2	310	352	

Annex 4

Maps over Europe

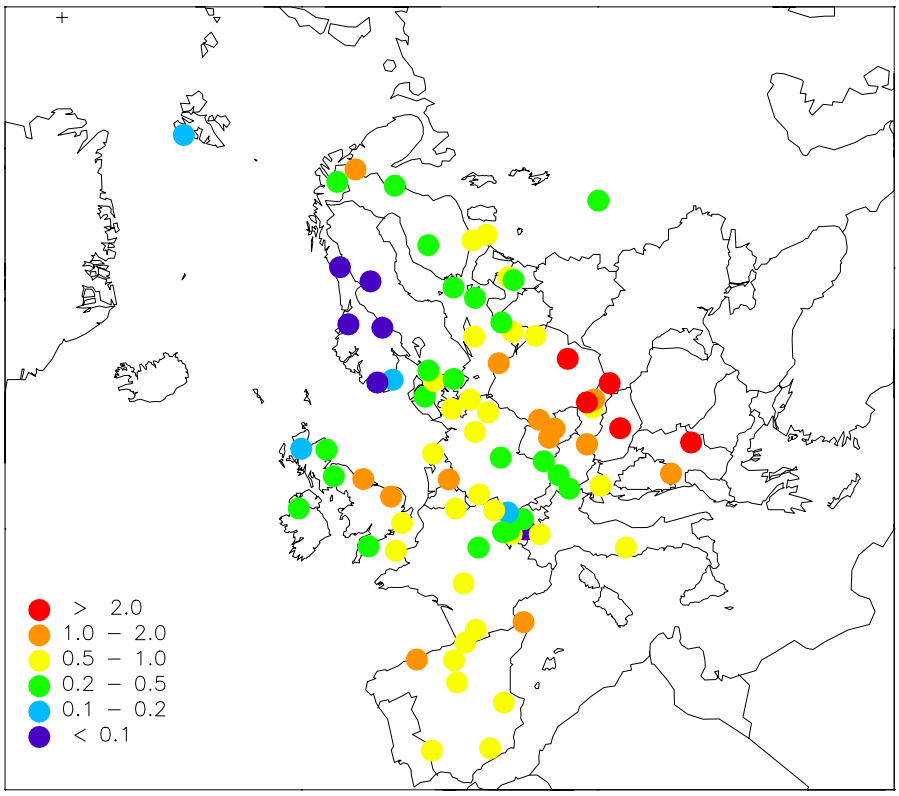

Figure 4.1: Geographical distribution of sulphur dioxide 2000. Unit: µg S/m^3.

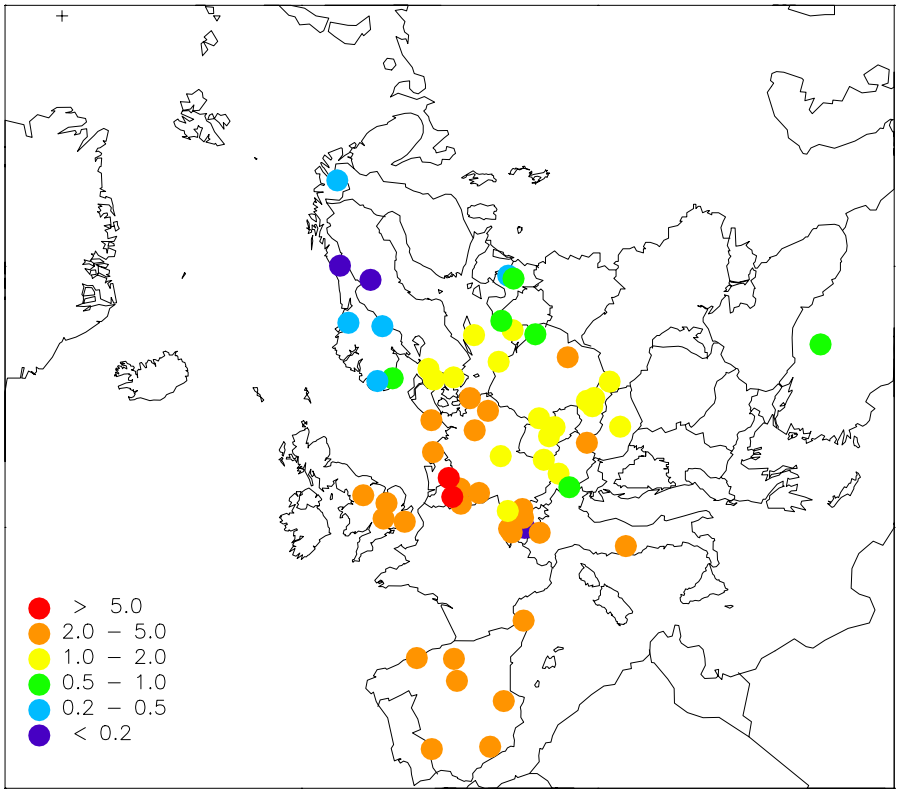

Figure 4.2: Geographical distribution of nitrogen dioxide 2000. Unit: µg N/m^3.

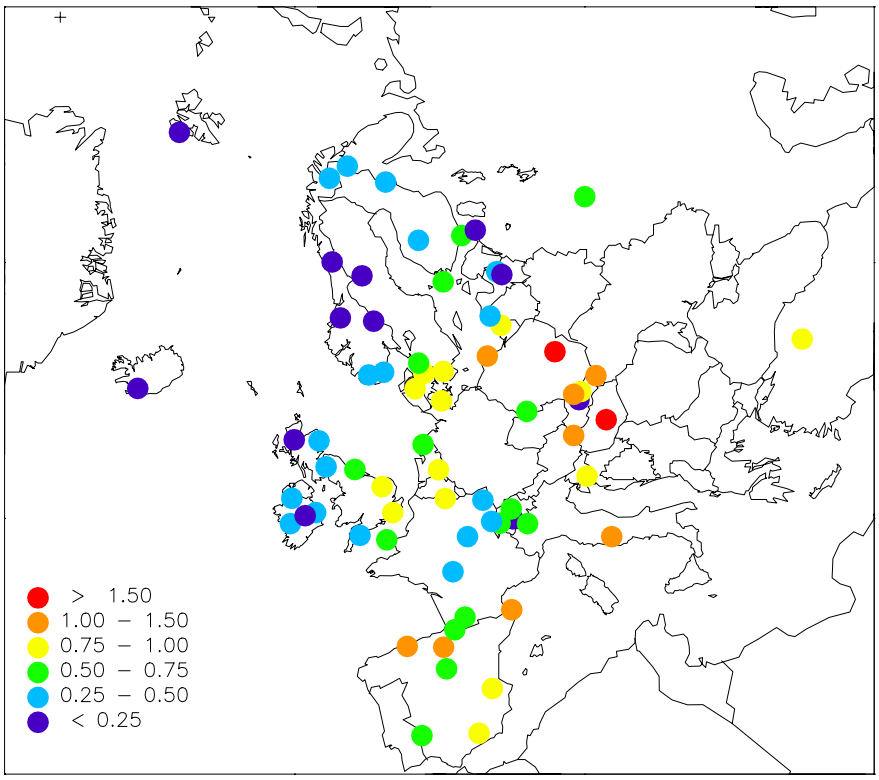

Figure 4.3: Geographical distribution of sulphate in aerosols 2000. Unit: µg S/m^3.

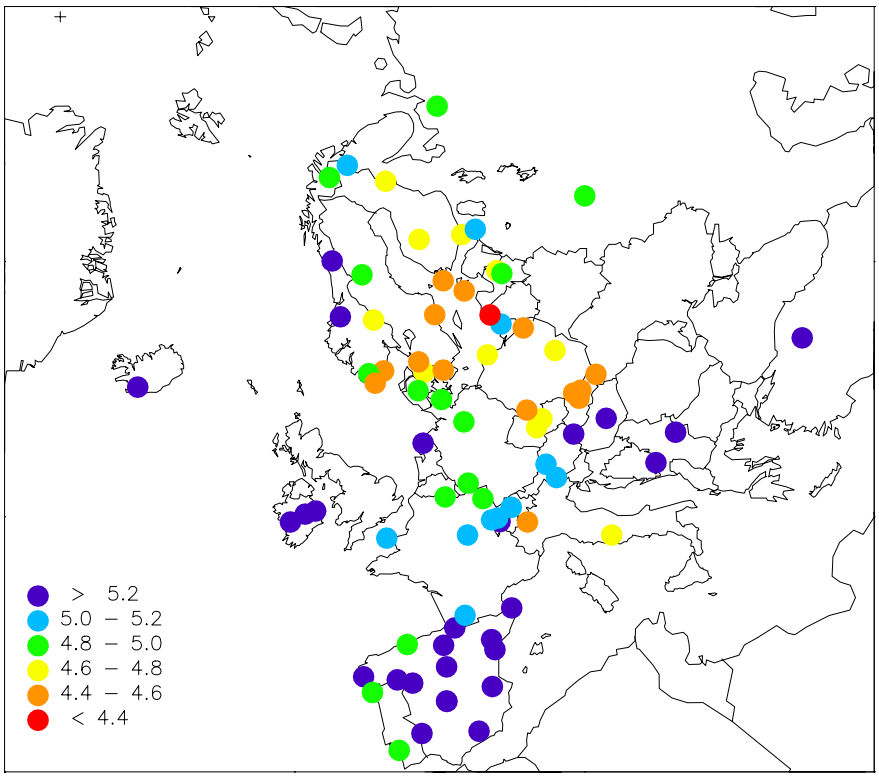

Figure 4.4: Geographical distribution of pH in precipitation 2000. Unit: pH units.

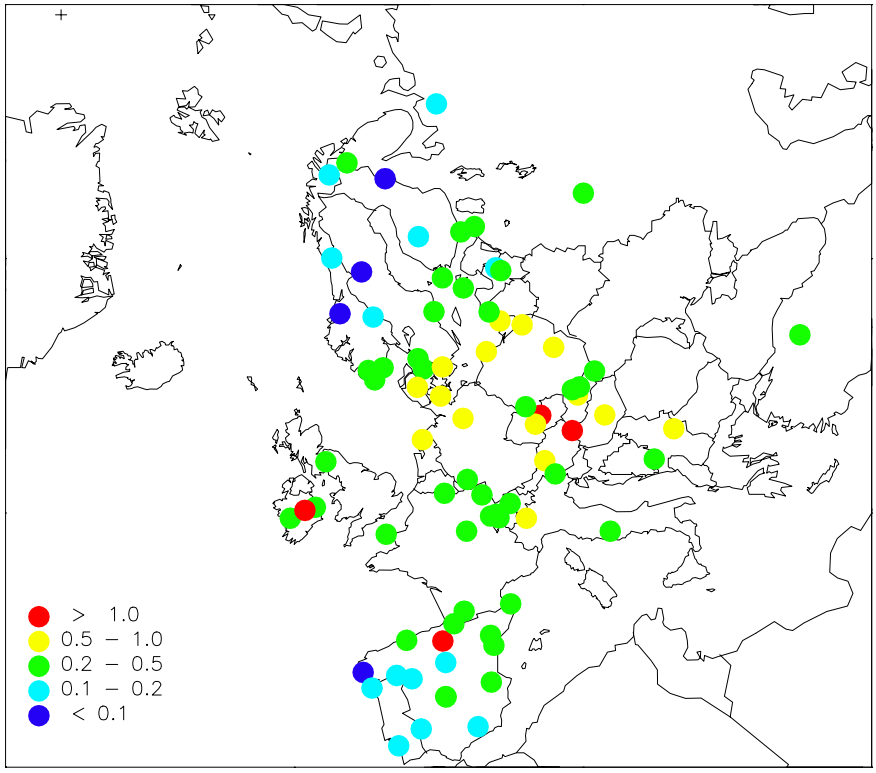

Figure 4.5: Geographical distribution of ammonium in precipitation 2000. Unit: mg N/l.

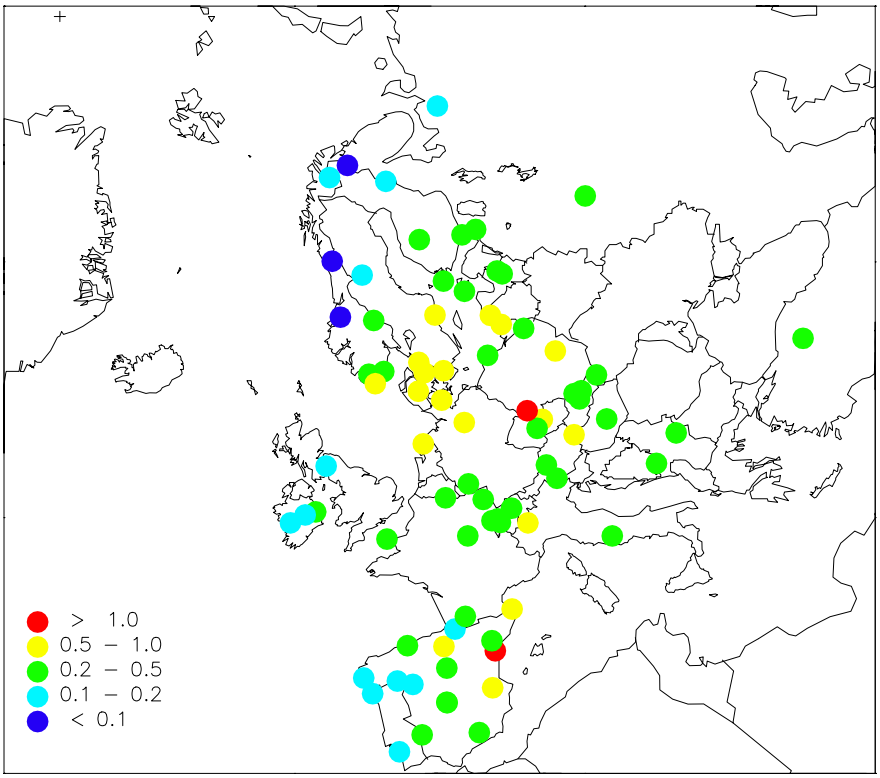

Figure 4.6: Geographical distribution of nitrate in precipitation 2000. Unit: mg N/l.

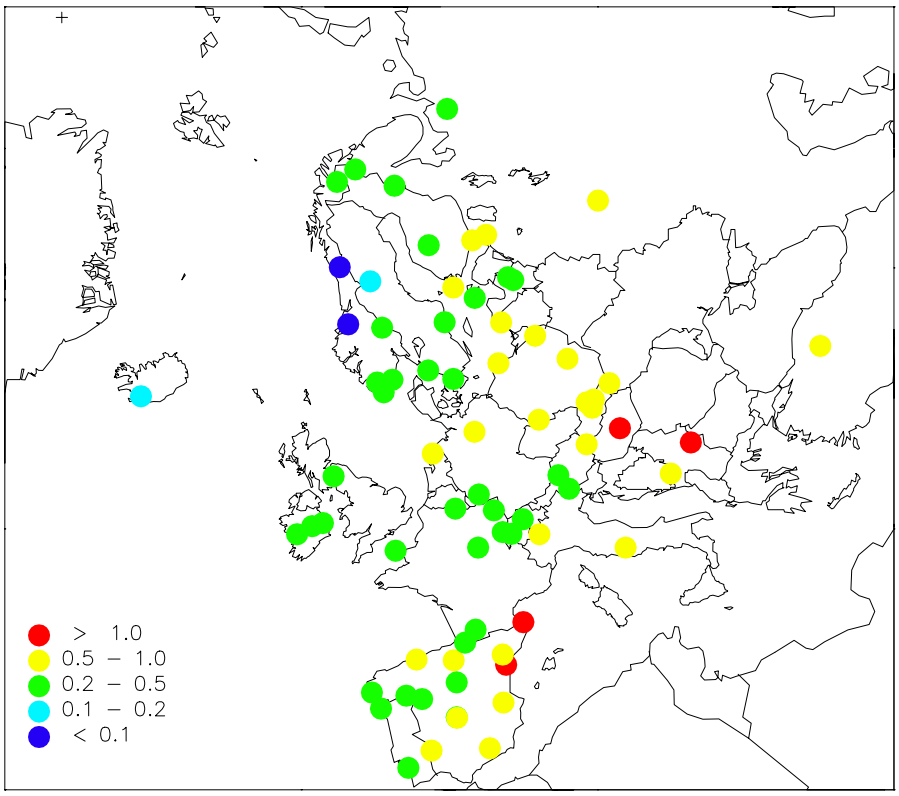

Figure 4.7: Geographical distribution of sulphate in precipitation 2000 (corrected for sea spray). Unit: µg S/m^3.

Annex 5

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.
Kjeller, 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.
Kjeller, Norwegian Institute for Air Research, 1997.

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, P. Coddeville, C. Dye, J. Honzak 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.

Heavy metals and POPs within the ECE region 1997.
EMEP/CCC-Report 7/99 by T. Berg and A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 1999.

VOC measurements 1998.
EMEP/CCC-Report 5/1999 by S. Solberg.
Kjeller, Norwegian Institute for Air Research, 1999.

Data Report 1998. Part 1: Annual summaries.
EMEP/CCC-Report 3/2000 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2000.

Data Report 1998. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 4/2000 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2000.

Ozone Measurements 1998.
EMEP/CCC-Report 5/2000 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2000.

Heavy metals and POPs in Europe 1998.
EMEP/CCC-Report 2/2000 by T. Berg, A.-G. Hjellbrekke and R. Larsen.
Kjeller, Norwegian Institute for Air Research, 2000.

Ozone Measurements 1999.
EMEP/CCC-Report 1/2001 by A.-G. Hjellbrekke and S. Solberg.
Kjeller, Norwegian Institute for Air Research, 2001.

Data Report 1999. Acidifying and autrophying compounds. Part 1: Annual summaries.
EMEP/CCC-Report 2/2001 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2001.

Data Report 1999. Acidifying and autrophying compounds. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 3/2001 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2001.

VOC measurements 1999.
EMEP/CCC-Report 7/2001 by S. Solberg, C. Dye, M. Roemer and N. Schmidbauer.
Kjeller, Norwegian Institute for Air Research, 2001.

Heavy metals and POPs within the ECE region 1999.
EMEP/CCC-Report 9/2001 by T. Berg, A.-G. Hjellbrekke and R. Larsen.
Kjeller, Norwegian Institute for Air Research, 2001.

Ozone measurements 2000.
EMEP/CCC-Report 5/2002 by A.-G. Hjellbrekke and S. Solberg.
Kjeller, Norwegian Institute for Air Research, 2002.

Data Report 2000 Acidifying and eutrophying compounds. Part 1: Annual summaries.
EMEP/CCC-Report 6/2002 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2002.

Data Report 2000 Acidifying and eutrophying compounds. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 7/2002 by A.-G. Hjellbrekke.
Kjeller, Norwegian Institute for Air Research, 2002.

VOC measurements 2000.
EMEP/CCC-Report 8/2002 by S. Solberg, C. Dye, N. Schmidbauer, M. Wallasch and R. Junek.
Kjeller, Norwegian Institute for Air Research, 2002.

Heavy metals and POPs within the EMEP region 2000.
EMEP/CCC-Report 9/2002 by T. Berg, A.-G. Hjellbrekke and R. Larsen.
Kjeller, Norwegian Institute for Air Research, 2002.

Annex 6

EMEP Data Quality Objectives (DQO)

10 % accuracy or better for oxidized sulphur and oxidized nitrogen in single analysis in the laboratory,

15 % accuracy or better for other components in the laboratory,

0.05 units for pH,

15–25 % uncertainty for the combined sampling and chemical analysis (components to be specified later),

90 % data completeness of the daily values.

The targets, with respect to accuracy in the laboratory, for the very lowest concentrations of the main components in precipitation follow the WMO GAW (1992) recommendations for regional stations:

	Accuracy	
SO_4^{2-}	0.032 mg S/l	(1 µmol/l)
NO_3^-	0.014 mg N/l	(1 µmol/l)
NH_4^+	0.028 mg N/l	(2 µmol/l)
Cl^-	0.107 mg Cl/l	(3 µmol/l)
Ca^{2+}	0.012 mg Ca/l	(0.3 µmol/l)
K^+	0.012 mg K/l	(0.3 µmol/l)
Mg^{2+}	0.007 mg Mg/l	(0.3 µmol/l)
Na^+	0.007 mg Na/l	(0.3 µmol/l)

The targets for the wet analysis of components extracted from air filters are the same as for precipitation. For SO_2 the limit above for sulphate is valid for the medium volume method with impregnated filter. For NO_2 determined as NO_2^- in solution the accuracy for the lowest concentrations is 0.01 mg N/l.

The aim for data completeness is valid for the current definition used by the CCC. This definition will, however, be harmonised with the WMO GAW definition and modified.

It is understood that there is a need to investigate additional uncertainty caused by local influence on the measurements at the sites (not representative siting).

It may be necessary to reconsider the DQO for volatile organic components (VOC), persistent organic pollutants (POP), and trace metals (HM).