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International Co-operative Programme on Effects on Materials, including Historic and Cultural Monuments

Final environmental data report September 1987 to August 1995

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Summary

The UN/ECE on materials programme is an international project which has been running for eight years at 39 test sites in 14 countries. Norwegian Institute for Air Research has been sub-centre and responsible for the environmental data storing, reporting and evaluation in the programme.

This report presents the data base for eight years of environmental measurements obtained in the ECE-ICP on materials programme. Beside the data from the eight year it also presents the yearly mean values for the periods 1987-88, 1987-89, 1987-91 and 1987-95. These data correspond with the exposure periods for the materials and are used by the sub-centres for the dose-response analysis.

An evaluation of the regularity and quality of the total data base has shown that for most of the test sites both the regularity and quality has been good. Sites belonging to the EMEP net of sites or to national surveillance programme were the best. The sites in urban areas had more irregularities. Local construction or regulations have stopped the measurements for periods or changed the pollution level. Some sites has been forced to move to another site in the neighbourhood. This has not caused any dramatic changes in the environmental situation for the materials.

A trend analysis for the gas pollutants has been carried out. Two sites have insufficient data for any analysis and it shows that for the 37 sites where sufficient data exist, there is a clear trend for 35 sites that the SO_2 level has decreased. The highest reductions are observed on the high pollution sites in Czech Republic, Italy, Germany and Norway, but if the reduction is calculated as percentage of the first values, the highest reduction is observed in the less polluted areas. The two sites without reduction is Research Triangle Park in North Carolina, USA, where the pollutant level is fairly low, and at the Jeronimo Monastery in Lisbon, Portugal, where the pollutant levels were very high the fifth year of exposure due to heavy construction work in the area.

Even for NO_2 some cities and industrial areas have a clear trend of reduced concentrations. For some places like in the Czech Republic it could partly be caused by a change in the heating and cooking system from coal to gas. In other countries it could also be caused by changes in the traffic regulation in the cities. An analysis of the possible local changes has not been performed.

For the trend analyses of ozone no indication of changes in the level were observed.

The trend for the total acid load has been calculated for all sites for eight years. The acid load has been reduced on most test sites. The fluctuation is larger than for the gases. Even so, it seems to be documented that the acid load has been reduced for most sites.

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1. Introduction

Airborne acidifying pollutants are known to be one major cause of corrosion of different materials including the extensive damage that has been observed on historic and cultural monuments. In order to fill some important gaps of knowledge in this field the Executive Body for the Convention on Long-range Transboundary Air Pollution decided to launch an international co-operative programme. The programme started in September 1987 and involves exposure at 39 test sites in 12 European countries and in the United States and Canada.

The aim of the programme is to perform a quantitative evaluation of the effect of sulphur pollutants in combination with NO_x and other pollutants as well as climatic parameters on the atmospheric corrosion of important materials. For this purpose measurements of gaseous pollutants, precipitation and climate parameters have been initiated at or nearby each test site, together with evaluation of corrosion of the exposed test materials at each site.

A Task Force is organizing the programme with Sweden as lead country and the Swedish Corrosion Institute serving as the Main Research Centre. Sub-centres in different countries have been appointed, each responsible for their own materials group. The materials groups are:

Structural metals, including steel, weathering steel, zinc and aluminium (Sub-centre responsible for evaluation: SVUOM Praha a.s., Prague, Czech Republic), copper and cast bronze (Bayerisches Landesamt für Denkmalpflege, Munich, Germany).

Stone materials, including Portland limestone and White Mansfield dolomitic sandstone (Building Research Establishment, Department of Environment, Watford, United Kingdom).

Paint coatings, including coil coated steel with alkyd melamine, steel with alkyd paint, wood with alkyd paint system and wood with primer and acrylate (Norwegian Institute for Air Research, Lillestrøm, Norway).

Electric contact materials, including nickel, copper, silver and tin as coupons; Eurocard connectors of different performance classes (Swedish Corrosion Institute and Royal Institute of Technology, Stockholm, Sweden).

Environmental data storing, reporting and evaluation are the responsibility of the Norwegian Institute for Air Research. The aim of this report is to present the final environmental data collected and used for the dose/response studies inside the group. Beside the eight year results, average data for the exposure periods 1, 2, 4 and 8 year are presented.

Trend analysis for some of the important parameters are reported together with an evaluation of the quality of the data in the database.

2. The measuring programme

The measuring programme includes a normal programme and an extended programme.

The measuring programme.

Components to be measured		
Normal programme	Gas Precipitation Climate	SO_2, NO_2 mm, pH, SO_4-S, NO_3-N, Cl^-, conductivity Temperature, relative humidity, time of wetness (TOW) and sunshine hours
Extended programme	Gas Precipitation	O_3 NH_4-N, Na, Ca, Mg, K

The data are to be reported to the environmental sub-centre as daily, weekly or monthly mean values, except for TOW, sunshine hours and mm precipitation which are reported as the sums. The data will be presented as monthly and yearly values for the eight year. The 1, 2, 4 and 8 year average values are presented as mean values for the periods and as yearly average sums for TOW, sunshine and precipitation. The hours of sunshine is also presented as solar radiation.

3. Data from the monitoring test sites

The data is sent to the environmental sub-centre on special reporting forms or in ASCII files on diskette.

All data presented by the environmental sub-centre, as in this report, is given with the same accuracy as in the filled-in reporting forms. For data series which include values "below the detection limit", these are, by convention, replaced with one half of the reported detection limits when calculating the mean values.

The monthly mean values are calculated from the daily or weekly values or used directly if monthly values are the only reported. Information about the data sets used for calculation of the mean values for the eight year is given by letter code:

D = daily records
W = weekly records
M = monthly records.

Information about the original measuring system for each test site is given the report "Description of test sites".

4. Monthly mean concentrations

The average data for the 1, 2, 4 and 8 years period are given in Annex A and the eight year data are given in Annex B. The data have been subject to the following restrictions and classifications:

4.1 Gases, temperatures and relative humidity

- For monthly mean values calculated from daily measurements, the percentage of data used in the calculations is listed together with mean values.
- A monthly mean value with more than 75% data for a given component is accepted without any remarks.
- A monthly mean value for a component with between 50% and 75% of available data has been marked with an asterisk.
- A monthly mean value with less than 50% data is reported with an (X). Monthly values with less than 50% of the data included in the calculations are not recommended used for statistical dose-response treatment.

4.2 Precipitation components

- For monthly mean values calculated from daily or weekly rain results, the percentages of the total amount of rain used in the calculations are listed together with the mean values.
- A monthly mean value for a component with more than 75% of the amount of rain used in the calculations is accepted without any remarks.
- A monthly mean value for a component with between 50% and 75% of the amount of rain used in the calculations has been marked with an asterisk.
- A monthly mean value with less than 50% of the amount of rain used in the calculations is reported with an (X). Monthly values with less than 50% of the total rain included in the calculations are not recommended used for further data treatment.

4.3 TOW and sunshine hours

The total sum from the recorded days is adjusted to a complete month by dividing the sum with the numbers of records and multiply with the number of days in the month. The percentage of data used for these adjustment is listed together with the monthly value.

- With more than 75% of the values reported, the monthly value will be reported without any remarks.
- With between 50% and 75% of the values reported, the monthly value will be reported with an asterisk.

- With less than 50% of the values reported, a monthly value is reported with an (X). For further data treatment these data are often replaced by estimated values, see chapter 5.

5. Yearly mean concentrations

5.1 Yearly mean values

All values given for yearly mean values are treated in the same way as the monthly values. If daily results are reported during the whole year, all available daily values are used for the calculation of the mean value. The percentage of available data is also calculated and listed together with the yearly values in the tables in Annex A.

- A yearly mean value for observations including 75% of the monthly values is accepted without any remarks. A yearly mean value including between 50% and 75% of the monthly values is accepted with an asterisk.
- A yearly mean value including less than 50% is reported with an (X).

If weekly or monthly values are reported, the monthly values are used in the calculations and the percentage is not listed.

5.2 TOW, sunshine hours and amount of precipitation

TOW, sunshine hours and amount of precipitation are reported as the total sum and must be completed to a full year if the results shall be of any use. Since there are seasonal variations in the climatic factors the use of average values for adjusting the results can be incorrect. To complete the yearly results estimated values were used. The estimated values were formed by comparing similar sites, by looking at reported values for other months from the same season or from meteorologic statistics. Only 4 estimated values are accepted for each parameter, and the estimated values are marked with a plus (+). If monthly values are available from the previous years, the missing monthly value is substituted with the mean value from the same month for the available years and marked with a (+).

If more than 4 of the monthly values are missing no yearly value is reported.

6. Calculations of monthly values

Mean temperature (T_M)

$$T_M = \frac{\sum_0^i T_i}{i}$$

T_i = measured values

i = *number of records*

Mean relative humidity (RH_M)

$$RH_M = \frac{\sum_0^i RH_i}{i}$$

Time of wetness (TOW) (for incomplete data sets see chapter 4.3 and 5.2)

$$TOW = \sum_{0}^{i}{}_{i}\ TOW_i$$

Sunshine hours (sh) (for incomplete data sets see chapter 4.3 and 5.2)

$$sh = \sum_{0}^{i} sh_i$$

Sunshine hours shall report the number of hours where the test panels have been exposed to sunlight. So far no efforts have been made to transform different sun radiation measurements to sunshine hours.

Mean gas concentrations G_M

$$G_M = \frac{\sum_{0}^{i} G_i}{i}$$

For some sites where complete information of the sampling period exists, another equation is used

$$G_M = \sum_{0}^{i} \frac{(n_i \cdot G_i)}{\sum_{0}^{i} n_i}$$

$$n_i = sampling\ period$$

Precipitation (for incomplete data sets see chapter 4.3 and 5.2)

$$mm = \sum_{0}^{i} mm_i$$

weighted mean pH (pH_M)

$$pH_M = \div\ log \frac{\sum_{0}^{i} \left[mm_i \cdot \left(10^{-pH_i} \right) \right]}{\sum_{0}^{i} mm_i}$$

weighted mean values for cations, anions and conductivity (C_M)

$$C_M = \frac{\sum_{0}^{i} (mm_i \cdot C_i)}{\sum_{0}^{i} mm_i}$$

7. Results

The environmental data in the ECE-ICP on materials programme has been collected for eight years and has reached the final stage of the first exposure phase. A list of the test sites is given in Table 1. For the dose/response regression analysis it is of great importance to calculate mean values for the environmental data which correspond to the exposure periods of materials. Based on the regression analysis carried out on the four year exposed samples, the following parameters were classified as essential: Temperature, relative humidity, time of wetness (TOW), SO_2, NO_2, O_3, mm precipitation, pH, Cl^- and conductivity. As optional parameters the following was defined: sun radiation, SO_4^{2-}, NO_3^- and NH_4^+. Since O_3 was reported only for 19 of the exposure sites, it was decided to calculate O_3, called $O_{3\text{-new}}$, for the rest of the test sites using the equation

$$[O_3] = 60.5\ exp^{-0,014[NO_2]}$$

This equation was proposed as a substitute for O_3 in Report no. 18 (1995), based on the results of the data obtained in this project.

To obtain environmental data of the best possible quality a thorough study of the available data was carried out. For climatic data which has seasonal variations, complete dataset is needed to generate a reliable yearly mean. Gaps in the data was completed by estimation of the missing data by following the same procedures as described in Chapter 5.2. For the environmental data basicly all available data for the periods was used. Extreme values which was way out of proportion with the rest of the data from the site, was deleted if no specific explanation for the result was noted. A description of the regularity and expected quality for the 39 test sites is given in Chapter 9.

For the analysis of the material damages of the exposed samples a database for the environmental mean values following the same periods as for the exposure periods was created and it is presented in Annex A, Table A.1. The yearly values are presented for all eighth years in Table A.2, while the reported data from the eight year is given in Annex B.

In Annex A the sunhour data is recalculated to sun radiation. This calculation can be made on yearly values where a statistical distribution of sunhours through the day can be expected. The influence of the latitude is included in the calculation. The quality of this calculation was controlled on sites where both sunhours and sun radiation were reported. The calculated values fit the reported ones inside an uncertainty of 10%. A short description of the model used for the transformation of sun hours to solar radiation is given in Chapter 8.

Table 1: List of test sites of exposure programme.

Test site no.	Test site name	Country	Location
1	Prague-Letnany	The Czech Republic	Urban
2	Kasperske Hory	"	Rural
3	Kopisty	"	Industry
4	Espoo	Finland	Urban
5	Ähtäri	"	Rural
6	Helsinki-Vallila	"	Industry
7	Waldhof-Langenbrügge	Federal Republic of Germany	Rural
8	Aschaffenburg	"	Urban
9	Langenfeld-Reusrath	"	Rural
10	Bottrop	"	Industry
11	Essen-Leithe	"	Rural
12	Garmisch-Partenkirchen	"	Rural
13	Rome	Italy	Urban
14	Casaccia	"	Rural
15	Milan	"	Urban
16	Venice	"	Urban
17	Vlaardingen	Netherlands	Industry
18	Eibergen	"	Rural
19	Vredepeel	"	Rural
20	Wijnandsrade	"	Rural
21	Oslo	Norway	Urban
22	Borregaard	"	Industry
23	Birkenes	"	Rural
24	Stockholm South	Sweden	Urban
25	Stockholm Centre	"	Urban
26	Aspvreten	"	Rural
27	Lincoln Cathedral	United Kingdom	Urban
28	Wells Cathedral	"	Urban
29	Clatteringshaws Loch	"	Rural
30	Stoke Orchard	"	Rural, industry
31	Madrid	Spain	Urban
32	Bilbao	"	Industry
33	Toledo	"	Rural
34	Moscow	Russia	Urban
35	Lahemaa	Estonia	Rural
36	Lisbon-Jeronimo Monastery	Portugal	Urban
37	Dorset	Canada	Rural
38	Research Triangle Park	USA (NC)	Rural
39	Steubenville	USA (Oh)	Industry

8. Model for computation of solar radiation

A model for computation of solar radiation received by a horisontal surface at sea level has been developed. The model is based on the discrete ordinate solution to the radiative transfer equation (Stamnes et al., 1988) and is modified to include the curvature of the atmosphere (Dahlback and Stamnes, 1991). The model includes all orders of multiple scattering and absorption, and the ground is treated as a Lambertian reflector. The optical properties are allowed to vary vertically. The atmosphere is divided into a suitable number of layers to resolve the optical properties adequately. The model includes molecular (Rayleigh) scattering as well as scattering and absorption by clouds.

The solar radiation received by a horisontal surface, E, may be written as

$$E = \iint F\left(\tau_{eff}, O_3, Z, A, \lambda, \tau_R\right) \cdot d\lambda \cdot dt$$

where F is the spectral global irradiance (direct + diffuse radiation). The integratation is performed over a time period of 1 year and the wavelength is integrated from 290 nm to 2900 nm in order to cover the complete solar spectrum. The spectral irradiance F depends on the cloud optical depth τ_c, the total ozone abundance, O_3, the solar zenith angle, Z, the surface albedo, A, the wavelength, λ, and the rayleigh scattering optical depth, τ_R. The most important factors controlling the annual integrated solar energy, E, are the cloud cover and the solar zenith angle. Atmospheric ozone is included in the model but are assumed to be constant since variations in the ozone amount is of minor importance on the radiation integrated over the complete solar spectrum. The effect of aerosols in the lower troposphere may be of importance at some locations but are neglected here. The surface albedo, A, was set to 0.2 which is close a climatological mean value for continental vegetation (Kondratyev, 1969)

The model used in this work is designed to compute the surface solar radiation using the annual number of sunhours and latitude as input. The annual numbers of sunhours are used to determine an effective cloud optical depth, τ_{eff}. The effective cloud optical depth is assumed in the calculations to be constant throughout the year and is determined by

$$\tau_{eff} = \left(\frac{S_0 - S) \cdot \tau_c}{S}\right)$$

where S_0 is the maximal number of annual sunhours, S is the actual number of sunhours and τ_c is the cloud optical depth on a cloudy day. The present model is an modification of a radiation model used to determine cloud optical depth (Dahlback, 1996) from irradiance measurements with a multi channel filter instrument in Oslo, Norway. Measurements from this station in the period 1994-1996 are used to determine a typical optical depth on a cloudy day and found to be around 20. The time and latitude dependent solar zenith angle with 1 hour time resolution is used in the calculations of the annual integrated solar radiation, E.

9. Regularity and quality of the reported data

The test sites represent areas from background level of pollutant to urban and industry levels. The background sites have had the best regularity for the data reported. Many of these sites belong to the EMEP monitoring programme and had long and good data records.

In urban and industrial areas it has been more difficult to maintain the site and the measurements. Some of these problems are described in the revised Report No. 2 from 1993. In some countries the funding of the environmental measurements also have been limited. To some extent missing data has been replaced with average data from previous years. Generated data is only used for parameters which are of any importance to the dose/response studies. A brief review of quality of the reported data for the different countries and sites are given in the following pages.

Site 1–3 Czech Republic

Monthly data for environmental data has been reported through the whole exposure programme. The optional parameters for precipitation and ozone are not reported. Sun hours are not reported at the background site Kasperske Hory (site 2). Climatic data is reported as daily values. It has only been minor questions to the data reported and the reported data have good quality.

Site 4–6 Finland

Site 5 Ahtari is an EMEP site with complete data set. For the two other sites precipitation quality data is only measured every second year for the last years. Extrapolation of existing data to generate yearly mean values for the seventh year has been carried out.

The quality of the data reported is good.

Site 7–12 Germany

The quality of the reported data is good. However, several of the sites have periods with missing data for precipitation quality. Data is missing for the first year for Langenfeld-Reusrath site 9, Bottrop site 10, Essen-Leithe site 11, and Garmisch-Partenkirchen site 12. For the second year the precipitation data missing is for site 9, site 10 and site 11. From December 1993 and the rest of the exposure period precipitation data is missing from Aschaffenburg site 8 and site 12. Extrapolated data from existing data has been used for the missing years. Ozone data exists for all German sites except site 11. The quality of the reported data is good.

Site 13–16 Italy

For Italy there are gaps in the data base for all exposure sites. Extrapolation of environmental data has been accomplished. For Milan site 15 and Venice site 16 where the gaps are small, the uncertainty is minor, but particularly for Rome site 13 where a substantial amount of environmental data is missing the uncertainty will be greater. Since missing values to some extent are spread

throughout the seasons, we will still mean that the long term average values will be acceptable. In Casaccia site 14 there has been some instrument trouble the last two years, which can affect the eight year mean values. However, since the site is situated in a more rural area, the changes from year to year is less and extrapolation from existing data can be accepted.

Site 17–20 The Netherlands

The data base is almost complete and all parameters have been reported for all sites and the quality is very good. The minor adjustments accomplished will not increase the uncertainty of the data reported.

Site 21–23 Norway

Most of the data have been reported regularly except for ozone, which is only reported from Birkenes site 23 and sun hour, which is reported from Oslo site 21 and for some periods at Birkenes. At Borregaard site 22 SO_2 and NO_2 measurements were shut down for a 3–4 months period around new year 1994 and for Oslo site 21 environmental data was missing the last two months of the eight year. The influence of the missing values on the mean values is insignificant.

Site 24–26 Sweden

The data base is almost complete and all parameters have been reported. For the two Stockholm sites the precipitation data from Stockholm South site 24 has been adapted for both sites since they are located relatively close. The minor adjustments accomplished will not increase the uncertainty for the data reported.

Site 27–30 United Kingdom

For the sites Lincoln Cathedral site 27 and Wells Cathedral site 28 the regularity was good for the six first years, but weaker the last two years. The uncertainties for the eight year's mean values are therefore higher than for the first, second and fourth mean value. As long as the emissions in the area are of the same magnitude, a prediction of the eight year mean values based on earlier observations should be possible.

For Clatteringshaws Loch site 29 only data from the first and second year is available. The site is on the west coast of Scotland in rural area and chloride is the dominating corrosion factor. For the dose/response studies this site will be of minor importance. However, the environmental and climatic conditions are most likely the same for all eight years and the average values for the two first years can be used as reasonable mean values for the site.

For Stoke Orchard site 30 the data situation is comparable with site 27 and 28 and the same argument can be valid. However, the SO_2 mean values have fluctuated much more at this site than at any of the other sites in the exposure programme. The SO_2 values for Stock Orchard should therefore be handled with care and be deleted if they turn out to be outliers in the regression analysis.

Site 31–33 Spain

The sites have almost complete data sets. Only for ozone there are gaps in the data base. Madrid site 31 had ozone measurements for the first year and Toledo site 33 has had it for the least three years. Bilbao has never reported ozone data.

The quality of the data is good.

Site 34 Russia

The site in Moscow has reported all data except the optional data the whole programme through.

The quality of the data is good.

Site 35 Estonia

The site Lahemaa is a rural site where data is reported only for the three first years. Since this is a background test site the three year's values can be used as average of the rest of the exposure time. The site should be deleted if it comes up as an outlier in the regression analysis.

Site 36 Portugal

The site Lisbon-Jeronimo Monastery has an almost complete data set. The sun hour data is not included in the report. Two questions may be raised to the data base. The time of wetness (TOW) seems to be low for a coastal area like site 36 and could come out as an outlier in equations where TOW is included. Another surprising data is the gas pollutants for the fifth year. Local construction work seems to be the explanation for this event and shall not be seen as outliers.

The rest of the data seems to be of good quality.

Site 37 Canada

The data from Dorset is complete for the first seven years. However, since this is a background site with little pollution, extrapolation of the existing data to the eight year could be done without any problem. The quality is secured as it is a measuring site for the Ministry of the Environment, Ontario.

Site 38–39 USA

The sites Research Triangle Park NC site 38 and Steubenville OH site 39 are run by EPA and all expected data is obtained. For the last years the precipitation data is reported as yearly mean values. The quality seems to be good for both sites.

10. Statistical evaluation

10.1 Trend analysis of the SO_2 concentrations

Due to environmental policy and changes in the economical situation in the different countries, changes in the pollutant levels may be expected during 8 years

a reduction of SO_2 emissions must have taken place. A trend analysis based on the yearly mean values and for the mean values of the winter months December, January and February has been carried out on all test sites with sufficient data. The results have been presented in Table 2 and as figures in Annex C. The only sites missing are site 29 and site 35. Out of 37 sites a negative trend was observed on 35 sites. The R^2 was higher than 0.5 for 28 of the sites. The highest reductions were observed at the most polluted sites. For Bilbao, site 32, the situation has been quite special since the economical recession has been dramatic the last years of the project, and the SO_2 concentration dropped from a four year average for 1987-91 of 37.3 µg/m³ down to 7.8 µg/m³ for the last four years. Even for several of the low concentration sites the SO_2 concentration has dropped. If the drop is calculated as percentage of the interception b, the yearly drop is above 10% for all sites in Finland, for Stockholm and Oslo in Scandinavia, for Garmisch-Partenkirchen in Germany and Rome in Italy. SO_2 has seasonly distribution for most places with the highest concentrations in the winter season. To confirm the trend of the yearly average values, an analysis of the concentrations in the winter period December–February has been carried out. The trend of the winter months is also shown in Table 2. The trend is the same for all sites and shows that SO_2 pollution has been reduced on almost every site in the project.

The two sites with almost no changes were Lisbon and Research Triangle Park. In Lisbon the trend is destroyed by local activities in the years 1991 and 1992. For the Research Triangle Park the level is quite constant during the project period.

Table 2: The results of trend analysis for SO_2 based on yearly mean values and winter mean values. The reported values are from the trendline $y = a[SO_2]+b$.

$y = a[SO_2]+b$:	Trendline based on yearly values			Trendline based on winter values		
Site	a	b	R2	a	b	R2
1	-6.6	83.2	0.92	-9.4	122.1	0.85
2	-0.9	21.0	0.23	-0.9	26.9	0.11
3	-6.8	97.7	0.85	-10.7	133.8	0.63
4	-2.1	18.2	0.77	-2.6	23.6	0.66
5	-0.7	5.7	0.70	-1.1	9.1	0.75
6	-2.4	22.7	0.79	-3.2	31.1	0.62
7	-1.2	14.9	0.79	-1.9	24.2	0.50
8	-1.5	21.6	0.64	-1.6	30.4	0.13
9	-2.0	28.5	0.88	-1.9	33.3	0.35
10	-2.7	57.3	0.65	-3.6	77.6	0.35
11	-1.8	32.0	0.90	-2.2	42.3	0.28
12	-1.4	11.9	0.75	-1.0	13.7	0.64
13	-5.2	44.1	0.63	-5.2	51.5	0.44
14	-0.5	8.8	0.61	-1.5	15.5	0.43
15	-8.0	88.9	0.89	-18.9	205.0	0.87
16	-2.6	27.7	0.86	-4.2	42.9	0.65
17	-2.1	37.8	0.96	-2.4	48.2	0.83
18	-0.7	10.7	0.76	-0.9	14.5	0.30
19	-1.0	13.4	0.90	-1.3	17.2	0.54
20	-0.9	14.4	0.75	-1.3	19.5	0.22
21	-1.5	14.7	0.91	-2.5	23.8	0.90
22	-2.8	46.7	0.48	-4.0	54.8	0.34
23	-0.1	1.3	0.69	-0.1	1.5	0.19
24	-1.6	15.3	0.79	-2.7	25.0	0.78
25	-2.4	19.6	0.67	-2.8	25.2	0.73
26	-0.2	3.0	0.61	-0.3	4.9	0.35
27	-1.3	22.2	0.45	-1.7	27.9	0.23
28	-0.5	7.9	0.69	-0.8	10.6	0.33
30	-0.1	14.2	0.00	-1.1	17.8	0.22
31	-1.8	19.8	0.86	-2.1	26.1	0.62
32	-6.2	50.3	0.76	-6.0	49.7	0.61
33	-0.7	8.7	0.19	-0.7	8.8	0.14
34	-0.7	27.2	0.10	-3.8	43.0	0.75
36	0.4	11.7	0.01	3.2	20.6	0.02
37	-0.2	3.7	0.33	-0.6	6.7	0.64
38	0.0	9.7	0.00	-0.8	18.9	0.16
39	-3.3	64.6	0.55	-4.0	74.2	0.43

10.2 Trend analysis of the NO_2 concentrations

The results of a trend analysis of the yearly NO_2 values and the winter month's average are given in Table 3.

Table 3: The results of trend analysis for NO_2 based on yearly mean values and winter mean values.

y = a[NO_2]+b:	Trendline based on yearly values			Trendline based on winter values		
Site	a	b	R2	a	b	R2
1	-2.7	41.5	0.73	-2.2	44.0	0.70
2	-1.3	16.0	0.68	-1.3	18.9	0.52
3	-2.0	43.1	0.84	-0.4	38.8	0.04
4	1.1	18.0	0.44	1.4	16.7	0.29
5	0.0	4.4	0.00	0.5	4.8	0.09
6	0.6	32.6	0.08	0.6	30.5	0.05
7	-0.5	13.3	0.67	-0.8	20.3	0.52
8	0.2	38.4	0.02	0.5	40.4	0.05
9	-1.7	49.3	0.69	-1.9	52.9	0.66
10	-1.9	51.9	0.86	-1.6	54.1	0.66
11	-2.0	48.8	0.96	-1.1	46.8	0.20
12	-0.1	14.0	0.03	0.5	20.9	0.05
13	-7.0	83.5	0.81	-7.6	86.8	0.78
14	-0.4	14.8	0.06	-0.1	13.1	0.00
15	-3.2	117.6	0.40	-5.5	149.1	0.39
16	3.1	37.4	0.60	1.9	49.3	0.09
17	-1.6	57.9	0.66	-1.0	56.1	0.30
18	-0.8	27.0	0.60	-1.0	34.1	0.25
19	-0.7	33.7	0.35	-1.0	37.8	0.22
20	-0.7	31.4	0.44	-1.0	37.2	0.10
21	1.3	46.7	0.40	1.9	52.5	0.42
22	0.2	17.5	0.09	1.6	19.2	0.31
23	-0.3	4.2	0.76	-0.5	6.4	0.67
24	-1.0	31.6	0.55	-1.0	33.6	0.39
25	-3.4	47.8	0.76	-2.6	46.8	0.84
26	-0.3	5.3	0.86	-0.5	8.6	0.80
27	-8.2	68.2	0.90	-8.6	76.2	0.84
28	-0.1	23.5	0.04	1.4	23.4	0.48
29						
30	-8.5	70.3	0.70	-27.2	158.4	0.46
31	-0.1	25.8	0.00	-0.7	32.8	0.08
32	-2.1	42.4	0.50	-1.5	33.2	0.53
33	0.6	12.7	0.11	-0.6	18.3	0.08
34	-6.7	78.1	0.92	-6.9	75.6	0.77
35						
36	0.8	30.1	0.09	-0.4	40.2	0.00
37	0.0	1.7	0.01	-0.2	2.1	0.27
38	-0.2	26.5	0.21	-0.3	33.2	0.15
39	-0.6	43.7	0.04	0.0	41.1	0.00

Since the NO_2 level is affected both by stationary as well as mobile sources, local regulations could influence the results at the different sites differently. However, for some countries and sites the trend is quite clear. In many of the cities a trend of reduction is obvious. The strongest reduction is observed in Lincoln and Stoke Orchard. The reduction in Rome is also high, but the amount of data is small for a complete conclusion.

Large reduction is also observed in Moscow, Stockholm and Milan. The same trend is observed at all sites in the Czech Republic and for many sites in Germany and the Netherlands. The highest increase is observed in Oslo and Venice. The Lisbon results are again influenced by the construction work in the surroundings of the site in 1991 and 1992. Finland is also a country where no reduction of NO_2 level is observed during the project.

10.3 Trend analysis for O_3 concentrations

The O_3 level has been measured at 22 of the test sites during the project. Not all of them have had registrations for the whole exposure programme and gaps in the data base often occur.

A trend analysis of the yearly mean values for 20 of the test sites is given in Table 4. Two of the sites, Rome and Casaccia, were excluded because of too big gaps in the data base. As expected there are no specific trends observed for the ozone values during the eight years of exposure, and the eight year mean values can be representative for the whole exposure period.

Table 4: The results of trend analysis for ozone based on yearly mean values and winter mean values.

$y = a[O_3]+b$:	Trendline based on yearly values		
Site	a	b	R2
5	1.0	51.7	0.21
7	-1.4	63.3	0.22
8	1.6	24.6	0.82
9	0.7	29.3	0.35
10	0.8	27.2	0.51
12	0.6	50.6	0.14
15	1.5	14.8	0.64
16	-1.9	28.5	0.10
17	-0.1	29.7	0.01
18	-1.0	44.5	0.27
19	-0.5	40.1	0.12
20	-0.7	42.0	0.23
23	-0.1	57.0	0.003
24	-0.2	46.2	0.02
26	-1.8	62.1	0.35
33	0.2	76.2	0.05
36	1.1	30.9	0.14
37	-1.3	63.1	0.32
38	-0.6	53.4	0.08
39	0.2	37.1	0.01

Because of insufficient data, a trend analysis of the months with the highest ozone values was not carried out.

10.4 Trends for H^+

In the previous environment reports scatter plot of the yearly average pH values from different years were presented. The spread was larger than for the gases and only minor deviations from the y=x were observed.

To get a better view of a possible acid rain reduction, trend analyses of the yearly deposition of H^+, the load, were carried out. In Table 5 the results for 37 sites are presented. The results from site 29 and 35 are deleted because of the small amount of data available. Because of the climatic fluctuations between the years, the spread in the total load from one year to the next is large and the R^2 for the regression equations are low. Even so, a trend of H^+-reduction is observed at 32 of the 37 sites. Among the five sites only site 3, Kopisty, and site 19, Vredepeel had a general increase in the acid load. For the three other sites the trend is mostly influence by one or two years with high load of H^+. To illustrate the interpretation, plots of the results from selected sites are presented in Annex C, Figure C.2.

Table 5: The results of trend analysis for acid load based on yearly mean values of (H^+) and mm precipitation. The reported values are from the trendline $y = a\ mm(H^+) + b$.

y=a[H+]+b	Trendline based on yearly values		
Site	a	b	R2
1	-2,40E-03	3,45E-02	0,08
2	-1,70E-03	8,11E-02	0,00
3	1,50E-03	1,00E-02	0,19
4	-1,90E-03	3,47E-02	0,66
5	-1,10E-03	2,23E-02	0,58
6	-2,90E-03	3,60E-02	0,57
7	-1,30E-03	2,64E-02	0,25
8	-1,50E-03	1,66E-02	0,14
9	-6,00E-04	2,37E-02	0,14
10	-5,00E-05	2,08E-02	0,00
11	-4,00E-04	2,07E-02	0,05
12	-2,40E-03	2,26E-02	0,63
13	-1,20E-03	1,44E-02	0,54
14	-1,00E-04	6,90E-03	0,01
15	-2,00E-03	4,54E-02	0,08
16	-1,00E-03	6,90E-03	0,74
17	-1,30E-03	3,06E-02	0,20
18	2,80E-03	-5,60E-03	0,36
19	3,00E-04	2,90E-03	0,05
20	-1,40E-03	1,47E-02	0,69
21	-2,50E-03	2,52E-02	0,49
22	-9,60E-03	9,45E-02	0,49
23	-7,30E-03	9,86E-02	0,55
24	-1,20E-03	2,33E-02	0,36
25	-1,20E-03	2,33E-02	0,36
26	-1,00E-03	2,34E-02	0,25
27	-5,00E-04	1,47E-02	0,03
28	5,10E-03	-5,20E-03	0,09
30	2,30E-03	8,54E-02	0,00
31	-3,00E-04	1,80E-03	0,40
32	-1,80E-03	1,92E-02	0,38
33	-4,00E-04	3,30E-03	0,62
34	-4,00E-04	3,30E-03	0,15
36	-1,00E-04	2,40E-03	0,06
37	-2,00E-04	4,77E-02	0,01
38	-1,90E-03	5,17E-02	0,12
39	-5,50E-03	1,04E-01	0,27

11. Combined environmental parameters

Based on the knowledge obtained in laboratory studies where synergistic effects of environmental parameters are observed, a set of combined environmental parameters has been used in the multiple regression analysis performed at the sub-centres. Two of the parameters used are $SO_2 \cdot TOW$ and $SO_2 \cdot O_3 \cdot TOW$.

At the task force meetings it has been a discussion about the uncertainty we create by using yearly average data, while the real mechanism is depending on the situation at the moment when wetness is sufficient to create a corrosive electrolyte on the surface. If SO_2 and TOW occurs statistically at the same time, yearly values should be just as good as data generated from shorter periods. SO_2 and O_3, however, often have peak values in different seasons and to use yearly average values could create equations which differ from the real dose-response relations.

To test some of these hypothesis we have compared the $SO_2 \cdot TOW$ and $SO_2 \cdot O_3 \cdot TOW$ values based on yearly values with the same parameters generated as the sum of monthly values. The results from different years had the same trend and in Figures 1 and 2 the results for the year 1988-89 are presented as scatterplots. For the factor $SO_2 \cdot TOW$ almost no changes in the results is obtained between the use of yearly and monthly values. For $SO_2 \cdot O_3 \cdot TOW$ the monthly values gave a 32% reduction of the factor and the spread in the data is larger than for $SO_2 \cdot TOW$. However, since the change seems to be linear, it will in practice only influence the constant in the dose-response functions and not the mechanism involved.

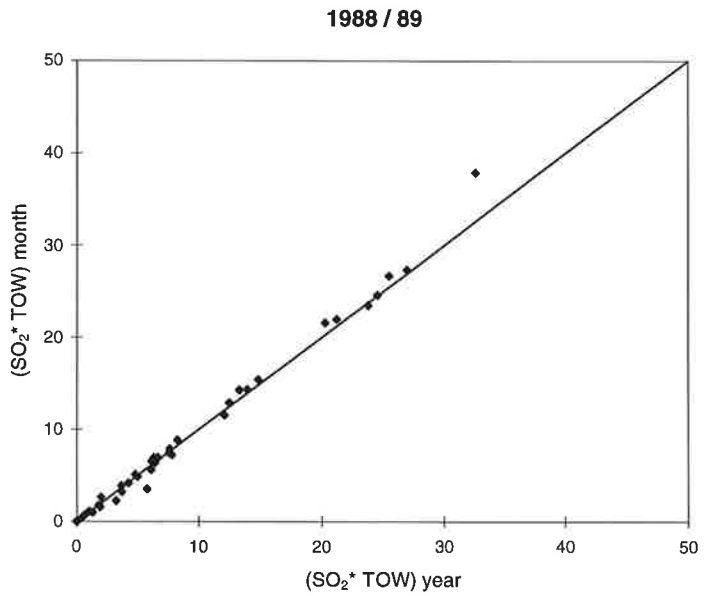

Figure 1: Scatterplot for the parameter $SO_2 \cdot TOW$ for the period September 1988 to August 1989. The values for the sites are calculated from the yearly values and as sum of monthly values.

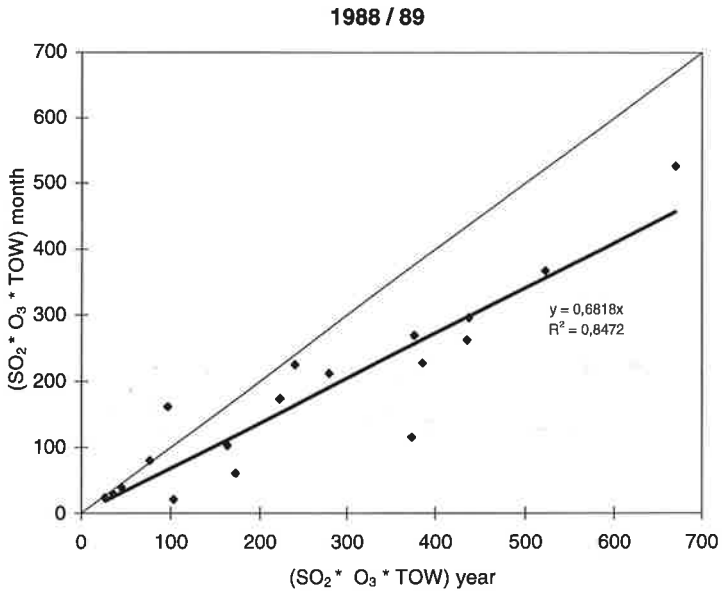

Figure 2: Scatterplot for the parameter $SO_2 \cdot O_3 \cdot TOW$ for the period September 1988 to August 1989. The values for the sites are calculated from the yearly values and as sum of monthly values.

12. The time of wetness (TOW) parameter

For mapping purposes the parameter TOW is complicated to use on an European scale. The parameter is not reported by meteorological authorities in the countries and to calculate it from existing data is time consuming. However, since an electrolyte on the surface is needed for the electrochemical reaction that causes corrosion, an expression of the time of wetness is important for the dose-response studies.

As a part of the evaluation of the four year's material exposures (Kucera et al., 1995) a correlation between TOW and the parameters yearly average temperature and relative humidity was tested. The expressed correlation was

$$TOW = 10\,700 + 136\,RH + 120\,T$$

The estimated results from the equation have been tested against the measured values in this report.

Figure 3 shows that the equation gives the most useful estimates in areas where the yearly TOW is between 3 000 and 4 000 hours and gives too high values in dry areas and too low values in wet areas of Europe.

During the evaluation of environmental data after eight years two other approaches have also been tested:

a) The earlier published work by Barton et al. (1976)

$$TOW = RH\,(aT3 + bT2 + cT) + d$$

b) The same type of equation as for the four year's results using in the monthly values:

$$\sum_{Jan.}^{Dec.} TOW = \sum_{i=Jan.}^{Dec.} \left(a + b\,RH_i + cT_i\right)$$

By using monthly values for the calculations, the idea was that the results should reflect more the seasonal climatic variation in the Scandinavian and Mediterranean regions.

The tests with these two approaches gave no improvement of the equation presented in the report No. 18.

Possibly we need to take into account the regional climatic differences if a new test shall be made. In the north the TOW will have a fluctuation with maximum both in the spring and in the autumn. In the Mediterranean area the TOW has only one season with high TOW. From the west to the east in Europe the weather conditions will go from coastal to inland climate. In which way these differences shall be expressed is not clear for the moment.

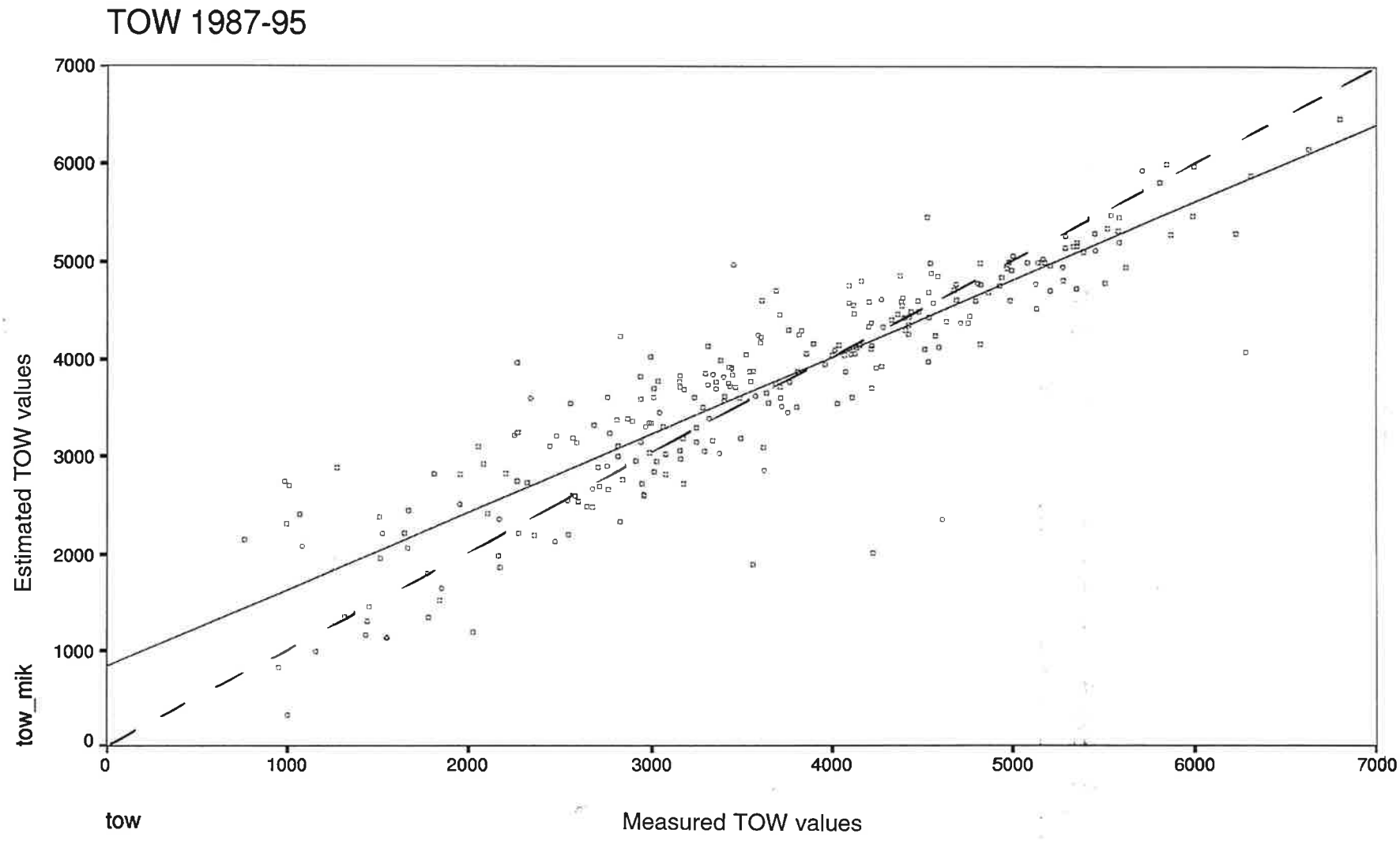

Figure 3: Comparison between the measured TOW values for all test sites and the estimated values, using the equation from the statistical analysis of the four years of exposure.

13. Conclusions

The data base obtained during the ECE-ICP for materials programme has been running now for eight years. An evaluation of the regularity and quality of the total data base has shown that for most of the test sites both the regularity and quality has been good. Sites belonging to the EMEP net of sites or to national surveillance programme were the best. The sites in urban areas had more irregularities. Local construction or regulations have stopped the measurements for periods or changed the pollution level. Some sites has been forced to move to another site in the neighbourhood. This has not caused any dramatic changes in the environmental situation for the materials.

The sites Lahemaa in Estonia and Clatteringshaws Loch in United Kingdom lost their measurement early in the project. Since they both are rural sites with low amount of pollutants, the reported data would probably be representative for a longer period.

Due to cut-backs in fundings some sites have less reported data than planned, and this will increase the uncertainty in the mean values used in the dose-response analysis. Even so most of the sites have got sufficient data for the parameters used in the dose-response analysis.

A trend analysis for the gas pollutants has been carried out. It shows that for the 37 sites where sufficient data exist, there is a clear trend for 35 sites that the SO_2 level has decreased. The highest reductions are observed on the high pollution sites in Czech Republic, Italy, Germany and Norway, but if the reduction is calculated as percentage of the first values, the highest reduction is observed in the less polluted areas. The two sites without reduction is Research Triangle Park in North Carolina, USA, where the pollutant level is fairly low, and at the Jeronimo Monastery in Lisbon, Portugal, where the pollutant levels were very high the fifth year of exposure due to heavy construction work in the area.

Even for NO_2 some cities and industrial areas have a clear trend of reduced concentrations. For some places like in the Czech Republic it could partly be caused by a change in the heating and cooking system from coal to gas. In other countries it could also be caused by changes in the traffic regulation in the cities. An analysis of the possible local changes has not been performed.

For the trend analyses of ozone only measured values were used and no indication of changes in the level were observed.

For sites where ozone is not measured, an estimated yearly value has been reported in Annex A as $O_{3\ new}$. The estimation has been carried out by using the equation

$$[O_3] = 60.5\ exp^{-0,014[NO_2]}.$$

This equation was introduced during the evaluation of the four year material exposure (Kucera et al., 1995).

The trend for the total acid load has been calculated for all sites for eight years. The acid load has been reduced on most test sites. The fluctuation is larger than for the gases. Even so, it seems to be documented that the acid load has been reduced for most sites.

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Annex A

The calculated mean values for the periods 1987/88, 1987/89, 1987/91 and 1987/95

Table A 1: Calculated mean values for the periods 1987/88, 1987/89, 1987/91 and 1987/95.

Site	Year	CLIMATE				GASES				PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	O_3new µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
1	8788	9.5	79	2830	3349	77.5	42.4		33	639.3	4.03	3.25		2.16	45.9		0.55			0.86
1	8789	9.6	77	3006	3289	75.8	37.3		36	512.5	4.19	4.98	2.76	2.22	98.1		0.74			0.74
1	8791	9.5	76	2877	3294	67.8	36		37	468.8	4.26	5.27	1.41	2.47	70.9		0.89			0.79
1	8795	9.6	75	2970	3393	53.3	29.1		41	514	4.34	7.2	2.76	2.11	52.3		0.89			0.79
2	8788	7	77	3011		19.7	17.9		47	850.2	3.85	1.48		0.77	30		0.41			0.8
2	8789	7	77	3351		17.1	16.1		48	801	4.04	2.16	1.97	0.93	30.2		0.6			1.3
2	8791	6.8	77	3261		19.6	12.6		51	784.4	4.13	2.81	1.45	1	31.2		0.97			1.31
2	8795	6.9	75	3103		17.1	10.2		52	797.8	4.03	3.78	1.97	1.21	26.2		0.97			1.31
3	8788	9.6	73	2480	3275	83.3	42.2		33	426.4	4.39	11.12		2.21	70.9		1.22			1.14
3	8789	9.7	73	2377	3237	88.9	40.7		34	438	4.58	11.22	3.73	1.82	71.8		1.39			1.22
3	8791	9.5	73	2265	3224	83.2	38.2		35	427.3	4.53	10.51	1.06	1.96	86.4		1.97			1.5
3	8795	9.5	73	2532	3328	67	34.2		38	469.1	4.45	15.48	3.73	2.16	80		1.97			1.5
4	8788	5.9	76	3322	2549	18.6	20		46	625.9	4.24	2.1	0.86	1.62	58.8					
4	8789	5.9	77	3520	2599	15.1	18.8		47	697.3	4.32	1.62	0.68	0.97	39.4					
4	8791	5.9	79	3750	2601	14.8	20.4		46	675.3	4.35	2.11	0.84	1.39	35.3					
4	8795	5.7	79	3574	2600	8.8	22.8		45	674.4	4.39	1.96	0.76	1.37	31.8					
5	8788	3.1	78	2810	2396	6.3	5	52		801.3	4.53	0.71	0.33	0.26	19.1	0.35	0.05	0.15	0.02	0.04
5	8789	3.6	78	2985	2424	5.8	5	53		733.9	4.53	0.67	0.31	0.27	18.9	0.33	0.1	0.14	0.02	0.05
5	8791	3.4	79	3081	2415	3.8	4.9	52		670.5	4.54	0.6	0.29	0.26	18.1	0.31	0.12	0.11	0.03	0.07
5	8795	3.3	80	3028	2403	2.4	4.2	56		646.4	4.57	0.51	0.27	0.24	16.3	0.25	0.14	0.11	0.03	0.07
6	8788	6.3	78	3453	2553	20.7	30.5		40	673.1	4.41	2.27	0.93	2.12	36.4					
6	8789	6.5	78	3633	2601	19	28.8		41	682.1	4.42	2.41	0.95	1.86	38.6					
6	8791	6.4	79	3776	2602	18	33.8		38	666.7	4.32	2.33	0.92	2.03	41.3					
6	8795	6.2	78	3512	2596	11.8	35.4		37	643.6	4.4	2.01	0.88	1.78	36.4					
7	8788	9.3	80	4561	3004	13.7	11.3	59		630.6	4.26	1.59	0.82	1.01	42	0.92	0.47	0.56	0.1	0.13
7	8789	9.7	81	4714	3056	12.5	12.2	65		539.5	4.29	1.54	0.84	1.19	40.9	0.93	0.55	0.63	0.13	0.15
7	8791	9.6	81	4573	3082	12.2	12	59		527	4.36	1.36	0.85	1.25	37	0.87	0.58	0.6	0.14	0.17
7	8795	9.5	81	4573	3094	9.6	11	57		571.8	4.44	2.03	1.79	1.6	31.4	1.04	0.79	0.74	0.17	0.31
8	8788	12.3	77	4282	3297	23.7	33.2	27		626.9	4.96	2.44	1.17	1.87	44.6	1.33		1.87		
8	8789	12	75	4019	3312	18.6	39.5	27		650.4	4.74	2.29	1.13	2.01	47.7	1.43		1.65		
8	8791	11.8	70	3702	3364	17.5	39.2	28		652.5	4.71	2.31	1.04	2.13	51.7	1.75		1.82	2.01	
8	8795	11.7	68	3438	3369	14.8	39.5	32		666.6	4.81	1.99	1.22	1.6	52.2	2.2	0.89	1.76	0.98	1.44

Table A 1, cont.

Site	Year	CLIMATE				GASES				PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	O_3new µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
9	8788	10.8	77	4220	3048	24.5	42.8	30		782.9	4.54	1.43		1.49	40.2					
9	8789	10.9	77	4487	3083	25.1	46.5	29		734.5	4.54	1.43		1.49	40.2					
9	8791	10.8	79	4570	3112	23.7	45.7	31		707.1	4.42	1.81	0.76	1.58	38.6	1.46	1.16	1.04	0.18	0.32
9	8795	10.9	79	4674	3128	19.4	41.5	32		728	4.54	1.43	0.66	1.49	40.2	1.07	1.02	1.29	0.13	0.28
10	8788	11.2	75	4077	3099	50.6	47.9		29	873.8	4.57	1.89		2.41	46.5					
10	8789	11.4	76	4336	3156	49.6	48.7		29	803.8	4.57	1.89		2.41	46.5					
10	8791	11.2	76	4195	3184	50.1	47.7	27		730.9	4.44	2.55	0.77	3.76	49.9	1.35	1.78	1.55	0.34	0.87
10	8795	11.2	77	4351	3172	44.8	43.4	32		758.4	4.57	1.89	0.64	2.41	46.5	1.07	1.37	1.48	0.23	0.44
11	8788	10.5	79	4537	3099	30.3	46.8		30	713.1	4.58	1.43		1.73	38.4					
11	8789	10.7	79	4624	3156	28.9	45.5		31	688.5	4.58	1.43		1.73	38.4					
11	8791	10.7	78	4376	3184	27.2	43.8		32	649.8	4.4	1.85	0.8	1.81	37.9	1.23	1.41	1.1	0.19	0.34
11	8795	10.9	78	4430	3172	24	39.8		34	716.9	4.58	1.43	0.66	1.73	38.4	1	1.1	1.29	0.21	0.35
12	8788	8	82	4989	3450	9.4	12.1	50		1491.5	4.98	0.68		0.23	16.7					
12	8789	7.9	83	4986	3458	11.3	13	49		1338.5	4.81	0.87	0.52	0.25	20.4	0.59	0.23	0.53		0.05
12	8791	7.4	83	4691	3501	8.9	13.3	53		1244.6	4.79	0.81	0.52	0.24	18.7	0.57	0.18	0.43		0.05
12	8795	7.4	83	4434	3469	5.9	13.5	53		1286.8	4.98	0.68	0.47	0.23	16.7	0.5	0.15	0.53	0.12	0.05
13	8788	15.4	66	1013	4163	29.4	69.2	26		591.4	4.6				23					
13	8789	15.6	64	1312	3962	36.9	69.4	27		550.4	4.64				23					
13	8791	16.3	65	1759	4063	34	68.7	24		511.1	4.69				34.1					
13	8795	17.7	64	1759	4163	24.5	53.4	19		604.1	4.75				23					
14	8788	14.6	71	3578		8.3	13.7	34		650.2	4.94	0.8	0.04	1.3	20.7		0.48			0.06
14	8789	14.3	71	3287		8.3	13.7	34		662.2	4.86	0.94	0.08	5.86	31.7		0.48			0.06
14	8791	14.5	71	3460		6.9	14.1	51		667.9	5	0.92	0.11	4.02	33.9		2.18	2	0.81	0.26
14	8795	14.8	72	3577		6	13.7	34		717.3	5.08	0.83	0.13	3.16	27.6		1.35	0.87	0.42	0.14
15	8788	15.3	72	3548	4782	72.2	109.2	18		1124.7	4.22	13.2		4.82	39.2					
15	8789	15.1	76	3503	4782	76.8	104.2	16		1064.2	4.34	11.13	5.41	3.87	39.2	1.51	1.86	4.5	0.63	0.24
15	8791	15	73	3246	4767	67.3	109.4	19		861.7	4.34	8.56	3.88	3.47	39.2	1.64	1.27	3.97	0.6	0.71
15	8795	14.8	71	3289	4782	52.8	103.6	21		975	4.43	8.56	3.88	3.47	39.2	1.64	1.27	3.97	0.6	0.71
16	8788	14.9	77	3616	4663	21.1	40.9	21		714	5.02	3.7	0.89	3.58	56.6					
16	8789	14.7	79	4073	4663	24	40.8	26		624.9	4.96	4.09	0.99	3.88	62.5					
16	8791	13.9	79	4214	4663	21.1	44.9	25		636.9	5.18	3.37	0.94	3.64	57.1					
16	8795	13.6	82	5005	4663	15.7	44.9	25		562.1	5.38	3.13	1.02	3.78	57.1		2.09	4.97	0.78	2.56

Table A 1, cont.

Site	Year	CLIMATE				GASES				PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	O_3new µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
17	8788	10.5	84	5875	3047	35.3	52.1	28		977.7	4.44	1.52	0.51	4.86	48.6	0.91	2.49	0.51	0.32	0.15
17	8789	10.7	83	5732	3124	33.5	54.6	30		831.8	4.43	1.53	0.54	4.76	48.7	0.95	2.5	0.44	0.32	0.17
17	8791	10.6	83	5438	3158	32.5	55	30		769.6	4.45	1.62	0.55	5.61	51.6	0.98	3.01	0.44	0.37	0.21
17	8795	10.6	83	5439	3176	28.2	50.7	29		817.4	4.51	1.42	0.56	5.08	47.1	0.92	2.78	0.39	0.35	0.23
18	8788	9.9	83	5459	2942	10.1	23.2	40		904.2	5.45	1.52	0.54	1.88	30.1	1.79	1.11	0.22	0.11	0.11
18	8789	10.1	83	5370	3002	9.1	25.1	43		807.4	5.47	1.46	0.54	2.31	31	1.78	1.64	0.21	0.14	0.11
18	8791	10	81	4911	3035	9	25.3	43		755.6	5.44	1.45	0.54	2.32	30.8	1.7	1.53	0.21	0.14	0.16
18	8795	9.9	81	4927	3053	7.7	23.6	40		817.3	5.05	1.25	0.54	2.05	27.9	1.56	1.23	0.23	0.14	0.16
19	8788	10.3	81	5354	3038	13.0	28.7	36		845	5.32	1.61	0.57	1.5	31	1.75	0.95	0.33	0.12	0.12
19	8789	10.6	81	5318	3102	11.5	31.2	38		769.2	5.33	1.61	0.59	1.72	31	1.79	1	0.31	0.13	0.11
19	8791	10.4	81	5002	3137	10.8	32.2	39		662.8	5.38	1.77	0.6	2.14	33.5	1.88	1.25	0.31	0.16	0.16
19	8795	10.4	81	5074	3157	8.9	30.6	38		745.6	5.26	1.58	0.57	1.98	31.6	1.74	1.13	0.3	0.15	0.18
20	8788	10.3	81	5125	3107	13.7	28.9	39		801.3	4.73	1.63	0.66	1.61	35.4	1.29	0.94	0.69	0.15	0.14
20	8789	10.6	81	5167	3166	12.5	30.4	41		721.8	4.7	1.61	0.66	1.66	35.4	1.33	0.94	0.6	0.13	0.13
20	8791	10.4	80	4895	3198	12.0	29.8	41		674.8	4.79	1.54	0.6	1.76	32.9	1.28	1	0.54	0.14	0.15
20	8795	10.5	81	4948	3216	10.2	28.3	39		703.1	4.91	1.33	0.54	1.54	28.9	1.21	0.89	0.47	0.13	0.16
21	8788	7.6	70	2673	2596	14.4	51.7		27	1023.8	4.48	1.36	0.62	1.45	29.3	0.37	0.64	1.72		
21	8789	7.7	70	2627	2629	13.5	51.8		27	800.3	4.54	1.62	0.63	1.55	31.6	0.39	0.67	2.05		
21	8791	7.8	71	2783	2649	10.9	50.6		28	640.1	4.55	1.61	0.65	1.63	32.7	0.47	0.75	1.86	0.18	0.16
21	8795	7.7	71	2689	2641	8.3	52.2		27	624	4.64	1.39	0.6	1.71	30.6	0.52	0.9	1.53	0.16	0.22
22	8788	6	78	3064		35.8	19.2		47	1115.5	3.93	2.93	0.71	2.21	63.8	1.11	1.14	0.46		
22	8789	6.5	76	3262		44.8	18.6		47	825.5	3.94	3.05	0.79	3.07	67.4	1.23	1.57	0.63		
22	8791	6.6	76	3449		40.5	17.7		48	613.7	3.97	2.87	0.78	3.31	67.6	1.32	1.64	0.6	0.23	0.33
22	8795	6.9	76	3448		34.2	18		47	657.8	4.11	2.35	0.69	3.27	57.4	1.08	1.67	0.68	0.22	0.26
23	8788	6.5	80	4831	2717	1.3	3.9	60		2144.3	4.25	0.93	0.56	2.04	32.2	0.57	1.19	0.15	0.14	0.17
23	8789	7	78	4437	2770	1.2	3.9	56		1652.5	4.26	0.98	0.61	2.19	34.9	0.61	1.27	0.17	0.15	0.18
23	8791	6.9	78	4296	2770	1.1	3.5	56		1588.7	4.3	0.94	0.58	2.62	35.3	0.56	1.47	0.26	0.18	0.17
23	8795	6.5	77	3965	2826	0.9	2.8	56		1472.1	4.35	0.86	0.56	2.56	33.7	0.52	1.43	0.2	0.17	0.13
24	8788	7.6	78	3959	2614	16.8	26.5	44		531	4.35	1.14	0.52	0.42	31.7	0.51	0.23	0.27	0.05	0.04
24	8789	8	72	3253	2680	14.7	28.9	45		471.5	4.32	1.15	0.49	0.45	31.8	0.46	0.23	0.29	0.05	0.04
24	8791	8	72	3272	2659	11	29.3	45		514.9	4.41	0.94	0.42	0.42	25.9	0.38	0.22	0.41	0.04	0.05
24	8795	7.7	71	2993	2679	8.4	27.1	45		513.2	4.46	0.79	0.39	0.45	24.3	0.73	0.24	0.29	0.05	0.05

Table A 1, cont.

Site	Year	CLIMATE				GASES				PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	O_3new µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
25	8788	7.6	78	3959	2614	19.6	45.8		31	531	4.35	1.14	0.52	0.42	31.7	0.51	0.23	0.27	0.05	0.04
25	8789	8.4	72	3253	2680	19.7	45.6		31	471.5	4.32	1.15	0.49	0.45	31.8	0.46	0.23	0.29	0.05	0.04
25	8791	8.2	72	3272	2659	16	42.5		33	514.9	4.41	0.94	0.42	0.42	25.9	0.38	0.22	0.41	0.04	0.05
25	8795	7.8	72	2993	2679	8.5	32.3		39	513.2	4.46	0.79	0.39	0.45	24.3	0.73	0.24	0.29	0.05	0.05
26	8788	6	83	4534	2700	3.3	5.1	55		542.7	4.27	1.3	0.6	0.54	32.6	0.71	0.4	0.27	0.08	0.11
26	8789	6.4	80	3971	2743	2.6	4.8	58		459.9	4.28	1.31	0.62	0.57	33.4	0.74	0.41	0.26	0.08	0.11
26	8791	6.7	79	3681	2724	2.4	4.6	57		444.6	4.34	1.12	0.56	0.63	32	0.62	0.45	0.22	0.07	0.11
26	8795	6.5	80	3698	2737	2	4	54		459.3	4.39	0.93	0.5	0.65	27.2	0.51	0.39	0.18	0.07	0.09
27	8788	9.2	84	6230	3059	17.7	68.6		17	364.9	4.86	1.69	0.75	2.09	41.4	0.98	0.66	2.74	0.13	0.34
27	8789	10	84	5907	3059	18.6	61.4		21	326.9	4.25	2.04	0.75	4.12	58.1	0.94	1.69	2.16	0.24	0.24
27	8791	10.3	84	5908	3059	18.2	46.1		31	292.1	4.24	1.94	0.67	3.98	55.2	0.82	1.68	1.8	0.27	0.25
27	8795	10.1	83	5894	3059	17.6	32.7		39	411.3	4.46	2.71	1.11	3.89	50	0.8	1.62	1.97	0.27	0.31
28	8788	10.8	86	5715	3150	7.2	21.5		45	447.1	5.44	1.22	0.32	4.11	46.3	0.88	3.47	0.93	0.32	0.48
28	8789	11.3	82	5670	3150	7	23.1		44	451.4	5.43	1.21	0.38	3.92	48.9	1.42	3.21	0.98	0.31	1.31
28	8791	11.9	84	5991	3150	6.5	23.3		44	463.5	5.44	1.83	0.5	5.8	64.4	2.93	4.4	1.16	0.39	2.3
28	8795	11.5	83	6152	3150	5.7	23		44	545.4	4.75	2.67	0.88	6.02	67.3	3.07	4.19	1.2	0.42	2.64
29	8788	9.8				4.3	2.3	49		1702.9	4.82	0.66	0.19	4.08		0.27	2.36	0.32	0.38	0.15
29	8789	10.4				3.6	3.5	59		1693.2	4.7	0.76	0.2	4.44		0.28	2.52	0.32	0.32	0.17
29	8791																			
29	8795																			
30	8788	10.2	78	3763		15	86		7	609.5	4.12	2.17	0.55	3.87		0.19	1.68	1.08	0.21	0.22
30	8789	10.3	76	4963		12.2	51.5		27	619.2	4.12	2.03	0.45	4.15		0.56	1.77	1.07	0.25	0.2
30	8791	10.3	76	5250		16.1	41.8		33	596.3	3.66	1.92	0.39	4.49		1.03	1.9	1.29	0.3	0.35
30	8795	10.3	76	4995		14.6	38.1		35	594.8	3.75	1.78	0.4	3.97		0.96	1.74	1.3	0.26	0.34
31	8788	14.1	66	2762	4754	18.4	24.3	26		398	5.26	1.43	0.33	0.61	26.5	0.75	0.84	1.71	0.23	0.15
31	8789	14.5	59	1882	4896	18.3	27.9	26		360.1	5.5	1.9	0.38	0.64	26.2	0.67	0.75	1.79	0.22	0.17
31	8791	14.6	58	1620	4893	15.5	24.7	26		339.9	5.44	1.59	0.4	0.66	27.5	0.68	0.73	2.04	0.2	0.14
31	8795	14.6	62	2022	4945	11.7	25.4	26		324.1	5.69	1.58	0.57	0.71	30.1	0.54	0.6	1.82	0.18	0.16
32	8788	15.2	74	4221	3616	35.2	34.7		37	1355.4	4.73	8.95	2.28	6.67	54.9	1.88	2.69	3.69		
32	8789	15.3	73	4233	3738	42.1	38.9		35	1064.5	4.87	10.92	2.75	7.8	63.8	2.27	2.91	4.93		
32	8791	15.1	73	4193	3769	37.3	37.8		36	1017.6	4.86	10.77	3.04	7.73	65.1	2.25	2.94	5.16	0	0
32	8795	14.7	74	4408	3739	24.2	34.4		38	1094.6	5.01	10.22	2.83	8.19	65.6	1.83	2.92	6.07	0.5	0.28

Table A 1, cont.

Site	Year	CLIMATE				GASES				PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	O_3new µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
33	8788	14	64	2275	4662	3.3	9.1	77		785	5.27	0.45	0.12	0.51	11.2	0.12	0.65	0.49	0.12	0.24
33	8789	14.5	62	2062	4779	6.1	12.1	77		606	5.25	0.5	0.11	0.5	12	0.15	0.58	0.53	0.1	0.16
33	8791	14.6	60	1813	4800	8	14.2	77		574.9	5.46	0.51	0.15	0.56	12.1	0.18	0.6	0.72	0.1	0.13
33	8795	14.2	59	1766	4931	5.7	15.7	77		508.3	5.6	0.55	0.18	0.61	14.1	0.22	0.52	0.58	0.09	0.11
34	8788	5.5	73	2084	2804	19.2	74.9		13	575.4	6.18	1.44	0.06	1.3	28.8	1.15				
34	8789	6.2	74	2383	2806	22.8	71.8		15	594.1	5.15	2.31	0.12	0.87	37.8	0.97				
34	8791	6.1	75	2562	2799	25.8	61.2		21	712.5	5.47	2.4	0.13	0.58	35.4	0.64				
34	8795	5.9	74	2248	2810	24.3	47.1		30	709.6	5.68	2.34	0.15	0.65	34	0.6				
35	8788	5.5	83	4092	2598	0.9	2.9		56	447.8	4.66	1.11	0.3	0.61	17.2	0.28	0.39	0.88		
35	8789	6.2	81	3851	2653	0.6	3.4		56	518.2	4.56	0.97	0.3	0.61	17.2	0.25	0.49	0.54		
35	8791	6.1	82	4076	2656	0.6	3.8		56	533.3	4.63	0.87	0.29	0.61	17.1	0.2	0.45	0.67	0.06	0.34
35	8795	6.1	82	4076	2656	0.6	3.8		56	533.3	4.63	0.87	0.29	0.61	17.2	0.2	0.45	0.67	0.06	0.34
36	8788	12.1	64	1517		6.8	36.8		36	972	6.06	11.63	1.01	3.18	63.5	0.43	2.73	2.56		0.34
36	8789	15	62	1141		9.3	29.1	35		798.7	5.73	10.64	1.31	3.56	62.9	0.48	2.74	3.59	0.64	0.53
36	8791	16.9	62	1068		9.1	30.3	34		913.8	5.56	8.04	1.53	3.64	56.8	0.56	3.02	2.47	0.45	0.49
36	8795	17.6	63	1181		14.1	33.6	34		743	5.59	9.51	2.16	7.61	62.4	0.65	4.15	3.86	0.53	0.61
37	8788	5.5	75	3252	3861	3.3	1.6	59		961.1	4.27	0.89	0.62	0.14	27.9	0.42	0.07	0.26		
37	8789	5.2	74	2964	3823	3.7	1.8	60		957.4	4.29	0.85	0.56	0.13	26.4	0.39	0.06	0.22		
37	8791	5.3	76	3231	3815	3.3	1.7	60		1018.7	4.33	0.8	0.53	0.11	25.3	0.36	0.05	0.2		
37	8795	4.7	78	3265	3753	2.8	1.7	59		767.2	4.34	0.76	0.51	0.11	25.1	0.35	0.05	0.18		
38	8788	14.6	69	3178	5158	9.6	26.9	54		846.7	4.29	0.73	0.28	0.36	24.9	0.18	0.17	0.06	0.03	0.04
38	8789	14.8	68	3009	4958	9.8	26.1	52		1129.8	4.29	0.74	0.28	0.29	24	0.19	0.13	0.05	0.02	0.03
38	8791	15.3	68	3217	4911	9.2	25.7	53		1114.9	4.36	0.67	0.27	0.35	22.1	0.2	0.16	0.06	0.02	0.04
38	8795	15.5	67	2918	4887	9.8	25.5	51		1049.1	4.37	0.67	0.28	0.34	21.8	0.2	0.16	0.06	0.02	0.03
39	8788	12.3	67	2111	4131	58.1	41.8	42		733.1	4	1.76	0.51	0.48	54	0.32	0.09	0.4	0.07	0.07
39	8789	11.6	65	1946	4084	58.8	43.4	39		833	3.95	1.79	0.5	0.41	54.5	0.38	0.07	0.37	0.07	0.05
39	8791	12	63	1736	4056	59.3	44.5	39		892.7	3.96	1.84	0.49	0.54	49.6	0.38	0.13	0.56	0.12	0.09
39	8795	11.7	64	1736	4059	49.4	40.9	38		853.8	3.98	1.88	0.48	0.53	50	0.38	0.13	0.57	0.11	0.09

Table A 2: Yearly mean values for all parameters and sites for the first face of the exposure programme 1987-1995.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
01	8788	9.5	79	2830	3349	77.5	42.4		639.3	4.03	3.25	2.76	2.16	45.9		0.55			0.86
01	8889	9.8	75	3181	3229	74.2	32.6		385.6	4.71	7.86	2.76	2.32	121.4		0.97			0.6
01	8990	10.3	74	2555	3357	58.1	34.2		380.8	4.66	6.43	1.02	3.93	40.9		1.98			1.12
01	9091	8.5	75	2940	3242	61.4	34.9		469.5	4.21	4.95	1.95	1.82	58.1					
01	9192	10	71	2789	3645	41.9	20.5		409.3	4.41	10.47	3	0.92	47.5					
01	9293	9.1	73	2627	3726	41.2	24.9		684.3	4.15	7.12	3.02	0.79	45.1					
01	9394	9.9	76	3448	3330	40.2	22.5		562.5	5.42	10.04	3.93	2.44	31.5					
01	9495	9.8	77	3529	3268	32.1	23.3		581.1	4.47	8.57	3.43	3	43.7					
02	8788	7	77	3011		19.7	17.9		850.2	3.85	1.48	1.97	0.77	30		0.41			0.8
02	8889	7	77	3690		14.5	14.2		751.8	4.53	2.99	1.97	1.12	22.8		0.77			1.76
02	8990	7.4	76	3405		25.6	8.8		703.4	4.35	1.85	1.42	1.61	26.7		3.5			1.42
02	9091	5.8	79	2939		18.4	9.4		832.1	4.21	4.84	1.78	0.6	38.3					
02	9192	7.2	73	3212		12	8.1		573.4	3.6	4.17	3.1	0.75	32					
02	9293	6.6	73	2981		17.9	8.1		921	3.72	3.81	2.43	0.48	17.7					
02	9394	7.2	73	2814		16.4	7.2		808.9	4.97	3.51	2.22	3.2	19.1					
02	9495	7.2	74	3063		12.2	8.1		941.2	4.44	6.94	1.74	1.16	24.9					
03	8788	9.6	73	2480	3275	83.3	42.2		426.4	4.39	11.12	3.73	2.21	70.9		1.22			1.14
03	8889	9.7	73	2273	3199	94.6	39.1		449.6	4.88	11.31	3.73	1.45	72.4		1.5			1.28
03	8990	9.9	72	2056	3229	78.4	36		416.6	4.62	9.05	1.29	3.1	90.9		4.72			2.79
03	9091	8.6	73	2252	3194	75.9	35.1		416.4	4.31	10.47	1.09	1.13	119.7					
03	9192	9.9	71	2899	3668	56.9	30.6		502.2	4.39	22.19	4.18	4.12	105.8					
03	9293	8.9	71	2866	3634	49	35.6		431.6	4.24	23.35	8.66	0.98	82.7					
03	9394	9.6	73	2869	3233	49.5	28.1		597.4	4.97	14.37	3.82	1.81	40.5					
03	9495	9.7	75	2759	3188	49.2	27.4		512.7	4.25	20.15	4.55	2.3	81					
04	8788	5.9	76	3322	2549	18.6	20		625.9	4.24	2.1	0.86	1.62	58.8					
04	8889	6	77	3717	2648	11.8	17.6		768.6	4.39	1.7	0.72	1.06	33.1					
04	8990	6.4	80	4127	2656	13.9	20.7		657	4.41	1.88	0.85	1.61	31.6					
04	9091	5.2	82	3834	2550		24.9		649.8	4.36	2.99	1.05	1.75	32.8					
04	9192	6.2	79	4271	2574	2.4	24.1		671.7	4.43	1.84	0.81	2.04	29.2					
04	9293	5.6	79	3446	2522	2.3	20.8		754.6	4.64	1.06	0.34	0.55	17.9					
04	9394	4	81	2268	2701	5.7	30.3		569.6	4.39	0.85	0.78	0.82	29.4					
04	9495	6	80	3607	2597	2.6	23.7		698.1	4.48	3.17	0.26	0.86	14.6					

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
05	8788	3.1	78	2810	2396	6.3	5	52	801.3	4.53	0.71	0.33	0.26	19.1	0.35	0.05	0.15	0.02	0.04
05	8889	4	79	3159	2452	5.3	4.9	54	666.4	4.52	0.61	0.28	0.28	18.7	0.31	0.13	0.12	0.02	0.06
05	8990	3.9	80	3342	2446	1.8	4.4	52	670.7	4.57	0.47	0.27	0.28	16.6	0.22	0.13	0.08	0.02	0.07
05	9091	2.9	80	3012	2367	1.8	5.6	51	543.5	4.55	0.57	0.28	0.24	18	0.33	0.16	0.1	0.03	0.13
05	9192	4.2	78	3240	2354	0.8	2	66	698.4	4.58	0.51	0.29	0.31	16.4	0.25	0.23	0.12	0.04	0.07
05	9293	3.4	81	2994	2325	0.9	2	60	609.7	4.7	0.36	0.22	0.17	12.5	0.18	0.13	0.1	0.02	0.04
05	9394	1.7	80	2340	2485	1.3	4	58	506	4.55	0.43	0.28	0.15	15.6	0.19	0.12	0.11	0.02	0.05
05	9495	3.9	83	3324	2397	0.8	7.1	55	675.4	4.61	0.37	0.23	0.17	13.1	0.16	0.1	0.08	0.02	0.06
06	8788	6.3	78	3453	2553	20.7	30.5		673.1	4.41	2.27	0.93	2.12	36.4					
06	8889	6.7	78	3813	2648	17.4	27.4		691	4.42	2.63	1.08	2.11	39.2					
06	8990	6.8	80	4017	2656	15.3	38.9		665.6	4.26	2.03	0.82	1.97	44					
06	9091	5.8	81	3820	2550	18.2	38.3		636.9	4.28	2.54	0.98	2.33	42.2					
06	9192	6.9	80	4080	2574	6	41.2		621.5	4.51	1.86	0.83	2.08	35.3					
06	9293	6.2	78	3360	2522	4.8	39.4		702.4	4.66	0.87	0.83	0.68	19.9					
06	9394	4.7	76	2268	2665	6.8	36.8		508.8	4.47	0.72	0.67	0.65	29.1					
06	9495	6.6	76	3288	2597	5.5	30.4		649.2	4.86	1.9	0.51	0.91	17.3					
07	8788	9.3	80	4561	3004	13.7	11.3	59	630.6	4.26	1.59	0.82	1.01	42	0.92	0.47	0.56	0.1	0.13
07	8889	10	81	4867	3107	11.4	13	69	448.4	4.35	1.47	0.86	1.42	39.4	0.95	0.65	0.72	0.16	0.18
07	8990	10.2	80	4390	3138	11	11.6	64	499.7	4.45	1.35	1.12	1.66	37.9	0.94	0.8	0.67	0.18	0.19
07	9091	8.9	81	4474	3078	12.9	11.9	45	529.1	4.47	0.99	0.61	0.98	28.2	0.68	0.46	0.49	0.12	0.19
07	9192	10.2	78	4406	3130	7.3	11.5	53	503.4	4.55	0.98	0.66	1.18	27.6	0.87	0.68	0.52	0.14	0.18
07	9293	8.9	81	4382	3069	8.2	10.9	57	624.4	4.47	1.01	0.71	1.1	28	0.75	0.54	0.52	0.13	0.14
07	9394	8.9	82	4827	3092	7.8	9.3	55	743.2	4.5	1.04	0.68	1.43	29.7	0.68	0.7	0.55	0.14	0.15
07	9495	9.5	81	4676	3137	3.9	8	54	595.6	4.58	7.53	8.54	3.92	20.2	2.55	1.96	1.87	0.37	1.23
08	8788	12.3	77	4282	3297	23.7	33.2	27	626.9	4.96	2.44	1.17	1.87	44.6	1.33		1.87		
08	8889	11.8	72	3756	3327	14.6	44.8	26	673.8	4.61	2.1	1.08	2.09	50.3	1.54		1.41		
08	8990	12.2	67	2541	3444	14.2	39.5	31	655.4	4.39	2.63	0.93	2.75	75.3	3.62				
08	9091	10.9	65	4227	3389	18.9	38	29	653.8	4.94	2.2	0.9	1.89	48.5	1.49		2.77	2.01	
08	9192	11.7	66	4611	3362	15.6	41.2	36	628.7	5.79	1.68	0.65	1.03	60.8	4.12	1.12	1.87	0.85	1.8
08	9293	11.4	64	3563	3393	12.6	38.8	33	561.2	4.74	1.18	2.23	0.71	54	3.1	0.47	1.89	0.84	0.8
08	9394	11.4	64	2165	3369	11.6	40.2	37	754	5.12	0.75	3.21	0.4	27.9	0.96		0.55	0.26	
08	9495	11.6	65	2359	3369	9.6	38.8	37	779										

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
09	8788	10.8	77	4220	3048	24.5	42.8	30	782.9	4.54	1.43		1.49	40.2					
09	8889	11.2	78	4754	3118	25.7	49.9	27	686	4.54	1.43		1.49	40.2					
09	8990	11.7	80	4940	3184	20.3	44.4	33	697.6	4.44	1.75	0.74	1.75	39	1.11	1.41	0.92	0.18	0.26
09	9091	9.8	80	4365	3097	23.7	45.8	32	661.7	4.41	1.88	0.77	1.41	38.1	1.84	0.89	1.17	0.19	0.39
09	9192	11.2	76	4071	3157	19.7	40.2	36	696.8	4.56	1.63	0.77	1.44	50.8	1.06	1.33	1.64	0.18	0.38
09	9293	10.7	79	4437	3156	16.3	37.3	34	619.1	4.54	0.82	0.33	1.31	61	0.9	1.22	1.13	0.19	0.39
09	9394	10.7	82	5393	3100	13.6	35.6	34	839.1	4.74	1.23	0.73	1.4	28.8	0.75	0.72	1.43	0.06	0.22
09	9495	11.4	81	5210	3161	11.1	35.9	32	841	4.56	1.27	0.59	1.58	30	0.91	0.68	1.38	0.05	0.11
10	8788	11.2	75	4077	3099	50.6	47.9		873.8	4.57	1.89		2.41	46.5					
10	8889	11.6	76	4594	3213	48.6	49.5		733.7	4.57	1.89		2.41	46.5					
10	8990	12	76	4107	3266	48.5	46.4		696.6	4.6	2.69	0.81	5.35	54.6	1.34	2.22	1.72	0.38	1.28
10	9091	10.2	77	4002	3156	53	46.8	27	619.4	4.3	2.38	0.71	1.79	43.7	1.36	1.23	1.35	0.28	0.36
10	9192	11.5	76	4137	3181	51.5	43.8	33	680.6	4.71	1.94	0.74	1.63	50.7	1.14	1.24	1.39	0.28	0.35
10	9293	10.3	78	4201	3176	41.6	37.9	34	707.3	4.68	1.14	0.32	2.04	66.7	0.83	1.79	1.43	0.29	0.43
10	9394	10.8	79	4762	3123	35.5	37.6	32	843.1	4.76	1.71	0.73	2.05	33.3	0.93	1.04	1.61	0.15	0.25
10	9495	11.8	80	4930	3163	30.2	38	34	912.9	4.48	1.68	0.54	1.72	35.1	0.95	0.88	1.36	0.07	0.12
11	8788	10.5	79	4537	3099	30.3	46.8		713.1	4.58	1.43		1.73	38.4					
11	8889	10.9	78	4711	3213	27.6	44.3		663.9	4.58	1.43		1.73	38.4					
11	8990	11.5	77	4040	3266	25.6	41.7		644.5	4.38	1.95	0.87	2.22	43.5	1.25	1.67	1.09	0.2	0.32
11	9091	9.8	79	4216	3156	24.4	41.9		577.5	4.43	1.74	0.73	1.36	31.3	1.2	1.11	1.12	0.17	0.35
11	9192	13.1	78	4387	3181	25.7	40.5		675.8	4.69	1.59	0.66	1.51	44.3	1.1	1.17	0.94	0.22	0.27
11	9293	10.1	79	4120	3176	22.9	37.2		683.6	4.6	0.79	0.33	1.55	55.5	0.72	1.37	0.99	0.22	0.45
11	9394	10.3	80	4798	3125	18.5	33.7		887.6	4.81	1.36	0.8	2.06	30.2	0.89	0.8	1.83	0.34	0.61
11	9495	10.9	78	4632	3163	16.2	32.6		889.3	4.61	1.28	0.57	1.61	29.9	0.92	0.73	1.52	0.08	0.09
12	8788	8	82	4989	3450	9.4	12.1	50	1491.5	4.98	0.68	0.47	0.23	16.7	0.5	0.15	0.53	0.12	0.05
12	8889	7.9	84	4983	3465	13.4	14	49	1185.4	4.81	0.87	0.52	0.25	20.4	0.59	0.23	0.53		0.05
12	8990	7.3	82	4201	3613	6.1	14.3	55	1183.1	4.77	0.86	0.49	0.25	18.5	0.55	0.21	0.45		0.05
12	9091	6.4	84	4586	3477	5.2	12.6	57	1118.3	4.81	0.71	0.56	0.21	17.6	0.58	0.1	0.33		0.04
12	9192	7.3	83	3693	3492	4.6	15.1	55	1091.5	5.13	0.57	0.39	0.21	12.7	0.42	0.08	0.29		0.05
12	9293	7.1	84	4545	3448	3.2	16.6	49	1552.4	5.76	0.52	0.4	0.24	14.8	0.37	0.15	0.94		0.05
12	9394	8.1	82	4094	3414	2.2	11	61	1169.2	5.21	0.49	0.52	0.19	22.8	0.83		0.3	0.12	
12	9495	7.4	83	4375	3393	2.4	11.3	52	1503										

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
13	8788	15.4	66	1013	4163	29.4	69.2	26	591.4	4.6				23					
13	8889	16.1	62	1611	3761	44.9	69.5	27	509.3	4.68				23					
13	8990	17.4	65	2267	4163	38.5	62.5	23	463.3	4.74				23					
13	9091	16.3	67	1759	4163	24.4	73.3	19	480.5	4.76				34.1					
13	9192	22.2	58	1759	4163	2.4		14	602	4.75				23					
13	9293	17.9	60	1672	4820	6.8	33.1	12	602	4.75				23					
13	9394	19.5	67	1759	3910	14.4	28.5	9	969	5.06				18.2					
13	9495	18.4	68	2234	4163	5.8	30.4	11	602	5.68				15.9					
14	8788	14.6	71	3578		8.3	13.7	34	650.2	4.94	0.8	0.04	1.3	20.7		0.48			0.06
14	8889	14	70	2996		8.3	13.7	34	674.2	4.8	1.01	0.1	7.99	38.5					
14	8990	14.3	72	3714		7.4	8.3	56	626.1	5.38	0.76	0.11	2.11	38.8					
14	9091	15.1	72	3577		6.4	18.8	45	721	5.05	0.86	0.15	2.62	32.9		2.22	2	0.81	0.26
14	9192	14.9	74	3881		4.7	16.6	38	972.6	5.47	0.84	0.13	2.04	22.3		0.97	0.25	0.15	0.08
14	9293	15.2	73	3360		7.5	14.6	27	659.4	5.3	0.53	0.14	2.23	14		0.15	0.53	0.3	0.06
14	9394	15.2	74	3930		4.7	11.1	15	717.3	4.82	0.56	0.23	2.87	32		1.18	0.93	0.77	0.07
14	9495	14.9	76	3576		5.2	8.9	19	717.3	5.08	0.83	0.13	3.16	27.6					
15	8788	15.3	72	3548	4782	72.2	109.2	18	1124.7	4.22	13.2	3.88	4.82	39.2					
15	8889	14.9	79	3458	4782	82.7	99.1	16	1003.7	4.5	8.6	5.41	2.71	57.3	1.51	1.86	4.5	0.63	0.24
15	8990	15.4	72	3036	4739	65.4	120.9	22	659.8	4.19	4.26	2.57	3.28	76.5	1.82	1.15	5.33	0.92	0.41
15	9091	14.2	69	2941	4765	50.3	107.8	21	658.4	4.54	4.84	3.07	2.34	45.1	1.62	0.47	1.47	0.16	1.83
15	9192	14.4	73	3402	4782	58.5	110	17	936.1	4.68	8.56	3.88	3.47	25.4					
15	9293	14.7	68	3299	4782	39.4	108.3	22	1041.4	4.66	8.56	3.88	3.47	24.3					
15	9394	14.9	67	3013	4843	32.4	86.6	26	1283.4	4.42	8.56	3.88	3.47	25.8					
15	9495	14.3	69	3622	4782	22.1	85.3	29	1092.2	4.43	8.56	3.88	3.47	39.2					
16	8788	14.9	77	3616	4663	21.1	40.9	21	714	5.02	3.7	0.89	3.58	56.6					
16	8889	14.7	82	4530	4663	25.7	40.7	29	535.8	4.9	4.69	1.13	4.32	72					
16	8990	13.5	79	4148	4663	20.2	51	31	488	5.24	3.7	1.1	3.21	59.1					
16	9091	12.9	80	4565	4663	16.4	47.7	14	809.9	6.12	2.18	0.77	3.56	48.7					
16	9192	13.2	86	5849	4663	18.6			511	6.49	2.86	1.07	4.53	50.7					
16	9293	13.2	86	6019	4663	11			399.6	6.36	3.58	1.52	4.9	70.8					
16	9394	13.8	84	5813	4663	7.1			538.8	6.52	2.06	0.94	3.32	53.4		2.09	4.41	0.71	2.18
16	9495	13.2	82	5519	4663	6.3			499.9	6.24	3.09	1.25	3.43	67.2		2.1	5.97	0.9	3.23

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
17	8788	10.5	84	5875	3047	35.3	52.1	28	977.7	4.44	1.52	0.51	4.86	48.6	0.91	2.49	0.51	0.32	0.15
17	8889	11	83	5589	3201	31.8	57.2	33	685.9	4.41	1.55	0.59	4.61	48.9	1.01	2.53	0.33	0.31	0.18
17	8990	11.3	81	4996	3265	32.5	56.7	32	692	4.42	1.79	0.54	7.64	59.7	0.95	4.2	0.45	0.51	0.26
17	9091	9.7	84	5293	3118	30.6	53.8	28	722.6	4.59	1.65	0.6	5.62	50	1.09	3.06	0.45	0.38	0.27
17	9192	10.7	85	5542	3138	27.8	47.3	26	721.7	4.65	1.48	0.54	4.79	44.4	1.03	2.62	0.41	0.33	0.28
17	9293	10.3	83	5337	3200	25.5	46.6	24	860.2	4.41	1.33	0.54	4.2	47	1.03	2.18	0.37	0.29	0.23
17	9394	10.1	83	5292	3166	21.5	45.4	29	883.1	4.61	1.11	0.45	4.39	40.4	0.83	2.56	0.26	0.31	0.28
17	9495	11	84	5586	3276	20.5	46.5	33	995.9	4.67	1.08	0.73	5.19	40.7	0.6	2.96	0.31	0.36	0.23
18	8788	9.9	83	5459	2942	10.1	23.2	40	904.2	5.45	1.52	0.54	1.88	30.1	1.79	1.11	0.22	0.11	0.11
18	8889	10.2	82	5280	3061	8	26.9	46	710.5	5.5	1.38	0.54	2.87	32.2	1.77	2.33	0.21	0.19	0.12
18	8990	10.9	79	4482	3119	8.5	26.5	47	705.9	5.34	1.63	0.6	2.96	35.6	1.78	1.77	0.24	0.18	0.28
18	9091	9.1	79	4422	3019	9.5	24.6	38	701.8	5.51	1.22	0.49	1.68	25.6	1.46	1.01	0.15	0.11	0.15
18	9192	10.2	79	4428	3047	8	23.5	39	686.8	5.34	1.34	0.56	2.17	27.9	1.59	1.01	0.24	0.12	0.19
18	9293	9.5	82	4808	3032	7.4	22.8	33	872.8	5.4	1.17	0.59	1.98	26.9	1.51	1.09	0.23	0.14	0.16
18	9394	9.4	83	5179	3040	5.6	21.4	38	969	5.38	1.01	0.53	1.41	23.6	1.36	0.8	0.2	0.11	0.16
18	9495	10.3	83	5358	3167	4.7	19.6	40	987.1	4.44	0.91	0.51	1.84	23.8	1.34	1	0.33	0.17	0.16
19	8788	10.3	81	5354	3038	13	28.7	36	845	5.32	1.61	0.57	1.5	31	1.75	0.95	0.33	0.12	0.12
19	8889	10.8	81	5282	3166	10.2	33.4	39	693.3	5.33	1.61	0.6	2	30.9	1.83	1.07	0.28	0.14	0.09
19	8990	11	81	4969	3221	9.9	33.1	45	569.1	5.31	2.29	0.69	3.58	43.6	2.12	2.09	0.4	0.28	0.26
19	9091	9.4	80	4401	3122	10.4	33.4	37	543.9	5.8	1.65	0.53	1.81	29.9	1.89	1.07	0.21	0.11	0.19
19	9192	10.4	80	4692	3144	8.1	32.5	38	799.2	4.9	1.91	0.58	2.21	36.6	1.7	1.19	0.37	0.17	0.25
19	9293	10	82	5084	3155	8.3	29.4	35	749.2	5.68	1.28	0.56	1.55	27.1	1.77	0.87	0.28	0.12	0.19
19	9394	10	83	5357	3154	6.7	27.9	36	936	5.09	1.27	0.49	1.78	28.3	1.41	1.06	0.27	0.14	0.2
19	9495	10.9	83	5454	3258	4.5	25.8	39	828.9	5.36	1.28	0.58	1.88	29.3	1.69	1	0.25	0.15	0.17
20	8788	10.3	81	5125	3107	13.7	28.9	39	801.3	4.73	1.63	0.66	1.61	35.4	1.29	0.94	0.69	0.15	0.14
20	8889	10.8	80	5208	3224	11.2	32	42	642.2	4.65	1.59	0.65	1.72	35.4	1.37	0.94	0.48	0.12	0.11
20	8990	11.1	77	4424	3289	10.3	26.9	45	608.8	4.98	1.47	0.54	2.37	32	1.18	1.41	0.51	0.19	0.2
20	9091	9.5	83	4824	3171	12.9	31.7	39	647	4.91	1.43	0.54	1.38	28	1.25	0.75	0.42	0.11	0.13
20	9192	10.5	82	5005	3195	11	29.1	36	541.6	5.03	1.53	0.6	1.43	31.1	1.53	0.88	0.52	0.12	0.26
20	9293	10.1	81	4688	3252	9.3	26.8	34	679.6	4.95	1.13	0.52	1.16	24.2	1.05	0.64	0.41	0.11	0.12
20	9394	10.2	82	5170	3206	7.8	25.4	38	914.2	5.13	0.96	0.42	1.36	23.3	1.05	0.8	0.33	0.11	0.18
20	9495	11.1	82	5141	3283	5.8	25.7	39	789.9	5.42	0.83	0.32	1.27	19.6	0.95	0.7	0.39	0.12	0.11

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
21	8788	7.6	70	2673	2596	14.4	51.7		1023.8	4.48	1.36	0.62	1.45	29.3	0.37	0.64	1.72		
21	8889	7.9	70	2580	2662	12.6	51.9		576.8	4.66	2.08	0.66	1.72	35.5	0.43	0.72	2.64		
21	8990	8.8	70	2864	2696	7.9	46.8		526.6	4.49	1.73	0.7	1.86	38.1	0.53	0.91	1.58	0.17	0.14
21	9091	7	75	3013	2640	8.6	51.9		433.1	4.71	1.41	0.64	1.64	30.5	0.66	0.87	1.51	0.19	0.17
21	9192	8.5	72	3169	2656	6.6	47.1		614	4.65	1.24	0.48	1.54	27.6	0.37	0.85	1.33	0.17	0.14
21	9293	7.7	68	2471	2622	6	53.4		440.1	4.81	1.39	0.57	2.1	30.9	0.59	1.19	1.37	0.18	0.32
21	9394	6.7	71	1934	2637	5.2	55.2		697.7	4.8	0.98	0.59	1.49	27	0.7	0.91	0.9	0.11	0.28
21	9495	7.5	69	2827	2618	2.9	62.9		680	4.87	0.99	0.56	2.37	28.1	0.71	1.43	1.04	0.18	0.26
22	8788	6	78	3064		35.8	19.2		1115.5	3.93	2.93	0.71	2.21	63.8	1.11	1.14	0.46		
22	8889	6.9	74	3445		54	18.3		535.4	3.96	3.28	0.97	4.85	74.9	1.46	2.47	0.97		
22	8990	6.8	76	3678		41.5	16.4		517.5	4.07	2.42	0.64	3.67	64.9	1.44	1.8	0.52	0.23	0.38
22	9091	6.7	77	3599		30.7	18		286.2	3.96	2.7	0.99	4.1	73.5	1.59	1.75	0.56	0.22	0.24
22	9192	7.8	73	3384		31.1	16.6		673.6	4.18	2.03	0.67	4.36	57.4	1.12	1.89	0.56	0.25	0.21
22	9293	7	76	3588		26.4	17.8		627.5	4.32	2.01	0.63	3.95	51.7	0.91	2.18	0.98	0.27	0.43
22	9394	6.5	76	3104		22.8	20.1		687.6	4.33	1.45	0.55	1.73	38.8	0.63	0.91	0.61	0.11	0.15
22	9495	7.4	76	3491		31.3	19.5		818.8	4.32	2.06	0.57	3.01	47	0.83	1.81	0.86	0.23	0.2
23	8788	6.5	80	4831	2717	1.3	3.9	60	2144.3	4.25	0.93	0.56	2.04	32.2	0.57	1.19	0.15	0.14	0.17
23	8889	7.5	76	4043	2823	1.1	4	53	1160.6	4.26	1.07	0.7	2.47	39.9	0.69	1.4	0.2	0.18	0.2
23	8990	7.4	77	4193	2785	0.9	3.1	54	1762.2	4.38	0.87	0.56	2.88	35.2	0.5	1.61	0.39	0.19	0.15
23	9091	6.1	80	4114	2755	1.1	3.1	55	1287.6	4.35	0.92	0.53	3.35	36.2	0.52	1.78	0.32	0.22	0.17
23	9192	7.1	77	4122	2812	0.8	1.8	64	1272	4.35	0.83	0.54	2.07	32.5	0.45	1.15	0.1	0.14	0.08
23	9293	5.9	75	3341	2818	0.7	1.8	58	1188.6	4.43	0.84	0.53	4	36.7	0.46	2.27	0.16	0.26	0.11
23	9394	4.9	79	3316	3088	0.9	2.3	53	1542.1	4.39	0.88	0.6	1.96	32.3	0.57	1.05	0.13	0.12	0.07
23	9495	6.4	76	3779	2811	0.7	2	56	1419.7	4.49	0.55	0.46	2.16	26.6	0.38	1.26	0.13	0.15	0.08
24	8788	7.6	78	3959	2614	16.8	26.5	44	531	4.35	1.14	0.52	0.42	31.7	0.51	0.23	0.27	0.05	0.04
24	8889	8.4	67	2543	2746	12.6	31.2	47	412	4.28	1.16	0.45	0.49	32	0.39	0.22	0.32	0.05	0.03
24	8990	8.7	70	3074	2694	8.4	31.6	52	473.2	4.44	0.9	0.41	0.44	23.9	0.34	0.24	0.93	0.05	0.11
24	9091	7.3	72	3643	2582	6.3	27.3	39	643.4	4.57	0.61	0.32	0.34	18.1	0.31	0.2	0.2	0.04	0.02
24	9192	8.6	70	2945	2678	5.7	28.1	45	496	4.58	0.8	0.42	0.54	25.8	3.32	0.25	0.18	0.04	0.03
24	9293	7	70	2580	2679	5.7	25.2	43	577	4.37	0.66	0.37	0.4	31.2	0.32	0.25	0.11	0.04	0.03
24	9394	6.7	70	2171	2741	5.4	25	49	392.4	4.49	0.65	0.35	0.67	22.1	0.3	0.38	0.16	0.06	0.06
24	9495	7.5	73	3160	2698	4.2	21.4	43	580.6	4.64	0.51	0.29	0.45	16	0.24	0.2	0.22	0.06	0.06

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m3	NO_2 µg/m3	O_3 µg/m3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
25	8788	7.6	78	3959	2614	19.6	45.8		531	4.35	1.14	0.52	0.42	31.7	0.51	0.23	0.27	0.05	0.04
25	8889	9.1	67	2543	2746	20	45.4		412	4.28	1.16	0.45	0.49	32	0.39	0.22	0.32	0.05	0.03
25	8990	8.7	70	3074	2692	10.3	40.2		473.2	4.44	0.9	0.41	0.44	23.9	0.34	0.24	0.93	0.05	0.11
25	9091	7.3	72	3643	2582	2.7	26.1		643.4	4.57	0.61	0.32	0.34	18.1	0.31	0.2	0.2	0.04	0.02
25	9192	8.6	70	2945	2678	3.9	25.3		496	4.58	0.8	0.42	0.54	25.8	3.32	0.25	0.18	0.04	0.03
25	9293	7	70	2580	2679	4.7	26.3		577	4.37	0.66	0.37	0.4	31.2	0.32	0.25	0.11	0.04	0.03
25	9394	6.7	70	2171	2741	5.2	25.5		392.4	4.49	0.65	0.35	0.67	22.1	0.3	0.38	0.16	0.06	0.06
25	9495	7.5	73	3160	2698	3.4	25.4		580.6	4.64	0.51	0.29	0.45	16	0.24	0.2	0.22	0.06	0.06
26	8788	6	83	4534	2700	3.3	5.1	55	542.7	4.27	1.3	0.6	0.54	32.6	0.71	0.4	0.27	0.08	0.11
26	8889	6.9	77	3407	2786	1.9	4.5	61	377	4.28	1.31	0.64	0.61	34.6	0.78	0.44	0.26	0.07	0.11
26	8990	7.6	77	3469	2754	2	4.8	59	342.3	4.37	1.02	0.56	0.63	32.6	0.52	0.45	0.2	0.07	0.14
26	9091	6.1	80	3315	2656	2.6	3.8	54	516.5	4.46	0.84	0.44	0.74	25.7	0.46	0.5	0.17	0.07	0.08
26	9192	7.2	77	3438	2761	1.8	3.6	58	412.6	4.45	0.78	0.46	0.68	22.6	0.48	0.33	0.12	0.06	0.09
26	9293	6	81	3592	2698	1.3	3.2	58	467.8	4.37	0.75	0.48	0.71	26.4	0.34	0.37	0.12	0.06	0.04
26	9394	5.6	82	3713	2789	1.8	3.6	38	490	4.37	0.87	0.46	0.65	26.4	0.51	0.34	0.14	0.06	0.09
26	9495	6.8	82	4118	2750	1.1	2.9	50	525.2	4.56	0.63	0.37	0.62	19.7	0.33	0.32	0.17	0.08	0.08
27	8788	9.2	84	6230	3059	17.7	68.6		364.9	4.86	1.69	0.75	2.09	41.4	0.98	0.66	2.74	0.13	0.34
27	8889	10.7	83	5583	3059	19.6	54.2		288.8	4.11	2.22	0.75	5.2	67	0.91	2.24	1.85	0.3	0.18
27	8990	11.1	81	5510	3059	15.5	33		308.2	4.2	1.67	0.47	3.34	42.9	0.55	1.33	1.29	0.24	0.13
27	9091	10	87	6310	3059	20.2	28.3		206.3	4.3	2.14	0.81	4.62	67.4	0.98	2.15	1.76	0.42	0.48
27	9192	11	86	5839	3059	20.4	29.9		404.1	4.47	1.5	0.55	3.4	45.6	0.74	1.29	1.2	0.27	0.46
27	9293	9.6	82	5894	3087	17.8	21.2		530	4.77	1.22	0.44	2.07	29.9	0.55	0.77	1.91	0.16	0.64
27	9394	9.4	80	5894	3001	10.9	7.8		672.9	5.6	5.41	2.51	4.72	50	0.9	2.05	2.86	0.29	0.18
27	9495	10.5	78	5894	3090	6.8	8.4		515.3	4.46	2.71	1.11	3.89	50	0.8	1.62	1.97	0.27	0.31
28	8788	10.8	86	5715	3150	7.2	21.5		447.1	5.44	1.22	0.32	4.11	46.3	0.88	3.47	0.93	0.32	0.48
28	8889	12.2	77	5625	3150	6.6	24.7		455.6	5.42	1.21	0.43	3.75	51.2	1.91	2.97	1.02	0.29	2
28	8990	12.7	83	5995	3150	6.9	25.1		415.8	5.09	1.64	0.39	6.89	58.6	1.88	5.13	1.03	0.39	1.6
28	9091	12	88	6628	3150	5	22.1		535.6	6.22	2.87	0.76	7.86	90.9	5.82	5.71	1.5	0.51	4.15
28	9192	12.9	88	6800	3150	6.4	22.1		573.3	6.08	1.77	0.68	3.78	59.1	2.66	3.78	1.41	0.35	1.37
28	9293	10.5	82	6152	3055	3.2	22.6		614.4	3.72	2.5	0.78	8.3	104.1	4.87	4.91	1.44	0.58	4.38
28	9394	9.7	80	6152	3133	5			846.5	5.37	5.93	2.2	7.29	67.3	3.06	3.53	1.12	0.48	3.82
28	9495	11.2	79	6152	3264	3.3			696.2	4.75	2.67	0.88	6.02	67.3	3.07	4.19	1.2	0.42	2.64

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
29	8788	9.8				4.3	2.3	49	1702.9	4.82	0.66	0.19	4.08		0.27	2.36	0.32	0.38	0.15
29	8889	10.9				3.2	4.1	62	1683.5	4.61	0.84	0.2	4.74		0.29	2.65	0.32	0.28	0.19
29	8990	10.7	96			3.5	4.2	57	2046.3	4.84	1.18	0.06	10.87		0.32	6	0.74	0.6	0.49
29	9091	6.7				5.2	4.6	45											
29	9192																		
29	9293																		
29	9394																		
29	9495																		
30	8788	10.2	78	3763		15	86		609.5	4.12	2.17	0.55	3.87		0.19	1.68	1.08	0.21	0.22
30	8889	9.2	75	6163		9.1	34.2		628.8	4.13	1.89	0.36	4.43		0.92	1.85	1.07	0.28	0.19
30	8990	10.3	76	5873		12.1	30		648.2	3.84	1.38	0.29	5.05		0.44	2.2	0.8	0.31	0.24
30	9091	10.3	76	5200		27.4	39.2		498.5	3.18	2.37	0.36	4.59		2.96	1.82	2.47	0.38	0.79
30	9192	10.3	76	3968		8.7	25.1		588.9	4.66	1.2	0.45	1.9		0.66	1.09	1.32	0.12	0.3
30	9293	10.3	76	4995		9.3	27.6		549.2	4.31	1.54	0.52	3.31		0.43	1.7	0.65	0.32	0.26
30	9394	10.3	76	4995		14.6	38.1		594.8	3.75	1.78	0.4	3.97		0.96	1.74	1.3	0.26	0.34
30	9495	10.3	76	4995		14.6	38.1		594.8	3.75	1.78	0.4	3.97		0.96	1.74	1.3	0.26	0.34
31	8788	14.1	66	2762	4754	18.4	24.3	26	398	5.26	1.43	0.33	0.61	26.5	0.75	0.84	1.71	0.23	0.15
31	8889	15	52	974	5037	18.1	31.9		322.1	6.42	2.49	0.45	0.69	25.9	0.57	0.63	1.89	0.21	0.19
31	8990	15.2	56	1160	4795	15.3	22.8		331.5	5.14	1.23	0.45	0.73	31.7	0.65	0.65	2.69	0.18	0.11
31	9091	14.4	57	1555	4987	10.3	20.1		307.9	6.14	1.26	0.37	0.62	25.8	0.71	0.78	1.91	0.21	0.1
31	9192	13.8	59	1447	4724	8.6	21.9		309.8	6.46	1.34	0.37	0.54	26.2	0.48	0.43	1.57	0.14	0.1
31	9293	14.3	67	2319	4999	8.2	32.1		360.1	6.56	1.36	0.56	0.53	34.8	0.53	0.32	1.35	0.12	0.11
31	9394	15	72	3164	5098	7.6	29.6		339.4	6.4	1.87	0.94	0.97	32.7	0.25	0.58	1.15	0.15	0.18
31	9495	15.7	68	2766	5167	7.8	20.6		223.9	6.79	1.76	1.34	1.19	39.6	0.32	0.54	2.61	0.27	0.33
32	8788	15.2	74	4221	3616	35.2	34.7		1355.4	4.73	8.95	2.28	6.67	54.9	1.88	2.69	3.69		
32	8889	15.3	73	4245	3859	49.1	43		773.5	5.32	14.26	3.54	9.71	79	2.92	3.28	7.02		
32	8990	16.2	71	3769	3879	41.4	41.8		830.7	4.71	13.26	3.83	9	78.9	2.51	3.28	6.86		
32	9091	13.9	74	4536	3723	23.5	31.6		1110.8	5	8.61	2.98	6.65	57.1	2.03	2.75	4.33	0	0
32	9192	14.2	77	5133	3750	7.1	32.8		1031.9	5.02	9.54	3.29	8.14	63.6	1.77	3.04	5.42	0.4	0.27
32	9293	14.2	75	4573	3690	9.3	21.4		1560.3	5.1	12.28	2.31	7.49	73.8	1.1	2.66	9.17	0.48	0.34
32	9394	13.6	75	4500	3640	8.5	32		1012.1	5.51	8.43	2.59	10.26	64.9	1.38	3.34	6.6	0.67	0.32
32	9495	14.8	73	4275	3757	6.3	25.9		1082.2	5.31	7.56	2.59	9.01	58.1	1.83	2.69	5.09	0.54	0.23

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
33	8788	14	64	2275	4662	3.3	9.1	77	785	5.27	0.45	0.12	0.51	11.2	0.12	0.65	0.49	0.12	0.24
33	8889	15.1	59	1848	4895	8.6	14.8	77	426.9	5.23	0.59	0.1	0.47	13.4	0.21	0.45	0.58	0.08	0.08
33	8990	15.5	61	2147	4803	13.5	16.3	77	610.4	6.2	0.6	0.2	0.72	11.3	0.24	0.74	1.21	0.12	0.14
33	9091	13.9	56	945	4839	6	16.1	77	477.1	5.74	0.41	0.17	0.54	13.4	0.18	0.47	0.56	0.09	0.06
33	9192	13.6	58	1426	4891	4.6	14.9	77	539.6	5.73	0.7	0.23	0.53	13.4	0.32	0.36	0.49	0.07	0.08
33	9293	13.4	61	1888	4915	1.7	24	76	432.5	5.93	0.54	0.17	0.58	16.2	0.24	0.38	0.42	0.06	0.13
33	9394	13.9	58	2025	5041	3.5	19.3	74	468	5.91	0.48	0.17	0.82	17.8	0.12	0.49	0.26	0.07	0.06
33	9495	14.8	57	1465	5402	4.2	10.5	82	327.4	6.26	0.66	0.29	0.8	20.8	0.45	0.38	0.48	0.09	0.11
34	8788	5.5	73	2084	2804	19.2	74.9		575.4	6.18	1.44	0.06	1.3	28.8	1.15				
34	8889	7	75	2682	2808	25.5	69.5		612.7	4.89	3.09	0.15	0.53	45.8	0.8				
34	8990	5.7	76	2894	2809	30.8	50.1		860.2	6.22	2.56	0.14	0.33	29.4	0.45				
34	9091	6	75	2589	2774	26	53.2		801.8	6.12	2.35	0.15	0.43	38.5	0.35				
34	9192	7.2	72	1960	2809	28	38.7		534.4	6.07	1.87	0.15	0.56	36.7	0.41				
34	9293	5.7	74	2444	2755	28.7	37.1		880.6	6.04	2.19	0.14	0.64	30.3	0.47				
34	9394	4	74	1817	2811	18.9	31.5		745	6.06	2.39	0.19	0.81	33.1	0.67				
34	9495	5.6	71	1514	2906	16.4	29.5		666.7	6.08	2.65	0.2	0.85	31.9	0.67				
35	8788	5.5	83	4092	2598	0.9	2.9		447.8	4.66	1.11	0.3	0.61	17.2	0.28	0.39	0.88		
35	8889	6.9	80	3609	2707	0.3	3.8		588.5	4.5	0.87	0.3	0.61	17.2	0.23	0.56	0.29		
35	8990	6.7	81	4332	2699	0.6	6.5		532.7	4.65	0.75	0.31	0.81	19.9	0.2	0.55	0.51	0.08	0.42
35	9091	5.5	83	4272	2621				564	4.76	0.81	0.26	0.48	15.1	0.12	0.28	1.06	0.05	0.29
35	9192	6.1	82	4076	2656	0.6	3.8		533.3	4.63	0.87	0.29	0.61	17.1	0.2	0.45	0.67	0.06	0.34
35	9293	6.1	82	4076	2656	0.6	3.8		533.3	4.63	0.87	0.29	0.61	17.1	0.2	0.45	0.67	0.06	0.34
35	9394	6.1	82	4076	2656	0.6	3.8		533.3	4.63	0.87	0.29	0.61	17.1	0.2	0.45	0.67	0.06	0.34
35	9495	6.1	82	4076	2656	0.6	3.8		533.3	4.63	0.87	0.29	0.61	17.1	0.2	0.45	0.67	0.06	0.34
36	8788	12.1	64	1517		6.8	36.8		972	6.06	11.63	1.01	3.18	63.5	0.43	2.73	2.56		0.34
36	8889	17.8	61	764		11.9	21.5	35	625.4	5.46	9.8	1.71	4.15	62	0.55	2.74	4.07	0.64	0.58
36	8990	19.3	63	989		6.6	32.9	29	1103.1	5.57	5.31	1.9	3.99	53.2	0.59	2.52	1.95	0.42	0.45
36	9091	18.2	62	1000		11.3	30.1	42	954.5	5.37		1.45	3.37	51	0.63	4.08	1.97	0.36	0.5
36	9192	18.2	60	1087		41.1	45.7	25	503.6	5.54		1.51	1.89	76.9	1.05	1.45	4.73	0.19	0.19
36	9293	18	62	1072		16.1	35	37	544.9	5.83	17.1	6.47	11.87	82.6	1.4	4.96	7.95	0.67	0.35
36	9394	18.3	65	1278		10	33.3	34	797.8	5.59	8.34	1.41	13.92	69.6	0.43	8.42	5.83	0.78	1.19
36	9495	19.1	67	1745		4.7	35	49	442.6	5.75	10.47	3.81	27.19	57.9	0.77	6.13	4.59	0.54	0.8

Table A 2, cont.

Site	Year	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
		Temp C	Rh %	Tow hours	Rad. Mjoule/m2	SO_2 µg/m^3	NO_2 µg/m^3	O_3 µg/m^3	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond µS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
37	8788	5.5	75	3252	3861	3.3	1.6	59	961.1	4.27	0.89	0.62	0.14	27.9	0.42	0.07	0.26		
37	8889	4.8	73	2676	3785	4.2	2	60	953.6	4.33	0.81	0.51	0.12	24.8	0.36	0.06	0.18		
37	8990	5	79	3431	3790	3	2	64	1103	4.38	0.76	0.53	0.11	25	0.34	0.04	0.22		
37	9091	5.9	79	3566	3822	2.8	1	52	1057	4.34	0.75	0.46	0.08	23.8	0.31	0.03	0.14		
37	9192	3.8	75	3078	3608	2.1		61	983	4.4	0.69	0.46	0.13	23.4	0.32	0.06	0.13		
37	9293	4.3	80	3302	3633	2.1		56	1080	4.32	0.68	0.46	0.08	25.4	0.34	0.03	0.12		
37	9394	3.2	81	3432	3728	1.5	1.7	59	1022.8	4.34	0.76	0.51	0.11	25.1	0.35	0.05	0.18		
37	9495	5.2	80	3386	3800	3.3	1.7	46	1022.8	4.34	0.76	0.51	0.11	25.1	0.35	0.05	0.18		
38	8788	14.6	69	3178	5158	9.6	26.9	54	846.7	4.29	0.73	0.28	0.36	24.9	0.18	0.17	0.06	0.03	0.04
38	8889	15	66	2839	4758	10	25.3	50	1412.8	4.29	0.75	0.28	0.24	23.4	0.19	0.1	0.05	0.02	0.03
38	8990	16.3	66	3026	4960	9.2	25.3	57	1106.7	4.45	0.61	0.24	0.36	19.6	0.26	0.16	0.06	0.02	0.03
38	9091	15.5	69	2967	4767	7.9	25.2	52	1093.3	4.43	0.59	0.28	0.47	20.9	0.16	0.21	0.08	0.03	0.04
38	9192	15.4	66	2714	4743	13	26.2	48	940.2	4.54	0.59	0.33	0.32	17.9	0.29	0.17	0.07	0.03	0.02
38	9293	15.5	64	2644	4913	10.1	25.7	41	982.3	4.46	0.64	0.26	0.32	18.9	0.17	0.15	0.09	0.05	0.03
38	9394	15.6	66	3078	5060	8.9	26.6	49	973.4	4.42	0.72	0.33	0.3	22	0.15	0.12	0.06	0.04	0.05
38	9495	15.8	68	3250	4737	9.3	22.9	55	1037.6	4.32	0.65	0.33	0.23	19	0.13	0.1	0.09	0.08	0.07
39	8788	12.3	67	2111	4131	58.1	41.8	42	733.1	4	1.76	0.51	0.48	54	0.32	0.09	0.4	0.07	0.07
39	8889	10.9	64	1781	4037	59.4	44.8	36	932.8	3.91	1.82	0.49	0.35	54.9	0.42	0.05	0.35	0.06	0.04
39	8990	11.2	61	1391	4007	55.2	40.5	33	967.4	4.08	2	0.46	0.46	46.3	0.35	0.09	0.56	0.08	0.06
39	9091	13.6	59	1787	4047	64.3	50.9	44	937.6	3.88	1.74	0.52	0.83	45.4	0.41	0.29	0.87	0.25	0.19
39	9192	11.6	61	1459	4031	33.9	25.5	30	729.9	4.15	2.04	0.4	0.39	47.5	0.39	0.05	0.42	0.07	0.04
39	9293	11.8	65	1532	4051	43.1	43.3	36	729.4	4.03	1.91	0.48	0.39	48.3	0.37	0.11	0.52	0.08	0.06
39	9394	10.6	68	1673	4077	44.3	40.8	40	1043	4.2	2.41	0.39	0.46	59.2	0.34	0.18	0.71	0.05	0.04
39	9495	11.8	69	2206	4090	38.3	39.8	42	756.8	4.12	2.14	0.4	0.36	51.1	0.41	0.2	0.81	0.04	0.03

Annex B

The reported monthly and yearly values for September 1994 to August 1995

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (01) Prague-Letnany, The Czech Rep.

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	14.6	81.	394.	128.	22.1	23.8		56.1	4.32	5.50	3.10	11.00	38.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Oct94	7.0	83.	423.	106.	45.5	31.4		17.9	5.48	16.00	7.00	2.50	65.8					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Nov94	6.7	82.	416.	55.	44.6	27.9		19.5	5.86	16.00	6.50	2.90	62.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Dec94	2.5	85.	260.	56.	41.4	26.9		45.5	5.32	6.80	4.00	1.70	37.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jan95	-0.4	84.	142.	44.	55.0	27.3		33.3	4.58	8.00	5.50	2.50	57.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Feb95	4.9	78.	263.	80.	35.3	23.0		21.2	5.70	5.80	4.20	1.00	32.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Mar95	3.3	75.	249.	148.	38.1	18.8		35.2	4.81	12.30	6.30	0.90	46.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Apr95	9.4	74.	295.	124.	32.3	17.6		40.6	4.07	18.30	7.40	0.90	74.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
May95	13.3	68.	231.	222.	16.9	15.2		92.2	4.44	6.80	1.80	3.50	37.8					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jun95	15.4	79.	390.	154.	20.8	27.5		85.2	4.13	11.50	0.90	2.80	40.5					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jul95	21.6	68.	212.	306.	13.1	21.5		60.2	4.50	7.40	3.10	1.70	39.6					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Aug95	18.8	69.	254.	228.	20.7	18.8		74.2	5.78	2.00	2.20	1.50	36.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Mean	9.8	77.	3529.	1651.	32.1	23.3		581.1	4.47	8.57	3.43	3.00	43.7					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (02) Kasperske Hory, The Czech Rep.

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.1 d	75. d	337. d		12.4 m	5.3 m		58.5 m	6.28 m	3.80 m	2.70 m	2.70 m	31.0 m					
	100%	100%	100%															
Oct94	5.1 d	76. d	313. d		12.8 m	7.9 m		45.6 m	6.02 m	0.80 m	1.60 m	0.90 m	17.0 m					
	100%	100%	100%															
Nov94	4.6 d	84. d	474. d		12.9 m	11.3 m		50.0 m	4.22 m	5.70 m	2.10 m	0.90 m	27.0 m					
	100%	100%	100%															
Dec94	0.7 d	80. d	172. d		14.1 m	11.3 m		75.9 m	4.43 m	0.80 m	0.80 m	0.90 m	19.0 m					
	100%	100%	100%															
Jan95	-3.3 d	82. d	111. d		18.4 m	9.0 m		100.9 m	4.53 m	0.80 m	0.80 m	0.90 m	16.0 m					
	100%	100%	100%															
Feb95	3.1 d	73. d	169. d		10.8 m	11.1 m		19.4 m	4.18 m	1.20 m	3.20 m	0.90 m	33.0 m					
	100%	100%	100%															
Mar95	0.9 d	72. d	106. d		16.1 m	7.9 m		88.4 m	4.20 m	38.20 m	3.00 m	0.90 m	31.0 m					
	100%	100%	100%															
Apr95	7.1 d	75. d	347. d		11.5 m	3.8 m		50.7 m	3.95 m	18.30 m	7.40 m	0.90 m	74.0 m					
	100%	100%	100%															
May95	11.0 d	66. d	166. d		6.3 m	5.4 m		90.5 m	5.40 m	2.70 m	1.10 m	1.00 m	17.6 m					
	100%	100%	100%															
Jun95	12.3 d	76. d	365. d		17.5 m	11.7 m		198.9 m	4.30 m	2.70 m	1.00 m	1.00 m	23.2 m					
	100%	100%	100%															
Jul95	17.7 d	65. d	196. d		6.1 m	7.0 m		54.9 m	4.62 m	7.00 m	1.00 m	1.00 m	20.9 m					
	100%	100%	100%															
Aug95	14.8 d	72. d	307. d		7.3 m	6.0 m		107.5 m	4.92 m	3.30 m	1.00 m	1.90 m	18.5 m					
	100%	100%	100%															
Mean	7.2 d	74. d	3063. d		12.2 m	8.1 m		941.2 m	4.44 m	6.94 m	1.74 m	1.16 m	24.9 m					
	100%	100%	100%															

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (03) Kopisty, The Czech Rep.

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	14.0	79.	401.	107.	57.0	33.0		40.2	4.56	21.00	4.90	6.10	57.2					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Oct94	7.1	81.	408.	85.	66.1	30.9		29.8	4.38	39.00	5.00	3.00	126.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Nov94	6.6	82.	418.	51.	46.0	29.2		19.4	4.52	32.00	8.00	2.00	146.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Dec94	2.2	87.	261.	38.	59.9	32.0		41.4	4.23	18.00	4.00	1.00	92.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jan95	-0.8	85.	140.	37.	43.4	30.0		41.9	4.25	14.00	4.00	2.00	80.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Feb95	4.2	78.	216.	75.	53.8	30.5		27.6	4.42	37.80	5.40	3.50	79.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Mar95	3.5	71.	139.	134.	47.9	27.4		35.4	4.27	16.50	6.30	1.70	86.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Apr95	9.6	69.	184.	112.	45.3	22.6		49.5	4.19	18.30	7.40	0.90	74.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
May95	13.4	66.	156.	198.	58.0	18.1		69.1	4.78	6.80	1.80	3.50	37.8					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jun95	15.5	74.	277.	135.	51.5	23.7		109.7	3.95	11.50	1.40	1.00	77.5					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Jul95	21.6	63.	75.	263.	27.8	24.7		17.7	4.60	54.30	13.10	1.00	161.5					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Aug95	19.6	61.	84.	237.	33.5	26.7		31.0	4.50	37.00	8.10	3.50	85.2					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														
Mean	9.7	75.	2759.	1472.	49.2	27.4		512.7	4.25	20.15	4.55	2.30	81.0					
	d	d	d	d	m	m		m	m	m	m	m	m					
	100%	100%	100%	100%														

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (04) Espoo, Finland

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	11.3	91.	294.	110.	2.0	24.0		129.4										
	m	m	m	m	m	m		m										
Oct94	3.6	80.	121.	114.	3.0	27.0		60.7										
	m	m	m	m	m	m		m										
Nov94	-0.8	89.	211.	62.	2.0	24.0		24.9										
	m	m	m	m	m	m		m										
Dec94	-0.2	94.	432.	14.	3.0	21.0		84.5										
	m	m	m	m	m	m		m										
Jan95	-2.7	50.	181.	37.	7.0	25.0		30.1										
	m	m	m	m	m	m		m										
Feb95	-0.4	91.	387.	44.	1.0	25.0		82.2										
	m	m	m	m	m	m		m										
Mar95	0.3	88.	439.	65.	3.0	25.0		48.7										
	m	m	m	m	m	m		m										
Apr95	3.2	75.	189.	175.	3.0	26.0		27.1										
	m	m	m	m	m	m		m										
May95	8.5	81.	453.	222.	2.0	26.0		83.1										
	m	m	m	m	m	m		m										
Jun95	17.0	79.	365.	299.	2.0	24.0		35.7	4.92	1.70	0.43	1.30	21.7					
	m	m	m	m	m	m		m	m	m	m	m	m					
Jul95	16.9	74.	204.	321.	1.0	15.0		27.7	5.64	4.30	0.40	1.80	10.9					
	m	m	m	m	m	m		m	m	m	m	m	m					
Aug95	15.9	73.	331.	297.	2.0	22.0		64.0	4.24	3.50	0.10	0.20	12.2					
	m	m	m	m	m	m		m	m	m	m	m	m					
Mean	6.0	80.	3607.	1760.	2.6	23.7		698.1	4.48	3.17	0.26	0.86	14.6					
	m	m	m	m	m	m		m	xm	xm	xm	xm	xm					

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (05) Ahtari, Finland

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	8.3	85.	531.	84.	0.2	2.3	47.	52.3	4.66	0.36	0.17	0.11	11.6	0.12	0.07	0.05	0.01	0.04
	d	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%				100%	100%	100%	100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Oct94	2.4	89.	465.	84.	0.5	2.4	47.	108.5	4.79	0.23	0.15	0.10	9.0	0.10	0.06	0.04	0.01	0.08
	d	m	m	m	d	d	xd	m	m	m	m	m	m	m	m	m	m	m
	100%				93%	90%	35%											
Nov94	-3.2	91.	219.	38.	0.6	6.1	40.	34.9	4.64	0.24	0.26	0.28	12.0	0.08	0.14	0.07	0.03	0.04
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	80%	100%											
Dec94	-2.4	93.	243.	9.	1.5	4.6	35.	49.1	4.26	0.68	0.46	0.41	27.0	0.24	0.25	0.04	0.04	0.06
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jan95	-5.3	86.	48.	41.	2.7	39.0	42.	23.0	4.43	0.45	0.41	0.29	20.0	0.17	0.16	0.13	0.04	0.05
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Feb95	-3.4	92.	183.	35.	0.9	4.6	51.	67.9	4.55	0.24	0.31	0.39	14.0	0.11	0.20	0.04	0.03	0.02
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Mar95	-1.2	84.	213.	92.	1.2	2.9	61.	51.9	4.47	0.45	0.39	0.25	18.0	0.21	0.13	0.13	0.03	0.04
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Apr95	0.8	72.	126.	180.	0.9	3.3	77.	36.0	4.64	0.47	0.28	0.19	14.0	0.23	0.12	0.09	0.04	0.06
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
May95	7.4	73.	261.	223.	0.4	2.3	76.	65.0	4.68	0.53	0.17	0.07	13.0	0.26	0.04	0.12	0.02	0.05
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jun95	15.9	72.	297.	265.	0.3		69.	66.3	4.66	0.57	0.22	0.06	14.0	0.26	0.04	0.19	0.04	0.17
	m	m	m	m	m		m	m	m	m	m	m	m	m	m	m	m	m
Jul95	14.0	71.	342.	286.	0.1		60.	60.5	4.86	0.18	0.09	0.05	7.0	0.08	0.04	0.05	0.01	0.03
	m	m	m	m	m		m	m	m	m	m	m	m	m	m	m	m	m
Aug95	13.4		396.	232.	0.2	3.3	52.	60.0	4.78	0.24	0.12	0.07	8.0	0.13	0.04	0.02	0.01	0.03
	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Mean	3.9	83.	3324.	1569.	0.8	7.1	55.	675.4	4.61	0.37	0.23	0.17	13.1	0.16	0.10	0.08	0.02	0.06
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (06) Helsinki-Vallila, Finland

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.0 d 100%	78. m	294. m	110. m	3.0 m	31.0 m		129.0 d 100%										
Oct94	5.7 d 100%	76. m	264. m	114. m	3.0 m	28.0 m		60.7 d 100%										
Nov94	0.5 m	81. m	270. m	62. m	3.0 m	33.0 m		28.6 m										
Dec94	0.3 m	86. m	402. m	14. m	9.0 m	25.0 m		78.7 m										
Jan95	-2.0 m	80. m	180. m	37. m	11.0 m	25.0 m		42.7 m										
Feb95	0.2 m	83. m	372. m	44. m	7.0 m	27.0 m		64.8 m										
Mar95	0.7 m	81. m	414. m	65. m	6.0 m	29.0 m		47.4 m										
Apr95	3.7 m	69. m	162. m	175. m	6.0 m	31.0 m		21.9 m										
May95	8.8 m	71. m	270. m	222. m	5.0 m	38.0 m		65.7 m										
Jun95	17.3 m	70. m	216. m	299. m	5.0 m	32.0 m		30.7 m	4.84 m	1.90 m	0.40 m	1.30 m	23.4 m					
Jul95	15.8 m	70. m	240. m	321. m	4.0 m	29.0 m		27.7 m	4.64 m	4.50 m	1.40 m	1.80 m	22.1 m					
Aug95	16.3 m	69. m	204. m	297. m	4.0 m	37.0 m		51.3 m	5.07 m	0.50 m	0.10 m	0.20 m	11.1 m					
Mean	6.6 m	76. m	3288. m	1760. m	5.5 m	30.4 m		649.2 m	4.86 xm	1.90 xm	0.51 xm	0.91 xm	17.3 xm					

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (07) Waldhof-Langenbrugge, Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.0	86.	518.	106.	2.6	6.2	52.	45.8	4.58	22.59	26.24	5.67	2.0	6.77	2.24	5.63	0.77	0.83
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	98%	98%	98%	98%	97%	98%	98%	98%	98%
Oct94	6.8	85.	428.	124.	5.2	3.8		57.6	4.64	16.81	21.16	4.67	1.8	4.56	2.36	4.08	0.59	1.16
	m	m	m	m	m	m		d	d	d	d	d	d	d	d	d	d	d
								100%	99%	99%	99%	99%	99%	98%	99%	99%	99%	99%
Nov94	7.0	91.	583.	52.	7.4	10.5	36.	40.3	4.49	24.68	27.52	16.06	2.6	7.12	8.79	5.31	1.08	1.10
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	96%	96%	96%	98%	98%	98%	98%	98%	98%
Dec94	3.7	92.	484.	43.	5.0	14.0	34.	49.8	4.55	22.33	26.03	10.27	2.3	6.93	5.26	4.42	0.91	1.05
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	96%	96%	96%	98%	95%	96%	96%	96%	96%
Jan95	0.2	91.	381.	66.	10.6	12.7	32.	86.8	4.64	0.60	0.41	3.39	27.6	0.28	1.72	0.38	0.30	1.43
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Feb95	4.3	88.	424.	64.	1.8	10.8	37.	67.0	4.62	0.65	0.55	0.64	21.7	0.51	0.36	0.48	0.09	1.30
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	90%	90%	90%	98%	90%	92%	92%	92%	92%
Mar95	2.8	80.	258.	133.	4.6	10.0	40.	61.1	4.91	0.91	0.69	2.05	27.8	1.09	0.98	0.34	0.16	1.03
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Apr95	8.5	77.	326.	156.	1.9	5.0	58.	41.1	4.67	1.00	0.76	2.07	30.8	0.98	0.97	0.57	0.20	1.29
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	99%	99%	99%	98%	99%	99%	99%	99%	99%
May95	12.5	71.	316.	213.	3.6	4.8	78.	32.9	4.18	1.82	1.15	0.50	48.4	1.47	0.11	0.55	0.08	2.42
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	97%	98%	98%	98%	97%	98%	98%	98%	98%	98%
Jun95	15.1	76.	382.	184.	1.1	5.9	60.	27.2	4.40	1.07	0.79	0.89	30.2	0.83	0.41	0.63	0.12	1.30
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Jul95	20.7	70.	308.	275.	1.6	6.8	83.	56.6	4.56	0.86	0.55	0.18	24.3	0.70	0.06	0.31	0.05	0.50
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Aug95	19.5	66.	268.	268.	1.7	5.6	88.	29.4	4.76	1.40	0.73	1.77	33.8	1.37	0.82	0.79	0.17	2.03
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	97%	97%	97%	98%	98%	97%	97%	97%	97%
Mean	9.5	81.	4676.	1684.	3.9	8.0	54.	595.6	4.58	7.53	8.54	3.92	20.2	2.55	1.96	1.87	0.37	1.23
	m	m	m	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d
								100%	98%	97%	97%	97%	99%	97%	98%	98%	98%	98%

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (08) Aschaffenburg, Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	15.4 m	67. m	236. m		8.0 m	37.0 m	32. m	67.0 m										
Oct94	9.7 m	67. m	279. m		12.0 m	42.0 m	23. m	41.0 m										
Nov94	9.4 m	77. m	356. m		11.0 m	42.0 m	11. m	31.0 m										
Dec94	5.4 m	72. m	182. m		12.0 m	39.0 m	22. m	55.0 m										
Jan95	1.7 m	72. m	181. m		14.0 m	41.0 m	28. m	134.0 m										
Feb95	6.1 m	71. m	206. m		8.0 m	39.0 m	31. m	80.0 m										
Mar95	5.1 m	63. m	113. m		11.0 m	40.0 m	43. m	78.0 m										
Apr95	11.1 m	62. m	147. m		9.0 m	38.0 m	43. m	66.0 m										
May95	14.8 m	58. m	141. m		9.0 m	42.0 m	55. m	71.0 m										
Jun95	17.0 m	61. m	189. m		5.0 m	32.0 m	42. m	43.0 m										
Jul95	22.9 m	57. m	161. m		7.0 m	38.0 m	61. m	44.0 m										
Aug95	20.5 m	58. m	168. m		9.0 m	35.0 m	48. m	69.0 m										
Mean	11.6 m	65. m	2359. m		9.6 m	38.8 m	37. m	779.0 m										

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (09) Langenfeld-Reusrath, Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	14.3	90.	578.	72.	9.3	35.1	25.	97.8	4.43	0.95	0.48	1.05	25.8	0.60	0.43	0.97	0.02	0.00
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	9.9	86.	532.	125.	12.5	39.5	18.	64.6	4.77	1.06	0.30	0.50	19.0	0.57	0.20	0.46	0.00	0.00
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	98%	100%	100%	100%	98%	100%	100%	100%	100%	100%
Nov94	10.3	94.	650.	57.	11.2	38.3	10.	69.7	5.51	1.51	0.67	1.66	27.6	1.07	0.94	1.15	0.11	0.05
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	6.0	89.	506.	57.	11.9	37.0	17.	75.7	4.63	1.42	0.51	1.76	26.3	0.85	0.46	1.33	0.03	0.03
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	3.2	85.	385.	51.	14.5	39.0	20.	144.2	4.75	0.77	0.27	2.78	26.2	0.64	1.48	0.71	0.17	0.04
	d	d	m	m	d	*d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	74%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	6.7	85.	448.	57.	10.3	33.0	25.	102.8	5.15	0.97	0.45	1.31	17.1	0.35	0.53	4.02	0.00	0.03
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	92%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	5.2	78.	353.	133.	13.3	35.1	33.	62.7	4.89	1.59	0.60	2.52	34.9	1.71	0.87	0.87	0.02	0.13
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr95	9.7	81.	432.	108.	11.4	34.2	29.	53.3	4.40	2.36	1.34	1.48	53.7	1.67	0.83	1.25	0.10	0.38
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	83%	100%	100%	97%	100%	100%	100%	97%	100%	100%	100%	100%	100%
May95	13.7	72.	344.	214.	11.0	37.9	47.	38.2	4.07	1.45	0.96	0.79	47.2	0.69	0.18	2.93	0.00	0.20
	d	d	m	m	d	xd	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	45%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	15.4	78.	392.	180.	8.9	30.1	41.	84.2	4.19	1.41	0.81	0.74	37.1	0.85	0.00	0.46	0.00	0.37
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	96%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	21.5	71.	322.	266.	9.0	36.8	63.	27.3	4.25	1.44	0.95	0.49	39.7	0.65	0.19	1.62	0.04	0.30
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug95	20.2	66.	268.	253.	9.4	36.0	52.	20.5	5.91	2.33	1.13	3.27	49.1	4.27	1.98	1.24	0.00	0.00
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	11.4	81.	5210.	1573.	11.1	35.9	32.	841.0	4.56	1.27	0.59	1.58	30.0	0.91	0.68	1.38	0.05	0.11
	d	d	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	89%	98%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (10) Bottrop, Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	14.8	85.	489.	87.	28.1	39.4	24.	61.5	5.00	2.00	0.68	2.09	36.0	1.03	0.89	1.83	0.16	0.02
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	10.2	82.	476.	142.	40.8	37.2	16.	37.0	6.50	1.45	0.43	0.88	28.6	1.05	0.15	4.23	0.00	0.00
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			96%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	10.4	90.	612.	63.	35.1	44.2	9.	130.3	4.60	1.48	0.42	1.06	28.3	1.03	0.43	0.87	0.00	0.00
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			96%	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	6.2	88.	484.	60.	39.4	38.6	14.	93.6	4.31	1.64	0.41	1.44	29.7	0.68	0.36	0.80	0.01	0.01
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	3.8	84.	405.	53.	33.3	39.8	20.	181.2	4.56	0.94	0.26	2.46	25.1	0.49	1.47	1.30	0.12	0.04
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	7.0	84.	413.	45.	33.7	38.5	23.	86.5	4.90	1.38	0.41	1.63	27.5	0.83	0.83	0.73	0.00	0.02
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	5.6	78.	353.	129.	33.6	45.9	32.	65.4	5.10	2.10	0.46	3.37	38.4	0.97	1.90	0.94	0.25	0.18
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr95	10.2	79.	378.	109.	27.9	33.0	39.	43.3	4.50	3.00	1.17	1.99	57.3	2.01	1.04	2.17	0.06	0.43
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May95	14.2	72.	335.	203.	25.5	39.0	55.	51.8	4.52	1.52	0.52	0.80	35.5	1.15	0.34	1.07	0.00	0.22
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			96%	96%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	15.9	77.	389.	167.	22.2	31.3	50.	84.7	4.08	1.94	0.83	0.90	48.1	0.85	0.39	0.86	0.00	0.31
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	22.3	71.	319.	262.	22.1	37.8	64.	26.6	4.59	2.44	1.02	0.76	52.3	2.23	0.53	1.99	0.24	0.47
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	96%	96%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug95	20.5	68.	277.	256.	20.5	32.2	59.	51.0	4.04	2.80	1.05	2.08	61.0	1.32	1.53	2.91	0.07	0.33
	d	d	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	11.8	80.	4930.	1576.	30.2	38.0	34.	912.9	4.48	1.68	0.54	1.72	35.1	0.95	0.88	1.36	0.07	0.12
	d	d	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	99%	99%			99%	98%	99%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (11) Essen-Leithe, Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.6	87.	531.	87.	31.5	34.9		92.6	4.91	1.34	0.59	2.08	30.4	0.84	0.97	2.34	0.17	0.02
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			80%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	9.1	82.	464.	143.	18.3	38.6		90.1	4.81	0.80	0.28	0.39	15.5	0.53	0.04	0.34	0.00	0.00
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	9.9	89.	572.	63.	16.2	40.8		73.8	4.50	1.46	0.62	1.46	30.4	0.99	0.43	1.11	0.03	0.02
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	5.9	87.	451.	60.	14.6	30.3		100.0	4.68	0.91	0.40	1.29	21.7	0.53	0.31	1.46	0.02	0.05
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	93%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	3.3	81.	356.	53.	17.3	33.1		165.2	4.72	0.70	0.24	2.38	22.7	0.30	1.24	1.39	0.11	0.09
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	6.3	81.	372.	45.	12.8	33.0		87.9	5.02	0.92	0.42	1.49	21.4	0.64	0.71	3.97	0.02	0.03
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	89%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	4.9	74.	291.	129.	16.1	30.4		45.4	4.95	1.76	0.56	3.47	38.2	1.32	1.75	0.75	0.14	0.19
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr95	9.3	77.	354.	109.	20.0	32.6		36.6	4.29	2.80	1.14	1.96	60.9	2.12	0.96	1.12	0.05	0.33
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	86%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May95	13.1	72.	318.	203.	14.6	29.3		37.3	4.30	1.73	0.75	0.89	42.8	1.06	0.43	1.07	0.04	0.20
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	93%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	14.8	76.	371.	167.	10.7	25.7		57.7	4.12	1.60	0.88	0.70	41.6	0.81	0.22	0.46	0.00	0.27
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	20.8	69.	302.	262.	11.7	30.1		67.7	4.47	2.09	1.45	0.62	45.1	1.91	0.29	1.69	0.14	0.15
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug95	19.7	65.	250.	256.	14.1	32.1		35.0	6.17	1.79	0.62	2.92	38.2	3.05	1.81	1.26	0.33	0.12
	d	d	m	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%	93%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	10.9	78.	4632.	1577.	16.2	32.6		889.3	4.61	1.28	0.57	1.61	29.9	0.92	0.73	1.52	0.08	0.09
	d	d	m	m	d	d		m	m	m	m	m	m	m	m	m	m	m
	100%	100%			98%	96%												

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (12) Garmisch-Partenkirchen, Germany

	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.8 m	85. m	502. m	166. m	1.0 m	8.0 m	42. m	104.0 m										
Oct94	7.2 m	85. m	477. m	159. m	2.0 m	11.0 m	28. m	83.0 m										
Nov94	6.0 m	89. m	536. m	77. m	2.0 m	13.0 m	22. m	69.0 m										
Dec94	-0.4 m	93. m	270. m	44. m	5.0 m	17.0 m	25. m	102.0 m										
Jan95	-3.5 m	90. m	130. m	49. m	6.0 m	20.0 m	46. m	145.0 m										
Feb95	2.1 m	86. m	279. m	76. m	3.0 m	17.0 m	45. m	63.0 m										
Mar95	0.8 m	79. m	98. m	135. m	3.0 m	12.0 m	72. m	135.0 m										
Apr95	6.8 m	77. m	336. m	107. m	2.0 m	10.0 m	67. m	131.0 m										
May95	11.1 m	75. m	382. m	171. m	1.0 m	8.0 m	81. m	145.0 m										
Jun95	12.1 m	82. m	479. m	115. m	2.0 m	7.0 m	60. m	200.0 m										
Jul95	18.7 m	76. m	394. m	233. m	1.0 m	7.0 m	68. m	262.0 m										
Aug95	15.2 m	83. m	492. m	147. m	1.0 m	6.0 m	63. m	64.0 m										
Mean	7.4 m	83. m	4375. m	1479. m	2.4 m	11.3 m	52. m	1503.0 m										

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (13) Rome, Italy

	CLIMATE				GASES			PRECIPITATION					PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	26.2	66.	159.		2.2	32.9	11.	48.4	5.79				22.4					
	d	*d	d		d	d	d	d	d				d					
	100%	70%	100%		96%	90%	76%	100%	100%				100%					
Oct94	20.5	67.	240.		11.8	33.9	6.	120.0	5.75				13.9					
	d	d	d		d	d	*d	d	d				d					
	100%	96%	100%		96%	90%	54%	100%	100%				100%					
Nov94	16.6	78.	285.		16.7	31.8	1.	37.6	5.42				13.7					
	d	*d	d		d	d	xd	d	d				d					
	86%	50%	100%		100%	83%	26%	100%	100%				100%					
Dec94	12.7	80.	414.		22.3	28.8		0.6	5.77				40.0					
	d	d	d		xd	d		d	d				d					
	96%	90%	100%		29%	96%		100%	100%				100%					
Jan95	10.2	63.	206.			29.7	1.											
	d	d	d			d	d											
	100%	100%	96%			100%	100%											
Feb95	13.1	71.	232.			29.7	2.											
	d	d	d			d	d											
	96%	79%	93%			96%	96%											
Mar95	13.1		139.		4.3	31.1	10.											
	d		+m		*d	d	d											
	93%				54%	100%	100%											
Apr95			215.		3.5	31.6	12.											
			+m		d	d	d											
					100%	100%	100%											
May95			136.		2.7	28.2	15.											
			+m		d	d	d											
					100%	100%	100%											
Jun95	23.8	60.	91.		2.5	28.6	18.											
	d	d	d		d	d	d											
	100%	100%	100%		100%	100%	100%											
Jul95	29.6	58.	69.		2.5	28.6	21.											
	d	d	d		d	d	d											
	100%	100%	100%		100%	100%	100%											
Aug95			48.															
			m															
Mean	18.4	68.	2234.		5.8	30.4	11.	602.0	5.68				15.9					
	*m	*m	m		*m	m	*m	+y	m				m					

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (14) Casaccia, Italy

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	21.4 d 96%	71. d 96%	239. d 96%					37.9 d 100%	5.71 d 100%				26.6 d 100%					
Oct94	16.2 d 100%	70. d 100%	273. d 100%					210.9 d 100%	5.15 d 100%				10.2 d 100%					
Nov94	12.8 d 96%	80. d 96%	411. d 96%		5.2 *d 66%	8.9 *d 66%	4. *d 66%	58.2 d 100%	5.14 d 100%				8.8 d 100%					
Dec94	9.0 d 93%	83. d 93%	483. d 93%					47.1 d 100%	4.74 d 100%				22.0 d 100%					
Jan95							16. d 100%											
Feb95							11. d 93%											
Mar95							7. *d 67%											
Apr95							12. *d 60%											
May95							13. *d 60%											
Jun95							27. *d 60%											
Jul95							43. d 83%											
Aug95							30. d 100%											
Mean	14.9 xd 32%	76. xd 32%	3576. +y		5.2 xm	8.9 xd 5%	19. *d 57%	717.3 +y	5.08 d	0.83 +y	0.13 +y	3.16 +y	27.6 d					

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (15) Milan, Italy

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	19.1	82.	481.	181.	6.1	79.2	20.	252.4										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Oct94	13.8	81.	469.	204.	21.6	121.1	7.	60.0										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Nov94	10.2	90.	676.	47.	39.1	107.5	6.	185.2										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Dec94	5.9	86.	586.	86.	51.0	93.8	2.	46.4										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Jan95	4.5	64.	211.	153.	55.3	92.9	4.	49.4										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Feb95	8.1	76.	374.	132.	39.7	91.6	4.	94.0										
	d	d	d	d	d	d	d	d										
	96%	96%	96%	96%	96%	96%	96%	100%										
Mar95	9.1	57.	121.	279.	21.3	51.3	23.	39.8										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Apr95	13.6	56.	123.	330.	11.2	75.8	40.	63.8										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
May95	17.4	58.	170.	254.	7.1	86.0	45.	167.4										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Jun95	19.6	60.	127.	264.	7.1	95.4	52.	109.4										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Jul95	26.0	54.	158.	336.	3.7	78.8	78.	5.4										
	d	d	+m	d	d	d	d	d										
	100%	100%		100%	100%	100%	100%	100%										
Aug95	23.3	60.	126.	338.	2.7	51.0	63.	19.0										
	d	d	d	d	d	d	d	d										
	100%	100%	100%	100%	100%	100%	100%	100%										
Mean	14.3	69.	3622.	2606.	22.1	85.3	29.	1092.2	4.43	8.56	3.88	3.47	39.2					
	d	d	m	d	d	d	d	d	+y	+y	+y	+y	+y					
	99%	99%		99%	99%	99%	99%	100%										

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (16) Venice, Italy

Date	CLIMATE Temp C	Rh %	Tow hours	Sun hours	GASES SO2 ug/m3	NO2 ug/m3	O3 ug/m3	PRECIPITATION mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	PREC.-OPTION NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	19.2	84.	498.		9.8			37.4										
	d	d	d		d			+m										
	100%	100%	100%		100%													
Oct94	13.2	81.	463.		9.0			81.7										
	d	d	d		d			+m										
	100%	100%	100%		100%													
Nov94	10.2	93.	666.		10.4			65.0										
	d	d	d		d			+m										
	100%	100%	100%		100%													
Dec94	4.9	88.	530.					24.8										
	d	d	d					+m										
	100%	100%	100%															
Jan95	3.3	77.	358.		11.2			24.0	5.29	9.73	1.10	6.20	107.9		3.70	5.90	1.80	10.30
	d	d	d		d			m	m	m	m	m	m		m	m	m	m
	100%	100%	100%		100%													
Feb95	5.8	90.	576.		4.0			35.0	6.44	2.59	0.87	4.62	67.8		2.84	4.11	0.73	3.44
	d	d	d		d			d	d	d	d	d	d		d	d	d	d
	96%	96%	96%		96%			100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Mar95	7.7	76.	383.		13.0			0.0										
	d	d	d		d			d										
	100%	100%	100%		100%													
Apr95	11.4	81.	454.		4.7			71.0	6.84	2.80	1.17	3.88	77.0		2.28	7.71	0.99	4.63
	d	d	d		d			d	d	d	d	d	*d		d	d	d	d
	100%	100%	100%		96%			100%	100%	100%	100%	100%	57%		100%	100%	100%	100%
May95	16.7	80.	426.		1.7			27.0	6.88	3.67	2.27	4.37	90.8		2.60	9.10	1.23	4.33
	d	d	d		d			d	d	d	d	d	d		d	d	d	d
	100%	100%	100%		96%			100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Jun95	18.8	82.	427.		2.1			28.0	6.87	3.23	1.60	3.12	81.8		1.70	8.10	0.91	3.47
	d	d	d		d			d	d	d	d	d	d		d	d	d	d
	100%	100%	100%		100%			100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Jul95	24.8	76.	330.		1.8			53.0	6.89	1.73	1.00	1.71	42.1		1.19	4.34	0.62	0.31
	d	d	d		d			d	d	d	d	d	d		d	d	d	d
	100%	100%	100%		100%			100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Aug95	21.9	78.	413.		1.5			53.0	6.91	1.80	1.20	2.20	40.4		1.50	3.80	0.60	0.22
	d	d	d		d			d	d	d	d	d	d		d	d	d	d
	100%	100%	100%		100%			100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Mean	13.2	82.	5519.		6.3			499.9	6.24	3.09	1.25	3.43	67.2		2.10	5.97	0.90	3.23
	d	d	d		m			m	m	m	m	m	m		m	m	m	m
	99%	99%	99%															

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (17) Vlaardingen, Netherlands

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.9	88.	566.	95.	18.7	44.9	24.	255.9	4.83	0.97	0.34	6.10	39.4	0.51	3.41	0.30	0.41	0.17
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	9.9	86.	535.	138.	25.9	55.0	16.	87.7	4.51	1.02	0.27	2.19	31.2	0.45	1.20	0.19	0.14	0.06
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	93%											
Nov94	10.3	93.	640.	59.	28.9	49.2	11.	27.6	4.42	1.55	0.69	3.29	46.5	1.06	1.76	0.34	0.25	0.18
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	93%											
Dec94	5.7	93.	587.	68.	28.2	49.9	20.	101.2	4.62	0.84	0.24	2.55	27.5	0.36	1.41	0.17	0.17	0.09
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					87%	90%	83%											
Jan95	4.4	88.	478.	74.	28.9	44.7	27.	102.3	4.49	1.24	3.00	10.87	64.7	0.41	6.14	0.33	0.74	0.27
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	90%											
Feb95	7.0	88.	533.	69.	23.9	46.9	29.	125.5	4.56	0.93	0.34	2.88	33.6	0.52	1.58	0.18	0.22	0.11
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Mar95	5.8	81.	392.	182.	24.7	45.1	38.	78.3										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
Apr95	9.1	82.	422.	146.	14.8	42.4	41.	46.7										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
May95	12.6	76.	311.	260.	18.0	56.1	47.	12.2										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
Jun95	14.6	82.	428.	202.	12.5	39.0	42.	67.1										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
Jul95	19.9	79.	372.	262.	15.3	44.9	50.	60.4	6.07	1.66	0.92	0.76	33.3	1.76	1.08	0.87	0.11	1.09
	m	m	m	m	d	d	d	w	xw	xw	xw	xw	xw	xw	xw	xw	xw	xw
					100%	100%	100%	100%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%
Aug95	19.4	75.	322.	280.	7.5	39.5	49.	31.0	5.15	1.53	0.53	15.84	79.5	0.80	9.14	0.65	1.11	0.51
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Mean	11.0	84.	5586.	1835.	20.5	46.5	33.	995.9	4.67	1.08	0.73	5.19	40.7	0.60	2.96	0.31	0.36	0.23
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					98%	98%	96%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (18) Eibergen, Netherlands

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.3	89.	561.	96.	4.0	17.5	30.	216.9	6.11	0.77	0.42	1.20	19.4	1.08	0.68	0.53	0.09	0.13
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	83%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	8.6	87.	526.	141.	7.1	27.4	21.	76.3	6.18	0.74	0.26	0.81	15.3	1.09	0.49	0.11	0.04	0.07
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					96%	96%	87%											
Nov94	8.7	94.	653.	60.	3.8	25.7	12.	53.4	5.32	1.22	0.71	1.63	27.9	1.64	0.87	0.16	0.12	0.14
	m	m	m	m	d	d	*d	m	m	m	m	m	m	m	m	m	m	m
					86%	80%	66%											
Dec94	4.8	91.	538.	69.	4.5	23.9	22.	103.6	5.91	0.54	0.33	0.76	12.8	0.88	0.36	0.07	0.05	0.02
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jan95	2.7	88.	450.	81.	6.2	25.5	28.	100.4	5.92	0.89	0.30	4.30	29.5	1.08	2.45	0.18	0.29	0.11
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Feb95	6.0	87.	472.	74.	4.2	19.5	34.	130.4	5.83	0.63	0.30	1.47	16.3	0.90	0.80	0.09	0.10	0.04
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Mar95	4.6	78.	321.	170.	5.7	18.1	45.	70.5	5.69	1.11	0.66	3.26	30.7	1.47	1.86	0.24	0.21	0.17
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Apr95	8.9	81.	404.	128.	4.2	15.3	47.	70.6	5.76	1.51	0.82	2.66	34.7	2.10	1.42	0.22	0.17	0.15
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
May95	12.4	75.	330.	207.	4.5	16.9	63.	19.3	6.03	0.87	0.63	1.54	25.1	1.78	0.76	0.27	0.12	0.16
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jun95	14.5	81.	437.	175.	2.8	12.1	47.	11.8	2.53	2.09	1.06	9.04	92.0	1.13	3.02	6.01	4.00	4.01
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jul95	20.0	76.	354.	279.	4.4	18.6	64.	67.1	6.10	1.09	0.86	0.70	26.8	1.88	0.54	0.54	0.07	0.30
	m	m	m	m	d	d	d	w	*w	*w	*w	*w	*w	*w	*w	*w	*w	*w
					100%	93%	90%	100%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
Aug95	18.7	73.	312.	275.	5.4	15.2	61.	66.8	6.30	1.24	0.90	1.57	33.0	2.55	0.81	0.23	0.10	0.10
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					80%	96%	80%											
Mean	10.3	83.	5358.	1755.	4.7	19.6	40.	987.1	4.44	0.91	0.51	1.84	23.8	1.34	1.00	0.33	0.17	0.16
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					96%	95%	93%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (19) Vredepeel, Netherlands

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.5 m	89. m	558. m	93. m	3.6 d 100%	25.5 d 93%	28. d 100%	118.8 m	6.15 m	0.89 m	0.41 m	1.58 m	20.5 m	1.26 m	0.85 m	0.26 m	0.13 m	0.07 m
Oct94	9.3 m	86. m	530. m	140. m	6.2 d 100%	28.7 d 100%	21. d 100%	50.1 m	6.18 m	0.77 m	0.24 m	0.65 m	14.4 m	1.08 m	0.32 m	0.11 m	0.02 m	0.09 m
Nov94	9.9 m	95. m	659. m	56. m	5.2 d 96%	33.7 d 93%	12. d 100%	50.7 m	6.05 m	1.22 m	0.52 m	0.75 m	22.2 m	1.74 m	0.39 m	0.14 m	0.06 m	0.11 m
Dec94	5.2 m	94. m	594. m	73. m	4.2 d 100%	26.4 d 100%	24. d 100%	78.8 m	5.85 m	0.80 m	0.28 m	0.66 m	14.5 m	1.01 m	0.38 m	0.09 m	0.04 m	0.09 m
Jan95	3.5 m	89. m	458. m	71. m	4.2 d 100%	28.7 d 93%	32. d 100%	69.9 m	5.99 m	1.06 m	0.32 m	4.55 m	32.9 m	1.23 m	2.70 m	0.22 m	0.33 m	0.20 m
Feb95	6.6 m	87. m	491. m	75. m	3.9 d 85%	22.0 d 85%	40. d 85%	148.6 m										
Mar95	5.2 m	80. m	373. m	195. m	6.3 *d 61%	26.1 *d 58%	47. *d 54%	47.6 m	5.92 m	1.57 m	0.83 m	2.86 m	35.6 m	2.16 m	1.50 m	0.26 m	0.19 m	0.16 m
Apr95	9.3 m	82. m	408. m	129. m	4.7 d 100%	22.0 d 100%	45. d 100%	60.0 m	5.92 m	1.58 m	0.69 m	1.66 m	30.7 m	2.16 m	0.89 m	0.18 m	0.11 m	0.10 m
May95	12.9 m	75. m	347. m	230. m	5.2 d 100%	28.7 d 83%	59. d 90%	15.0 m	5.95 m	2.39 m	1.62 m	1.43 m	48.0 m	3.53 m	0.67 m	0.93 m	0.16 m	0.22 m
Jun95	14.9 m	81. m	430. m	186. m	2.8 d 100%	16.0 d 100%	50. d 100%	113.0 m	5.66 m	1.11 m	0.77 m	0.47 m	24.6 m	1.90 m	0.22 m	0.19 m	0.05 m	0.15 m
Jul95	20.6 m	75. m	347. m	271. m	4.4 d 100%	25.8 d 93%	58. d 96%	31.8 w 100%	4.46 w 100%	2.89 xw 32%	0.84 xw 32%	7.52 w 100%	101.6 w 100%	2.51 xw 32%	3.41 xw 32%	0.76 xw 32%	0.75 w 100%	1.03 w 100%
Aug95	19.9 m	68. m	259. m	274. m	4.0 d 100%	25.7 d 96%	55. d 93%	44.6 m	4.59 m	2.29 m	1.01 m	2.23 m	43.4 m	2.59 m	1.20 m	0.49 m	0.19 m	0.20 m
Mean	10.9 m	83. m	5454. m	1793. m	4.5 d 95%	25.8 d 91%	39. d 93%	828.9 m	5.36 m	1.28 m	0.58 m	1.88 m	29.3 m	1.69 m	1.00 m	0.25 m	0.15 m	0.17 m

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (20) Wijnandsrade, Netherlands

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.7	85.	509.	87.	5.2	28.0	29.	106.9	6.45	0.83	0.34	1.21	22.1	1.40	0.71	0.43	0.15	0.23
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	96%											
Oct94	9.7	82.	464.	138.	6.2	27.4	24.	44.3	5.67	0.71	0.22	0.49	13.3	0.59	0.30	0.48	0.07	0.10
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Nov94	9.9	91.	621.	64.	6.0	30.3	14.	44.3	4.89	1.05	0.56	0.74	23.4	1.05	0.32	0.32	0.09	0.11
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Dec94	5.6	90.	572.	70.	5.7	26.0	29.	88.0	5.57	0.67	0.26	0.66	13.2	0.59	0.33	0.41	0.06	0.02
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jan95	3.5	87.	428.	68.	6.8	23.6	37.	84.2	5.26	0.95	0.30	2.68	24.3	0.87	1.48	0.30	0.18	0.06
	m	m	m	m	d	*d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	74%	93%											
Feb95	6.5	86.	493.	68.	4.8	20.5	42.	120.5										
	m	m	m	m	d	d	d	m										
					100%	92%	100%											
Mar95	5.2	78.	328.	178.	7.1	23.9	46.	66.2										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
Apr95	9.1	85.	467.	111.	6.0	26.4	39.	60.1										
	m	m	m	m	d	d	d	m										
					100%	100%	100%											
May95	13.5	73.	293.	215.	5.8		54.	35.8										
	m	m	m	m	d		d	m										
					100%		100%											
Jun95	15.0	82.	434.	172.	5.2	21.3	47.	94.0										
	m	m	m	m	d	xd	d	m										
					100%	33%	100%											
Jul95	21.2	73.	306.	262.	4.8	23.4	58.	21.2										
	m	m	m	m	d	*d	d	m										
					100%	74%	96%											
Aug95	20.4	67.	226.	251.	5.9	27.5	54.	24.4										
	m	m	m	m	d	d	d	w										
					100%	100%	96%	100%										
Mean	11.1	82.	5141.	1684.	5.8	25.7	39.	789.9	5.42	0.83	0.32	1.27	19.6	0.95	0.70	0.39	0.12	0.11
	m	m	m	m	d	d	d	m	xm	xm	xm	xm	xm	xm	xm	xm	xm	xm
					100%	80%	98%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (21) Oslo, Norway

	CLIMATE				GASES			PRECIPITATION							PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	11.1	74.	293.	101.	2.1	48.4		112.2	4.98	0.44	0.24	1.05	13.4	0.14	0.59	0.42	0.07	0.18
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	99%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Oct94	6.4	73.	357.	106.	2.0	67.7		67.4	4.32	1.18	0.67	0.87	29.6	0.20	0.39	0.60	0.07	0.12
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	2.7	80.	345.	54.	1.7	65.2		19.4	5.61	2.42	0.72	2.62	41.7	1.29	1.64	2.28	0.22	0.78
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	1.7	83.	423.	28.	1.9	75.4		80.5	5.01	1.21	0.56	2.92	31.0	0.95	1.82	1.10	0.21	0.48
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	-2.1	78.	196.	52.	4.9	68.3		90.5	5.83	0.86	0.75	3.73	30.4	1.38	2.31	0.73	0.29	0.21
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	0.4	73.	238.	94.	4.9	77.9		44.4	4.73	0.96	0.56	2.52	30.5	0.65	1.44	0.69	0.17	0.13
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	98%	98%	98%	100%	98%	98%	98%	98%	98%
Mar95	2.3	69.	190.	94.	3.3	55.9		27.4	5.91	1.55	0.99	6.20	54.1	1.15	3.82	3.65	0.35	0.31
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		96%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr95	5.1	61.	161.	172.	2.0	44.1		26.2	6.11	1.01	0.45	1.10	29.0	0.55	0.77	2.60	0.19	0.27
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	96%	96%	96%	100%	96%	96%	96%	96%	96%
May95	10.9	57.	112.	199.	6.3	70.0		0.0										
	m	m	m	m	xd	xd		w										
					12%	12%												
Jun95	16.0	62.	200.	175.				96.0										
	m	m	m	m				m										
Jul95	17.5	62.	176.	263.				102.0										
	m	m	m	m				m										
Aug95	18.0	56.	136.	290.				14.0										
	m	m	m	m				m										
Mean	7.5	69.	2827.	1628.	2.9	62.9		680.0	4.87	0.99	0.56	2.37	28.1	0.71	1.43	1.04	0.18	0.26
	m	m	m	m	*d	*d		m	*m	*m	*m	*m	*m	*m	*m	*m	*m	*m
					67%	67%												

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (22) Borregaard, Norway

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	10.5	84.	459.		13.0			129.4	4.57	0.86	0.39	1.60	24.3	0.33	0.95	0.34	0.12	0.09
	*d	*d	*d		m			w	w	w	w	w	w	w	w	w	w	w
	73%	56%	56%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	6.6	83.	452.		22.8			58.1	4.23	2.63	0.87	2.87	48.4	0.73	1.32	0.97	0.18	0.15
	+m	+m	+m		m			w	w	w	w	w	w	w	w	w	w	w
								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	1.1	85.	348.		16.9			20.7	4.16	1.80	0.46	1.48	53.1	0.71	0.66	0.38	0.09	0.08
	+m	+m	+m		m			w	w	w	w	w	w	w	w	w	w	w
								100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Dec94	-1.3	85.	218.		24.8			139.4	4.23	1.86	0.57	4.29	51.4	0.88	2.53	0.49	0.31	0.19
	+m	+m	+m		m			w	w	w	w	w	w	w	w	w	w	w
								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	-1.0	85.	273.		29.9	55.6		66.4	4.10	2.68	0.86	6.11	73.9	1.23	3.67	1.00	0.43	0.28
	xd	xd	xd		m	xd		w	w	w	w	w	w	w	w	w	w	w
	32%	32%	32%			22%		100%	100%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Feb95	2.3	86.	411.		26.2	31.4		96.5	4.19	3.06	0.73	7.19	77.1	1.46	4.25	1.15	0.54	0.31
	*d	*d	*d		m	d		w	w	w	w	w	w	w	w	w	w	w
	53%	53%	53%			96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	1.2	77.	219.		30.6	24.4		38.3	4.07	3.85	0.87	2.82	80.9	1.07	1.54	2.29	0.24	0.21
	d	d	d		m	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%			100%		100%	100%	97%	97%	97%	100%	97%	97%	97%	97%	97%
Apr95	3.2	64.	95.		27.8	15.7		29.4	4.55	2.58	0.64	1.62	41.2	1.01	1.18	1.82	0.22	0.17
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	80%	80%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May95	8.2	63.	181.		84.4	17.1		24.3	4.27	3.75	0.89	1.08	63.3	1.31	1.08	2.04	0.19	0.25
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	15.6	71.	298.		36.5	13.5		115.1	4.54	1.28	0.31	0.42	24.5	0.45	0.39	0.55	0.06	0.14
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	16.6	70.	295.		37.0	12.8		64.5	4.62	1.93	0.48	1.38	33.8	1.01	1.03	0.94	0.13	0.36
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug95	17.5	67.	242.		25.7	14.4		36.7	4.62	1.75	0.27	1.29	29.6	0.43	0.93	1.00	0.13	0.14
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	7.4	76.	3491.		31.3	19.5		818.8	4.32	2.06	0.57	3.01	47.0	0.83	1.81	0.86	0.23	0.20
	m	m	m		m	*d		m	m	m	m	m	m	m	m	m	m	m
						59%												

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (23) Birkenes, Norway

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	9.2	81.	468.	122.	0.2	1.0	45.	211.9	4.60	0.42	0.32	0.73	16.9	0.21	0.41	0.06	0.05	0.03
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	96%	100%	100%	99%	98%	98%	98%	99%	98%	98%	98%	98%	98%
Oct94	5.3	73.	276.	102.	0.8	1.8	44.	116.0	4.37	0.74	0.60	1.47	30.2	0.42	0.86	0.08	0.11	0.07
	d	*d	*d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	96%	70%	70%		100%	100%	100%	100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Nov94	2.9	88.	432.	54.	0.6	2.8	34.	72.9	4.58	0.44	0.22	1.14	18.6	0.19	0.70	0.05	0.08	0.05
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	98%	94%	94%	94%	98%	94%	94%	94%	94%	94%
Dec94	1.3	93.	482.	36.	1.1	3.4	33.	166.5	4.59	0.53	0.34	3.07	27.0	0.24	1.75	0.38	0.25	0.10
	d	d	d	m	xd	xd	*d	d	d	d	d	d	d	d	d	d	d	d
	80%	80%	80%		41%	41%	61%	100%	99%	98%	98%	98%	99%	98%	98%	98%	98%	98%
Jan95	-2.3	86.	219.	62.	1.8	4.2	50.	215.2	4.43	0.61	0.62	4.05	36.2	0.61	2.38	0.12	0.26	0.12
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		83%	87%	80%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Feb95	0.1	80.	259.	99.	0.3	2.2	66.	193.0	4.56	0.32	0.38	3.32	27.3	0.22	2.00	0.10	0.24	0.09
	d	d	d	m	d	d	xd	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	82%	46%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Mar95	1.2	76.	299.	124.	1.3	3.3	68.	143.2	4.25	1.10	1.02	3.39	47.1	1.02	1.89	0.16	0.23	0.11
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Apr95	4.5	61.	127.	235.	0.4	0.8	76.	39.7	4.62	0.48	0.31	0.72	18.0	0.25	0.43	0.19	0.06	0.05
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	98%	94%	94%	94%	98%	94%	94%	94%	94%	94%
May95	7.9	60.	202.	254.	0.7	1.2	74.	100.3	4.86	0.30	0.19	0.32	10.7	0.25	0.20	0.06	0.02	0.04
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	99%	98%	98%	98%	99%	98%	98%	98%	98%	98%
Jun95	13.9	69.	356.	239.	0.5	1.2	61.	108.3	4.48	0.50	0.39	0.53	20.0	0.29	0.32	0.04	0.03	0.07
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	15.2	76.	353.	300.	0.5	1.5	57.	36.4	4.41	0.60	0.36	0.41	21.9	0.26	0.20	0.05	0.02	0.04
	d	*d	*d	m	d	d	*d	d	d	d	d	d	d	d	d	d	d	d
	100%	74%	74%		100%	100%	67%	100%	98%	97%	97%	97%	98%	97%	97%	97%	97%	97%
Aug95	16.5	74.	335.	343.	0.6	1.6	59.	16.3	4.58	0.33	0.20	0.57	14.6	0.09	0.33	0.05	0.04	0.03
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	80%	80%		100%	100%	100%	100%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
Mean	6.4	76.	3779.	1970.	0.7	2.0	56.	1419.7	4.49	0.55	0.46	2.16	26.6	0.38	1.26	0.13	0.15	0.08
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	98%	92%	92%		93%	92%	88%	100%	99%	98%	98%	98%	99%	98%	98%	98%	98%	98%

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (24) Stockholm South, Sweden

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.0 d 100%	79. d 100%	426. d 100%	120. m	2.0 d 100%	24.8 d 100%	43. d 100%	164.0 m	4.63 m	0.33 m	0.13 m	0.25 m	12.0 m	0.00 m	0.13 m	0.10 m	0.02 m	0.01 m
Oct94	6.5 d 100%	76. d 100%	363. d 100%	117. m	3.7 *d 70%	24.2 d 100%	33. d 96%	28.0 m	4.56 m	0.65 m	0.36 m	0.35 m	20.0 m	0.36 m	0.16 m	0.12 m	0.03 m	0.04 m
Nov94	3.4 d 100%	78. d 100%	304. d 100%	73. m	3.7 d 100%	25.8 d 100%	30. d 100%	8.0 m	4.56 m	0.71 m	0.40 m	0.86 m	22.0 m	0.21 m	0.40 m	0.27 m	0.09 m	0.06 m
Dec94	2.2 d 100%	86. d 100%	517. d 100%	29. m	4.6 d 93%	27.3 d 100%	25. d 100%	44.0 m	4.37 m	0.66 m	0.52 m	1.36 m	27.0 m	0.28 m	0.39 m	0.08 m	0.05 m	0.06 m
Jan95	-1.8 d 100%	83. d 100%	169. d 100%	45. m	9.9 d 90%	26.7 d 93%	31. d 100%	32.0 m	4.52 m	0.28 m	0.30 m	0.71 m	30.2 m	0.36 m	0.60 m	0.15 m	0.08 m	0.09 m
Feb95	0.9 d 100%	77. d 100%	257. d 100%	80. m	4.5 d 100%	18.8 d 100%	44. d 100%	27.3 m	4.66 m	0.29 m	0.22 m	0.65 m	12.3 m	0.14 m	0.25 m	0.06 m	0.03 m	0.05 m
Mar95	1.9 d 100%	75. d 100%	289. d 100%	87. m	4.1 d 100%		48. d 90%	23.0 m	4.49 m	0.88 m	0.66 m	1.03 m	14.2 m	0.59 m	0.70 m	0.24 m	0.10 m	0.09 m
Apr95	3.9 d 100%	67. d 100%	197. d 100%	179. m	3.3 d 96%	22.6 d 100%	52. d 100%	102.0 m	4.53 m	0.52 m	0.28 m	0.43 m	17.5 m	0.34 m	0.12 m	0.11 m	0.07 m	0.07 m
May95	9.2 d 100%	67. d 100%	204. d 100%	241. m	2.4 d 87%	20.7 d 90%	60. d 100%	39.0 m	5.70 m	0.67 m	0.32 m	0.31 m	12.0 m	0.40 m	0.12 m	0.91 m	0.10 m	0.08 m
Jun95	15.9 d 100%	67. d 100%	220. d 100%	264. m		15.8 d 100%	56. d 100%	55.0 m	5.30 m	0.75 m	0.42 m	0.19 m	14.0 m	0.44 m	0.05 m	0.51 m	0.10 m	0.12 m
Jul95	17.5 d 100%	61. d 100%	121. d 100%	305. m		11.5 d 100%	48. d 100%	29.0 m	5.75 m	0.30 m	0.17 m	0.19 m	6.6 m	0.04 m	0.11 m	0.42 m	0.07 m	0.06 m
Aug95	17.8 d 100%	61. d 100%	93. d 100%	308. m		17.4 d 100%	49. d 100%	29.3 m	4.54 m	0.71 m	0.33 m	0.31 m	19.6 m	0.42 m	0.17 m	0.17 m	0.04 m	0.06 m
Mean	7.5 d 100%	73. d 100%	3160. d 100%	1848. m	4.2 *d 69%	21.4 d 90%	43. d 98%	580.6 m	4.64 m	0.51 m	0.29 m	0.45 m	16.0 m	0.24 m	0.20 m	0.22 m	0.06 m	0.06 m

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (25) Stockholm Centre, Sweden

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.0	79.	426.	120.	2.2	29.4		164.0	4.63	0.33	0.13	0.25	12.0	0.00	0.13	0.10	0.02	0.01
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Oct94	6.5	76.	363.	117.	3.5	29.6		28.0	4.56	0.65	0.36	0.35	20.0	0.36	0.16	0.12	0.03	0.04
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Nov94	3.4	78.	304.	73.	4.3	27.6		8.0	4.56	0.71	0.40	0.86	22.0	0.21	0.40	0.27	0.09	0.06
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Dec94	2.2	86.	517.	29.	5.2	30.2		44.0	4.37	0.66	0.52	1.36	27.0	0.28	0.39	0.08	0.05	0.06
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Jan95	-1.8	83.	169.	45.	6.6	21.8		32.0	4.52	0.28	0.30	0.71	30.2	0.36	0.60	0.15	0.08	0.09
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Feb95	0.9	77.	257.	80.	4.9	26.8		27.3	4.66	0.29	0.22	0.65	12.3	0.14	0.25	0.06	0.03	0.05
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Mar95	1.9	75.	289.	87.	3.5	21.4		23.0	4.49	0.88	0.66	1.03	14.2	0.59	0.70	0.24	0.10	0.09
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Apr95	3.9	67.	197.	179.	3.4	24.2		102.0	4.53	0.52	0.28	0.43	17.5	0.34	0.12	0.11	0.07	0.07
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
May95	9.2	67.	204.	241.	3.0	30.2		39.0	5.70	0.67	0.32	0.31	12.0	0.40	0.12	0.91	0.10	0.08
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Jun95	15.9	67.	220.	264.	1.7	23.7		55.0	5.30	0.75	0.42	0.19	14.0	0.44	0.05	0.51	0.10	0.12
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Jul95	17.5	61.	121.	305.	1.2	17.7		29.0	5.75	0.30	0.17	0.19	6.6	0.04	0.11	0.42	0.07	0.06
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Aug95	17.8	61.	93.	308.	1.5	22.6		29.3	4.54	0.71	0.33	0.31	19.6	0.42	0.17	0.17	0.04	0.06
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Mean	7.5	73.	3160.	1848.	3.4	25.4		580.6	4.64	0.51	0.29	0.45	16.0	0.24	0.20	0.22	0.06	0.06
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (26) Aspvreten, Sweden

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	11.7	87.	492.	119.	0.6	2.2	27.	114.4	4.60	0.58	0.27	0.61	18.0	0.30	0.31	0.11	0.05	0.05
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	80%	86%	100%	100%	100%	100%	100%	97%	100%	100%	100%	99%	99%
Oct94	5.8	86.	391.	118.	1.3	3.3	25.	52.7	4.71	0.42	0.27	0.39	13.1	0.24	0.20	0.09	0.04	0.03
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	90%	100%	100%	100%	100%	100%	96%	100%	99%	99%	99%	99%
Nov94	3.0	87.	303.	70.	0.9	4.0	24.	4.2	4.13	1.77	0.70	0.54	55.2	0.69	0.25	0.19	0.06	0.14
	m	m	m	m	d	*d	*d	d	d	d	d	d	d	d	d	d	d	d
					100%	53%	73%	100%	100%	100%	100%	100%	80%	100%	100%	100%	100%	100%
Dec94	1.5	96.	515.	41.	1.5	6.0	21.	61.7	4.39	0.56	0.56	1.15	26.0	0.25	0.54	0.14	0.09	0.15
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	96%	100%	100%	100%	100%	100%	98%	99%	99%	99%	99%	99%
Jan95	-2.2	92.	256.	73.	4.2	4.9	45.	56.4	4.31	0.75	0.53	1.09	29.6	0.32	0.58	0.05	0.08	0.10
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	0.6	88.	380.	70.	0.9	3.5	55.	38.3	4.64	0.44	0.33	0.55	16.2	0.21	0.30	0.11	0.30	0.08
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	100%	100%	100%	100%	100%	100%	96%	100%	99%	99%	99%	99%
Mar95	1.8	84.	432.	90.	0.9	2.1	63.	25.6	4.48	0.65	0.55	1.08	24.1	0.42	0.58	0.13	0.09	0.07
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	100%	100%	100%	100%	100%	100%	92%	99%	96%	94%	94%	94%
Apr95	3.3	81.	310.	179.	0.8	2.2	71.	53.8	4.67	0.63	0.30	0.38	16.7	0.34	0.23	0.22	0.05	0.09
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					93%	100%	100%	100%	100%	100%	100%	100%	99%	100%	99%	99%	99%	80%
May95	9.9	67.	171.	223.	0.7	1.8	80.	36.9	4.42	0.95	0.53	0.25	25.7	0.64	0.11	0.18	0.04	0.09
	+m	+m	+m	m	d	d	*d	d	d	d	d	d	d	d	d	d	d	d
					96%	93%	70%	100%	100%	99%	99%	99%	88%	99%	96%	96%	96%	96%
Jun95	13.5	70.	259.	217.	0.7	1.8	75.	31.0	4.78	0.69	0.28	0.25	13.3	0.38	0.13	0.31	0.05	0.14
	+m	+m	+m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	100%	100%	100%	100%	100%	100%	86%	100%	96%	98%	96%	96%
Jul95	16.4	72.	272.	288.	0.5	1.5	56.	47.2	5.27	0.64	0.21	0.26	11.7	0.37	0.12	0.40	0.07	0.06
	m	+m	+m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	100%	100%	100%	100%	100%	100%	95%	100%	100%	100%	100%	100%
Aug95	16.1	75.	337.	318.	0.5	1.5	57.	3.0	5.57	1.16	0.58	0.77	7.0	0.52	0.21	1.19	0.13	0.24
	m	m	m	m	d	d	d	d	d	d	d	d	xd	d	*d	*d	*d	*d
					100%	100%	100%	100%	100%	100%	100%	100%	36%	100%	73%	73%	73%	73%
Mean	6.8	82.	4118.	1806.	1.1	2.9	50.	525.2	4.56	0.63	0.37	0.62	19.7	0.33	0.32	0.17	0.08	0.08
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					99%	93%	92%	100%	100%	99%	99%	99%	95%	99%	99%	99%	98%	96%

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (27) Lincoln Cathedral, United Kingdom

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.8 m	82. m		118. m	6.4 m	5.6 m		100.7 m										
Oct94	9.5 m	86. m		100. m	26.0 m	8.7 m		49.4 m										
Nov94	9.1 m	90. m		62. m	3.5 m	12.7 m		43.9 m										
Dec94	5.8 m	86. m		66. m	2.5 m	10.2 m		63.5 m										
Jan95	4.0 m	84. m		61. m	4.6 m	8.6 m		81.8 m										
Feb95	6.1 m	81. m		86. m	1.5 m	7.8 m		53.4 m										
Mar95	5.1 m	75. m		184. m		7.8 m		31.5 m										
Apr95	8.8 m	74. m		164. m		6.2 m		11.7 m										
May95	13.7 m	72. m		199. m	3.2 m	7.7 m		43.6 m										
Jun95	13.6 m	74. m		184. m				17.8 m										
Jul95	19.0 m	69. m		265. m				12.1 m										
Aug95	18.6 m	69. m		259. m				5.9 m										
Mean	10.5 m	78. m	5894. +y	1748. m	6.8 *m	8.4 *m		515.3 m	4.46 +y	2.71 +y	1.11 +y	3.89 +y	50.0 +y	0.80 +y	1.62 +y	1.97 +y	0.27 +y	0.31 +y

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (28) Wells Cathedral, United Kingdom

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.5 m	82. m		104. m	2.0 m			87.6 m										
Oct94	10.7 m	84. m		142. m	4.1 m			71.3 m										
Nov94	11.1 m	90. m		24. m	1.6 m			84.1 m										
Dec94	7.1 m	86. m		53. m	4.5 m			92.9 m										
Jan95	5.8 m	83. m		46. m	3.3 m			132.3 m										
Feb95	7.4 m	88. m		52. m	2.2 m			71.4 m										
Mar95	5.8 m	78. m		158. m	4.6 m			39.9 m										
Apr95	8.9 m	78. m		249. m	4.4 m			30.8 m										
May95	11.4 m	71. m		254. m				41.7 m										
Jun95	14.7 m	70. m		237. m				10.8 m										
Jul95	18.6 m	73. m		196. m				16.0 m										
Aug95	20.0 m	64. m		292. m				17.4 m										
Mean	11.2 m	79. m	6152. +y	1807. m	3.3 *m			696.2 m	4.75 +y	2.67 +y	0.88 +y	6.02 +y	67.3 +y	3.07 +y	4.19 +y	1.20 +y	0.42 +y	2.64 +y

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (29) Chatteringshaws Loch, United Kingdom

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94																		
Oct94																		
Nov94																		
Dec94																		
Jan95																		
Feb95																		
Mar95																		
Apr95																		
May95																		
Jun95																		
Jul95																		
Aug95																		
Mean																		

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (30) Stoke Orchard, United Kingdom

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94																		
Oct94																		
Nov94																		
Dec94																		
Jan95																		
Feb95																		
Mar95																		
Apr95																		
May95																		
Jun95																		
Jul95																		
Aug95																		
Mean	10.3 +y	76. +y	4995. +y		14.6 +y	38.1 +y		594.8 +y	3.75 +y	1.78 +y	0.40 +y	3.97 +y		0.96 +y	1.74 +y	1.30 +y	0.26 +y	0.34 +y

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (31) Madrid, Spain

Date	CLIMATE Temp C	Rh %	Tow hours	Sun hours	GASES SO2 ug/m3	NO2 ug/m3	O3 ug/m3	PRECIPITATION mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	PREC.-OPTION NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	18.9	71.	174.	264.	3.0	9.9		16.4	6.80	3.38	2.55	1.60	65.2	0.60	1.03	5.82	0.62	0.65
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	15.6	80.	469.	186.	4.0	12.8		30.9	6.91	1.06	1.03	0.45	33.1	0.36	0.24	2.44	0.23	0.22
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%
Nov94	11.3	83.	527.	162.	12.3	15.3		29.3	6.81	1.05	0.66	0.62	24.2	0.15	0.26	2.10	0.17	0.07
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	96%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	7.0	84.	485.	123.	9.3	39.2		10.6	7.10	3.41	1.84	2.38	64.6	0.01	0.49	3.92	0.43	0.13
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	94%	85%	85%	100%	85%
Jan95	7.0	81.	395.	162.	13.3	21.1		12.8	7.06	2.33	0.82	1.44	38.2	0.46	0.67	2.54	0.22	0.31
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	96%	96%	96%	100%	100%	100%		100%	100%	96%	96%	96%	100%	100%	96%	96%	96%	96%
Feb95	9.4	78.	357.	168.	5.1	29.7		38.6	6.96	0.79	0.38	0.65	10.0	0.18	0.28	1.30	0.11	0.20
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	11.3	68.	159.	279.	10.0	21.1		3.2	6.75	5.21	3.74	1.78	87.7	0.03	1.49	5.70	0.63	0.50
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	96%	96%	96%	100%	93%	100%		100%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%
Apr95	14.1	61.	90.	309.	4.9	3.3		11.9	7.28	3.38	1.64	1.07	49.0	0.71	0.65	2.46	0.32	0.74
	d	d	d	d	xd	xd		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	46%	43%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May95	19.2	56.	49.	329.	2.2	2.8		28.6	6.51	1.02	1.10	1.36	29.9	0.40	0.70	1.20	0.17	0.31
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	22.4	58.	49.	313.	20.4	21.8		23.4	6.64	2.97	3.18	2.95	89.2	0.08	0.77	4.46	0.45	0.53
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	96%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	84%	84%	84%	84%
Jul95	26.4	49.	6.	380.	6.3	28.8		0.0										
	d	d	d	d	d	d		d										
	100%	100%	100%	100%	100%	100%												
Aug95	25.5	53.	9.	352.	1.2	31.3		18.2	6.64	1.36	1.37	0.72	40.1	0.57	0.86	2.76	0.33	0.55
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	15.7	68.	2766.	3027.	7.8	20.6		223.9	6.79	1.76	1.34	1.19	39.6	0.32	0.54	2.61	0.27	0.33
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	99%	99%	99%	100%	94%	95%		100%	99%	99%	99%	99%	99%	99%	97%	97%	97%	97%

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (32) Bilbao, Spain

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	16.4	74.	395.	120.	3.3	5.5		157.8	5.01	7.15	2.17	7.68	51.8	1.95	2.21	3.76	0.44	0.19
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	15.4	77.	418.	139.	2.0	19.5		105.1	5.60	6.86	1.70	3.90	39.1	1.71	0.64	4.33	0.20	0.20
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	14.6	74.	355.	94.	9.2	11.2		81.0	6.16	6.68	2.42	4.07	39.4	0.99	0.61	5.31	0.23	0.13
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	80%	83%	83%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	11.8	72.	315.	78.	4.8	13.5		122.8	5.92	7.08	2.06	5.99	45.1	1.37	2.30	4.07	0.44	0.16
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan95	9.2	72.	296.	78.	9.1	27.9		184.5	5.20	5.07	0.98	7.00	40.1	0.74	3.01	2.43	0.48	0.18
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	93%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	11.2	70.	319.	109.	7.4	18.6		112.8	4.86	6.61	3.10	10.69	69.2	1.89	4.27	4.57	0.68	0.19
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	82%	82%	82%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	10.6	71.	330.	142.	8.2	22.0		115.0	5.62	5.53	1.27	11.01	57.5	1.53	4.30	3.87	0.73	0.12
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr95	11.3	73.	345.	132.	8.5	24.6		56.7	6.32	11.16	3.66	13.36	82.1	3.23	3.48	9.26	0.87	0.49
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May95	16.0	71.	339.	146.	7.9	38.8		79.9	6.17	6.23	3.24	11.18	60.0	2.28	2.97	5.72	0.65	0.34
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun95	17.4	74.	353.	202.	10.8	39.0		13.0	5.03	27.29	18.10	32.03	276.6	5.04	4.67	22.76	1.26	1.28
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul95	21.3	74.	416.	218.	2.2	35.8		32.1	5.78	11.74	5.65	14.76	83.5	4.97	1.04	9.91	0.60	0.35
	d	d	d	d	w	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%	100%				100%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
Aug95	20.5	76.	393.	191.	2.1	53.9		21.5	5.94	34.63	12.80	35.11	199.8	5.81	4.58	24.35	1.68	0.52
	d	d	d	d	w	w		w	*w	*w	*w	*w	*w	*w	*w	*w	*w	*w
	100%	100%	100%	87%				100%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Mean	14.8	73.	4275.	1642.	6.3	25.9		1082.2	5.31	7.56	2.59	9.01	58.1	1.83	2.69	5.09	0.54	0.23
	d	d	d	d	m	m		m	m	m	m	m	m	m	m	m	m	m
	96%	97%	97%	98%														

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (33) Toledo, Spain

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	17.3	53.	65.	249.	1.0	25.7		35.3	6.26	1.47	0.66	1.12	24.6	0.56	0.50	1.08	0.23	0.21
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	14.4	68.	258.	159.	1.2	4.8	71.	52.0	6.61	0.52	0.29	0.42	15.8	0.33	0.29	0.39	0.06	0.07
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	96%	96%	96%	96%
Nov94	11.6	69.	200.	152.	4.3	17.6	66.	42.5	5.92	0.34	0.13	0.74	11.3	0.10	0.44	0.29	0.06	0.12
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%	98%	98%
Dec94	7.2	71.	260.	179.	3.1	9.0	59.	38.2	6.43	0.42	0.13	0.84	32.8	0.05	0.45	0.23	0.09	0.25
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	90%	90%	100%	100%	100%	96%	100%	100%	100%	100%	100%	100%	98%	98%	100%	100%	98%
Jan95	7.2	71.	323.	174.	2.3	5.6		36.3	6.05	0.33	0.11	0.52	12.1	0.19	0.35	0.19	0.07	0.04
	d	*d	*d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	67%	67%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	8.6	65.	186.	183.	1.1	11.4	68.	40.3	6.70	0.39	0.15	1.19	6.1	0.66	0.28	0.19	0.03	0.02
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	89%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%	98%	98%
Mar95	10.6	54.	68.	270.	4.3	14.4	79.	1.0	7.06	0.00	0.00	0.00	164.5	3.72	2.46	2.51	0.58	0.68
	d	d	d	d	d	d	d	d	d	d	d	d	d	*d	*d	*d	*d	*d
	100%	100%	100%	100%	100%	100%	100%	100%	100%				100%	60%	60%	60%	60%	60%
Apr95	13.1	50.	77.	298.	3.5	9.6	94.	9.8	6.66	0.40	0.17	0.56	49.2	0.40	0.24	0.44	0.05	0.02
	d	d	d	d	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%	100%	100%	100%	100%											
May95	17.3	53.	41.	302.	4.8	3.8	88.	44.5	6.79	0.87	0.31	0.61	20.5	0.84	0.28	0.38	0.06	0.11
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%	98%	98%
Jun95	20.2	49.	47.	469.	14.4	16.8	92.	20.0	5.79	0.97	0.51	0.41	35.0	0.84	0.42	0.57	0.11	0.11
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	97%	97%	100%	97%	97%	97%	97%	97%
Jul95	25.6	40.	0.	409.	4.5	2.3	98.	5.9	7.25	1.84	0.81	0.91	55.2	0.78	0.73	3.24	0.27	0.02
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	93%	100%	100%	100%	100%
Aug95	24.4	43.	27.	330.	6.1	6.3	100.	1.6	6.90	4.40	2.59	14.52	77.1	1.78	1.76	4.52	0.59	0.46
	d	d	d	d	d	d	d	d	d	d	d	d	d	d	*d	d	d	*d
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	62%
Mean	14.8	57.	1465.	3174.	4.2	10.5	82.	327.4	6.26	0.66	0.29	0.80	20.8	0.45	0.38	0.48	0.09	0.11
	d	d	d	d	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	95%	95%	100%	100%	100%	83%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (34) Moscow, Russia

	CLIMATE			GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	13.6 d	70. d	176. m	176. m	13.6 m	27.7 m		53.4 m	5.91 m	2.83 m	0.25 m	0.75 m	43.5 m	0.93 m				
	100%	100%																
Oct94	5.6 d	79. d	279. m	112. m	15.3 m	33.5 m		82.9 m	6.36 m	2.26 m	0.35 m	0.94 m	38.4 m	1.15 m				
	100%	100%																
Nov94	-3.5 d	81. d	260. m	21. m	12.3 m	31.0 m		64.3 m	6.14 m	2.58 m	0.23 m	0.86 m	31.0 m	0.18 m				
	100%	100%																
Dec94	-9.2 d	79. d	77. m	18. m	14.9 m	28.7 m		84.0 m	6.07 m	2.59 m	0.16 m	0.67 m	28.2 m	0.61 m				
	100%	100%																
Jan95	-6.6 d	79. d	32. m	33. m	11.8 m	24.8 m		73.8 m	6.01 m	2.40 m	0.14 m	0.90 m	25.0 m	0.53 m				
	100%	100%																
Feb95	-3.2 d	65. d	8. m	49. m	14.2 m	30.5 m		56.5 m	6.26 m	2.58 m	0.14 m	1.00 m	31.6 m	0.59 m				
	100%	100%																
Mar95	-1.5 d	70. d	62. m	116. m	15.1 m	26.7 m		18.2 m	6.11 m	3.73 m	0.17 m	0.98 m	38.0 m	0.82 m				
	100%	100%																
Apr95	7.1 d	63. d	108. m	182. m	14.5 m	30.7 m		47.0 m	5.74 m	3.22 m	0.17 m	0.81 m	30.6 m	0.63 m				
	100%	100%																
May95	13.0 d	67. d	128. m	269. m	20.1 m	32.6 m		28.4 m	6.07 m	2.37 m	0.16 m	0.87 m	32.5 m	0.57 m				
	100%	100%																
Jun95	18.7 d	65. d	97. m	317. m	26.4 m	36.7 m		36.7 m	6.22 m	2.79 m	0.25 m	0.93 m	42.5 m	0.92 m				
	100%	100%																
Jul95	16.5 d	63. d	112. m	271. m	22.8 m	22.2 m		60.5 m	6.07 m	2.45 m	0.12 m	0.88 m	23.1 m	0.50 m				
	100%	100%																
Aug95	16.3 d	66. d	175. m	277. m	16.0 m	29.4 m		61.0 m	6.26 m	3.00 m	0.19 m	0.76 m	28.9 m	0.67 m				
	100%	100%																
Mean	5.6 d	71. d	1514. m	1841. m	16.4 m	29.5 m		666.7 m	6.08 m	2.65 m	0.20 m	0.85 m	31.9 m	0.67 m				
	100%	100%																

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (35) Lahemaa , Estonia

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94																		
Oct94																		
Nov94																		
Dec94																		
Jan95																		
Feb95																		
Mar95																		
Apr95																		
May95																		
Jun95																		
Jul95																		
Aug95																		
Mean	6.1 +y	82. +y	4076. +y	1731. +y	0.6 +y	3.8 +y		533.3 +y	4.63 +y	0.87 +y	0.29 +y	0.61 +y	17.1 +y	0.20 +y	0.45 +y	0.67 +y	0.06 +y	0.34 +y

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (36) Lisbon-Jeronimo, Portugal

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	22.3	56.	10.					10.4	6.50	22.64	4.26	23.86	11.5	0.44	9.10	17.40	0.60	2.80
	d	d	d					w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct94	20.2	71.	228.					79.8	6.12	10.49	2.57	8.10	40.3	0.47	3.71	3.06	0.33	1.83
	d	d	d					w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov94	17.4	78.	338.					119.7	5.93	3.22	1.63	8.93	34.0	0.39	6.25	2.13	0.33	0.44
	d	d	d					w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec94	14.7	80.	290.					45.0	5.31	18.96	5.44	7.66	74.8	1.36	5.17	6.03	0.53	0.30
	d	d	d					w	w	w	w	w	w	*w	w	w	w	w
	100%	100%	100%					100%	100%	86%	86%	86%	100%	58%	86%	86%	86%	86%
Jan95	15.2	73.	229.		7.5	25.7		41.1	6.41	9.96	2.84	16.95	88.4	0.77	9.26	4.92	0.99	0.82
	d	d	d		d	*d		w	w	w	w	w	w	w	w	w	w	w
	83%	100%	100%		77%	54%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb95	14.8	77.	349.		4.4	20.1	46.	55.4	6.04	8.08	4.86	15.10	72.7	0.96	8.40	3.75	0.75	0.39
	d	d	d		d	d	xd	w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		82%	82%	21%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar95	16.3	65.	96.		4.8	41.7	42.	21.8	4.92	7.97	13.56	6.97	77.2	2.34	2.80	4.30	0.40	0.60
	d	d	d		d	d	d	w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		90%	90%	90%	100%	100%	76%	76%	76%	100%	76%	76%	76%	76%	76%
Apr95	18.1	53.	9.		4.7	43.8	56.	31.2	6.12	16.66	1.38	246.39	98.1		7.48	8.00	0.75	0.60
	d	d	d		d	d	d	w	w	w	w	w	w		w	w	w	*w
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%	73%
May95	20.2	65.	119.		4.1	58.1	47.	36.2	7.05	20.80	7.30	8.25	65.0		5.20	8.75	0.75	0.70
	d	d	d		d	d	d	w	w	w	w	w	w		w	w	w	w
	100%	100%	100%		93%	93%	93%	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
Jun95	21.2	60.	22.		3.8	18.6	51.	0.0										
	d	d	d		*d	*d	*d	w										
	100%	100%	100%		60%	60%	60%											
Jul95	23.7	60.	38.		3.7	16.0	51.	2.0	6.80									
	d	d	d		xd	*d	d	w	w									
	100%	100%	100%		48%	54%	80%	100%	100%									
Aug95	24.3		17.		2.6		40.	0.0										
	d		+m		xd		xd	w										
	100%				19%		19%											
Mean	19.1	67.	1745.		4.7	35.0	49.	442.6	5.75	10.47	3.81	27.19	57.9	0.77	6.13	4.59	0.54	0.80
	d	d	m		xd	xd	xd	m	m	m	m	m	m	m	m	m	m	m
	98%	91%			47%	44%	38%											

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (37) Dorset, Canada

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	12.8 m	89. m	530. m	167. m	1.6 m		49. m											
Oct94	7.2 m	84. m	397. m	144. m	4.5 m		47. m											
Nov94	2.1 m	86. m	282. m	109. m	3.9 m		47. m											
Dec94	-4.8 m	89. m	168. m	81. m	3.3 m		41. m											
Jan95	-6.2 m	91. m	164. m	52. m														
Feb95	-11.7 m	77. m	6. m	101. m														
Mar95	-1.1 m	72. m	126. m	179. m														
Apr95	1.5 m	75. m	267. m	214. m														
May95	11.5 m	62. m	238. m	231. m														
Jun95	15.8 m	76. m	358. m	247. m														
Jul95	18.6 m	77. m	398. m	235. m														
Aug95	17.0 m	81. m	452. m	256. m														
Mean	5.2 m	80. m	3386. m	2016. m	3.3 xm	1.7 +y	46. xm	1022.8 +y	4.34 +y	0.76 +y	0.51 +y	0.11 +y	25.1 +y	0.35 +y	0.05 +y	0.18 +y		

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (38) Research Triangle Park, USA(NC)

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	20.6 m	76. m	227. m	84. m	17.5 m	6.8 m	50. m	89.8 +m										
Oct94	15.0 m	64. m	181. m	220. +m	7.8 m	15.3 m	66. m	117.3 m										
Nov94	12.2 m	63. m	169. m	162. +m	9.4 m	30.1 m	50. m	33.5 m										
Dec94	7.3 m	55. m	164. m	126. +m	10.3 m	26.2 m	24. m	59.4 m										
Jan95	5.1 m	53. m		153. m	10.2 m	33.0 m	31. m	114.3 m										
Feb95	4.8 m	60. m		161. m	8.7 m	28.1 m	31. m	115.8 m										
Mar95	11.7 m	63. m		197. m	9.5 m	29.3 m	41. m	63.2 m										
Apr95	16.1 m	72. m		203. m	7.9 m	23.0 m	64. m	33.5 m										
May95	20.1 m	70. m		237. m	6.5 m	22.5 m	76. m	99.3 m										
Jun95	23.3 m	78. m		170. m	8.6 m	15.2 m	82. m	196.8 m										
Jul95	27.1 m	82. m		276. m	8.1 m	24.2 m	78. m	83.5 m										
Aug95	26.2 m	79. m		220. m	7.3 m	21.0 m	70. m	31.2 m	4.32 y	0.65 y	0.33 y	0.23 y	19.0 y	0.13 y	0.10 y	0.09 y	0.08 y	0.07 y
Mean	15.8 m	68. m	3250. y	2209. m	9.3 m	22.9 m	55. m	1037.6 m	4.32 xm	0.65 xm	0.33 xm	0.23 xm	19.0 xm	0.13 xm	0.10 xm	0.09 xm	0.08 xm	0.07 xm

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (39) Steubenville, USA(Oh)

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep94	17.7 m	73. m		193. m	42.5 m	28.4 m	32. m	91.1 m										
Oct94	11.9 m	65. m		187. m	46.1 m	33.2 m	26. m	22.3 m										
Nov94	8.5 m	58. m		139. m	45.3 m	41.8 m	18. m	92.4 m										
Dec94	1.7 m	61. m		89. m	52.6 m	43.9 m	16. m	73.6 m										
Jan95	-2.4 m	64. m		75. m	37.4 m	36.4 m	31. m	59.1 m										
Feb95	0.6 m	60. m		101. m	38.0 m	43.2 m	41. m	43.9 m										
Mar95	4.0 m	66. m		172. m	41.9 m	48.6 m	42. m	39.6 m										
Apr95	13.2 m	72. m		128. m	28.6 m	52.5 m	57. m	43.1 m										
May95	19.6 m	69. m		163. m	26.1 m	47.2 m	59. m	94.4 m										
Jun95	23.9 m	79. m		196. m	33.0 m	38.6 m	64. m	96.0 m										
Jul95	22.6 m	82. m		218. m	26.4 m	33.2 m	72. m	77.7 m										
Aug95	19.9 m	77. m		205. m	41.4 m	30.1 m	52. m	23.6 m	4.12 y	2.14 y	0.40 y	0.36 y	51.1 y	0.41 y	0.20 y	0.81 y	0.04 y	0.03 y
Mean	11.8 m	69. m	2206. y	1866. m	38.3 m	39.8 m	42. m	756.8 m	4.12 xm	2.14 xm	0.40 xm	0.36 xm	51.1 xm	0.41 xm	0.20 xm	0.81 xm	0.04 xm	0.03 xm

Annex C

Trend analysis of SO_2 values at the sites in the ECE-ICP materials programme, period 1987–1995

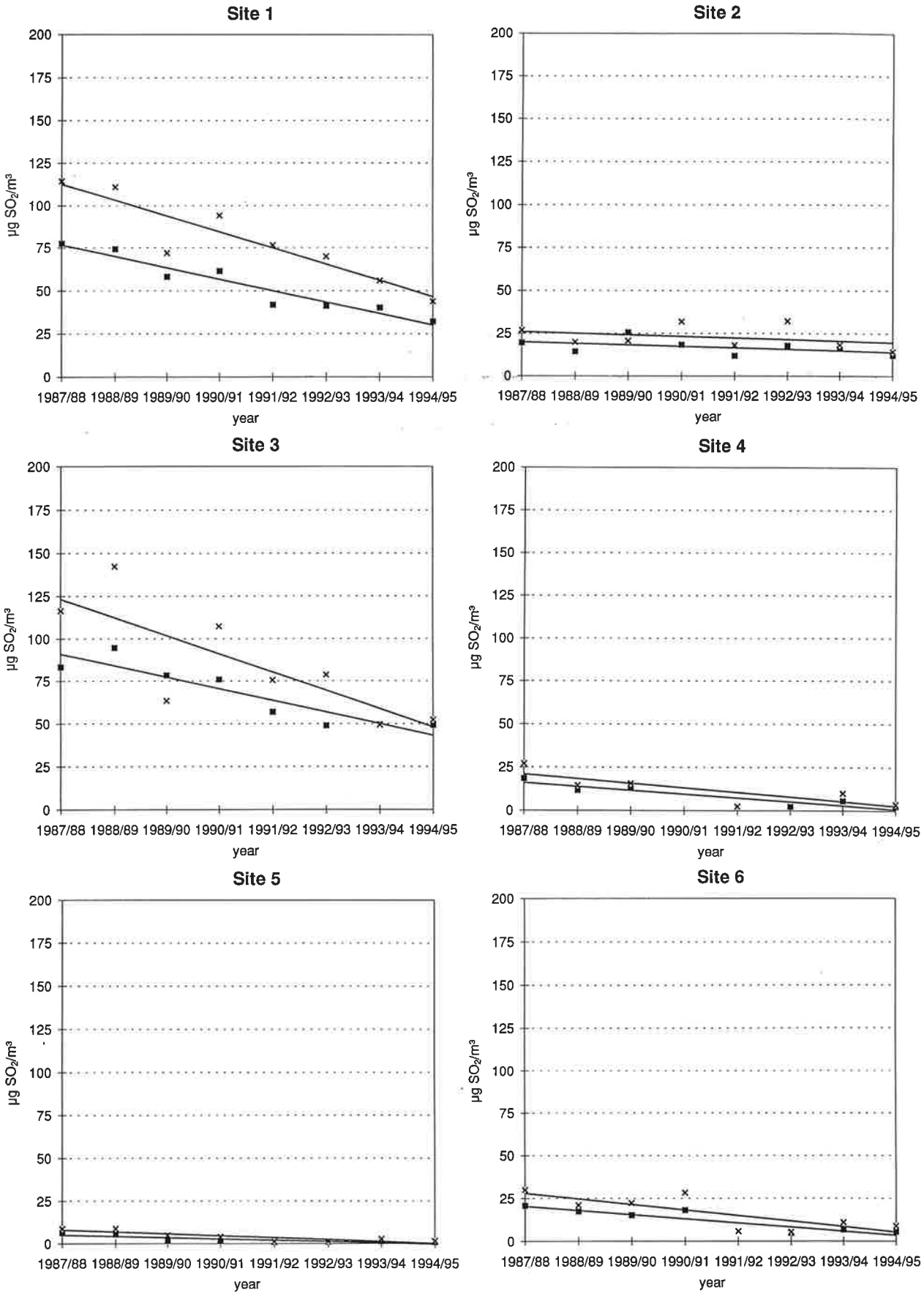

Figure C 1: Figures showing the trend for the SO_2 concentrations for 37 sites during the period 1987–95. The trend lines are shown for the yearly mean values and for the mean values of the winter months December–February.

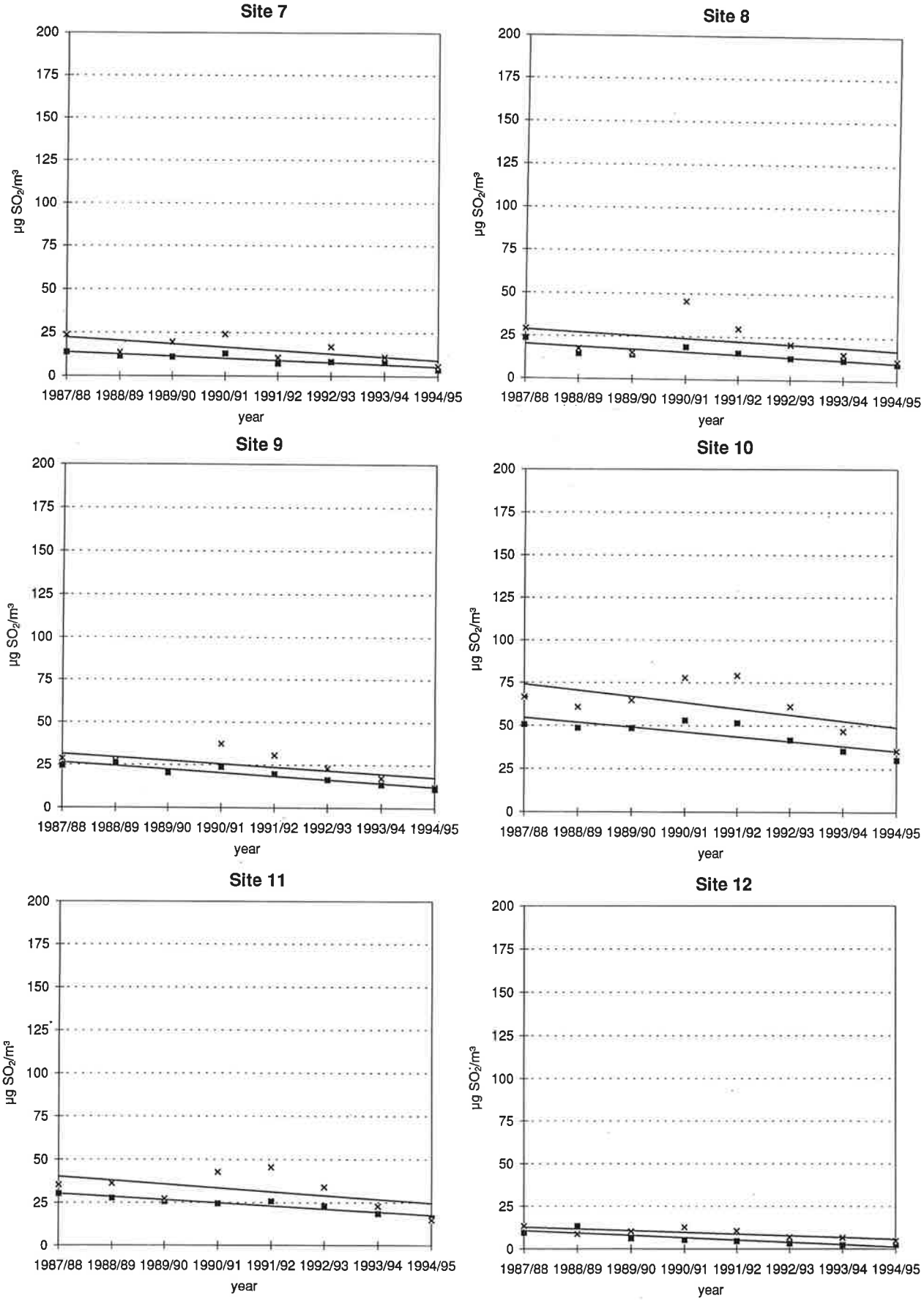

Figure C 1, cont.

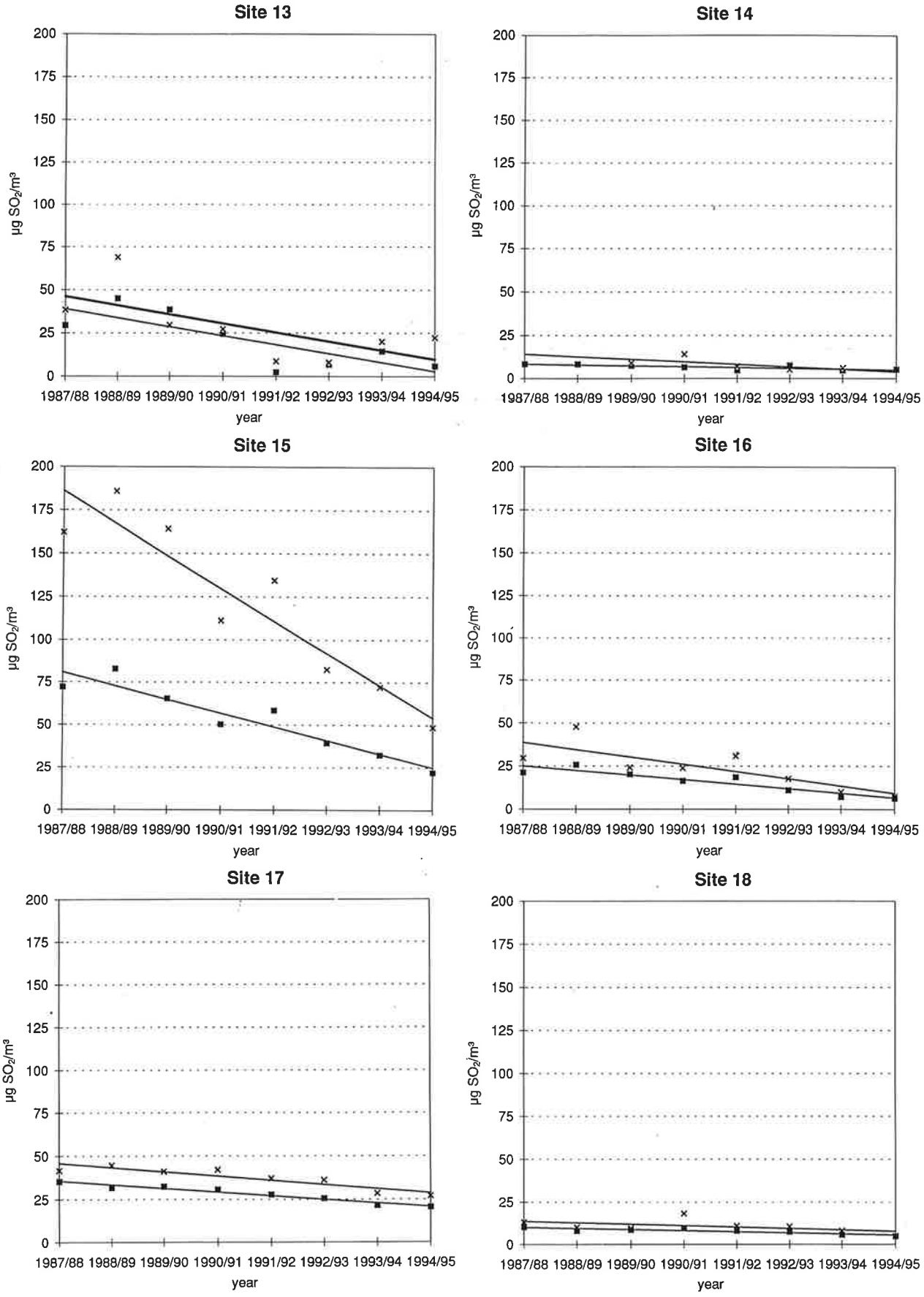

Figure C 1, cont.

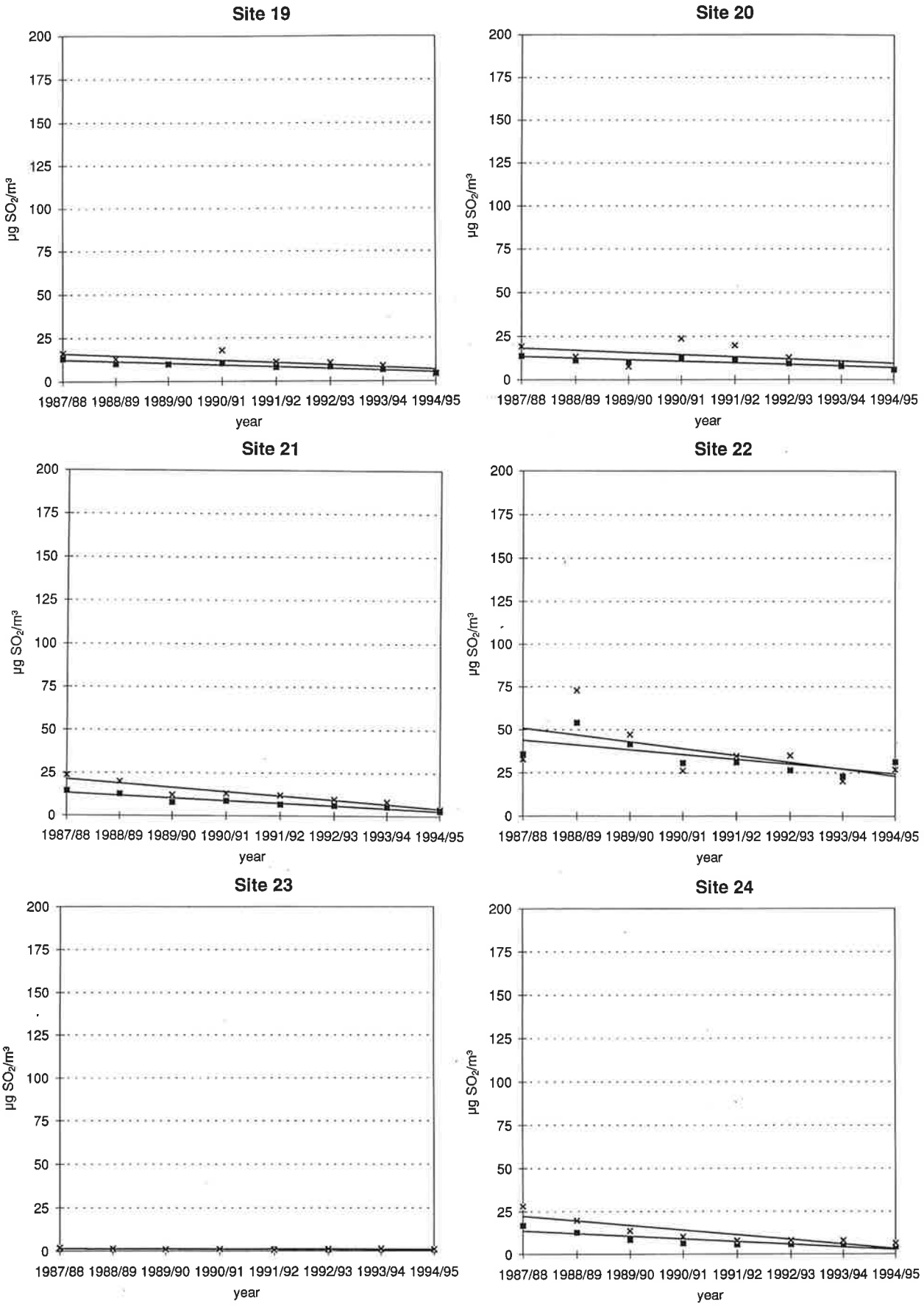

Figure C 1, cont.

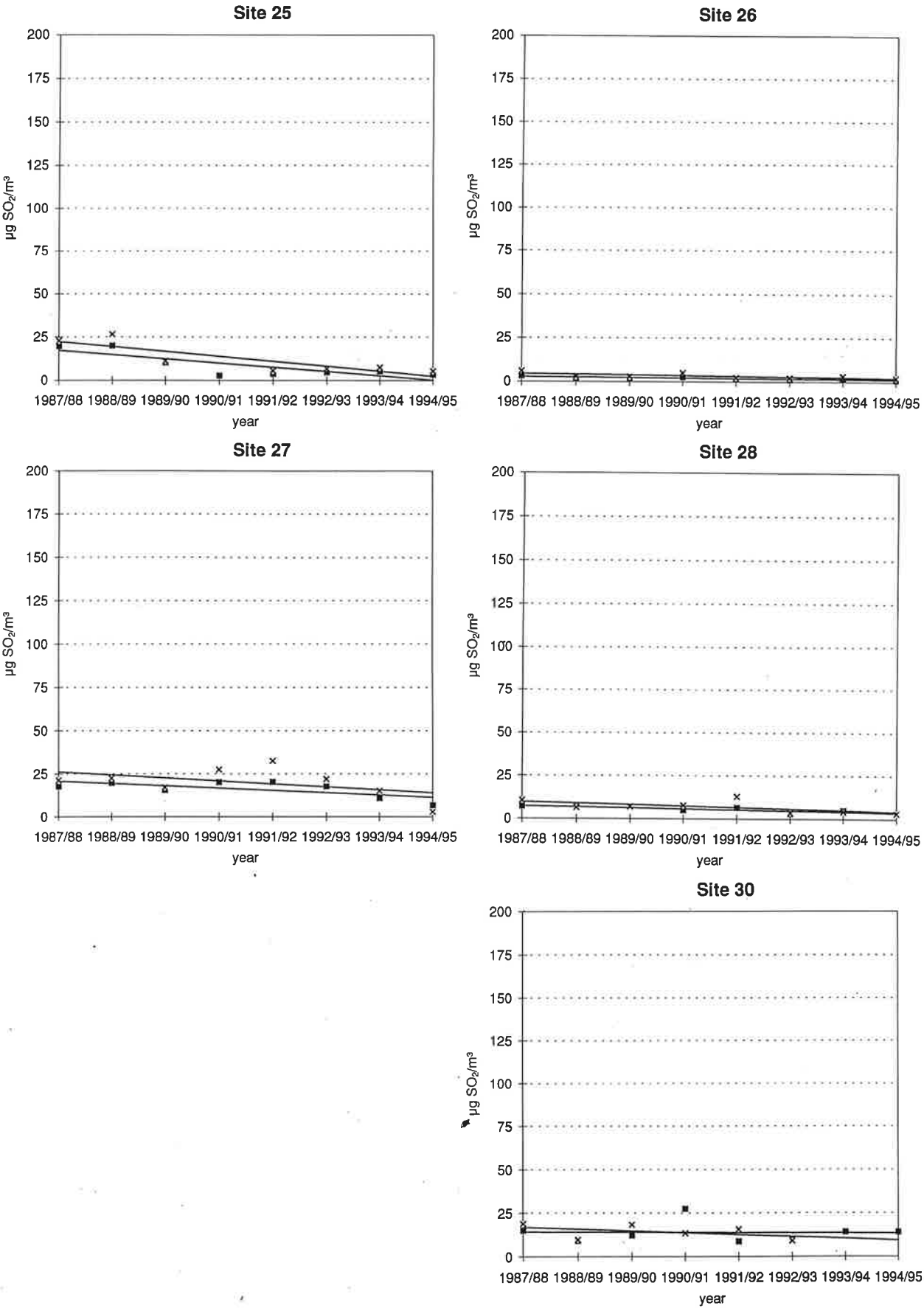

Figure C 1, cont.

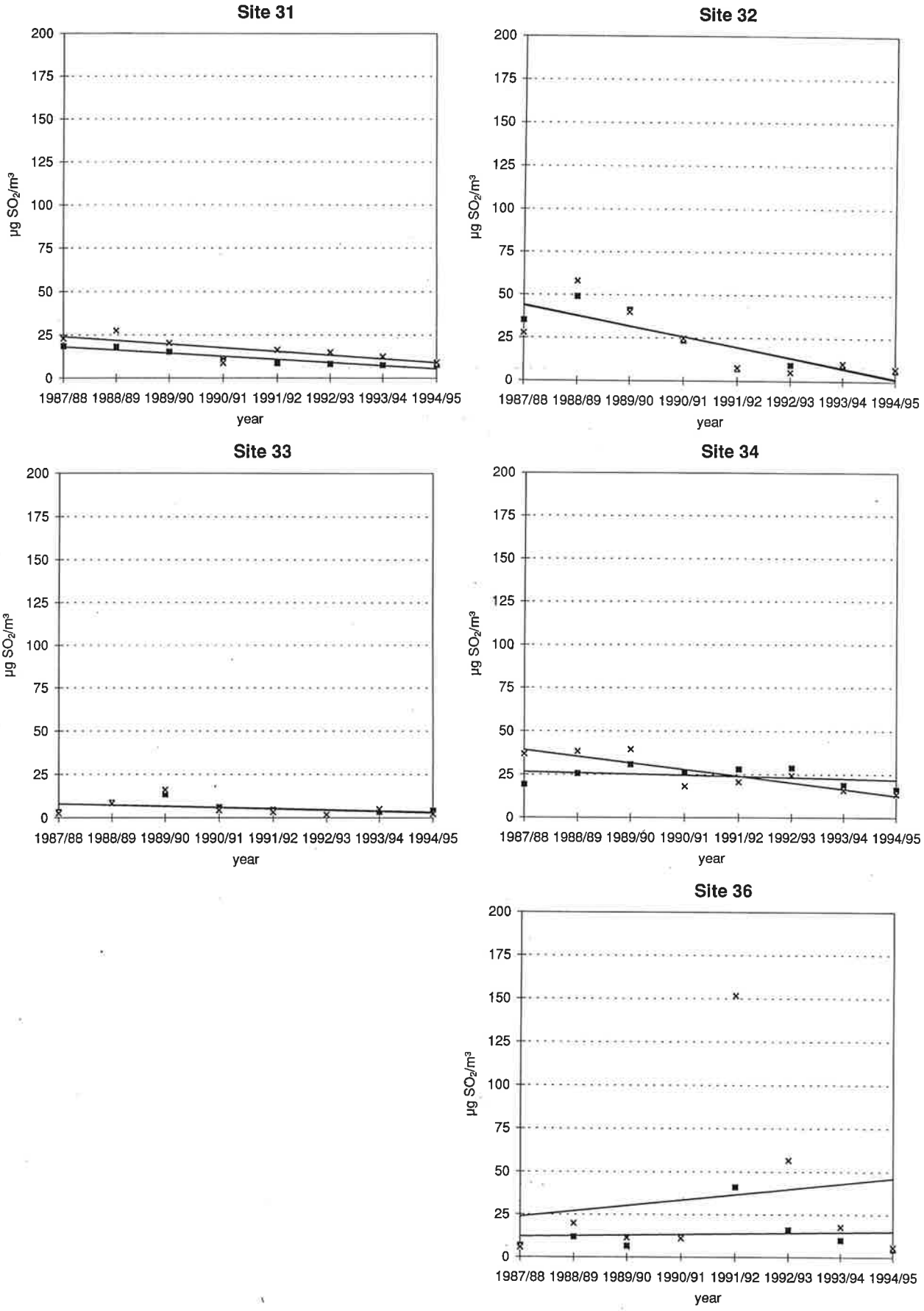

Figure C 1, cont.

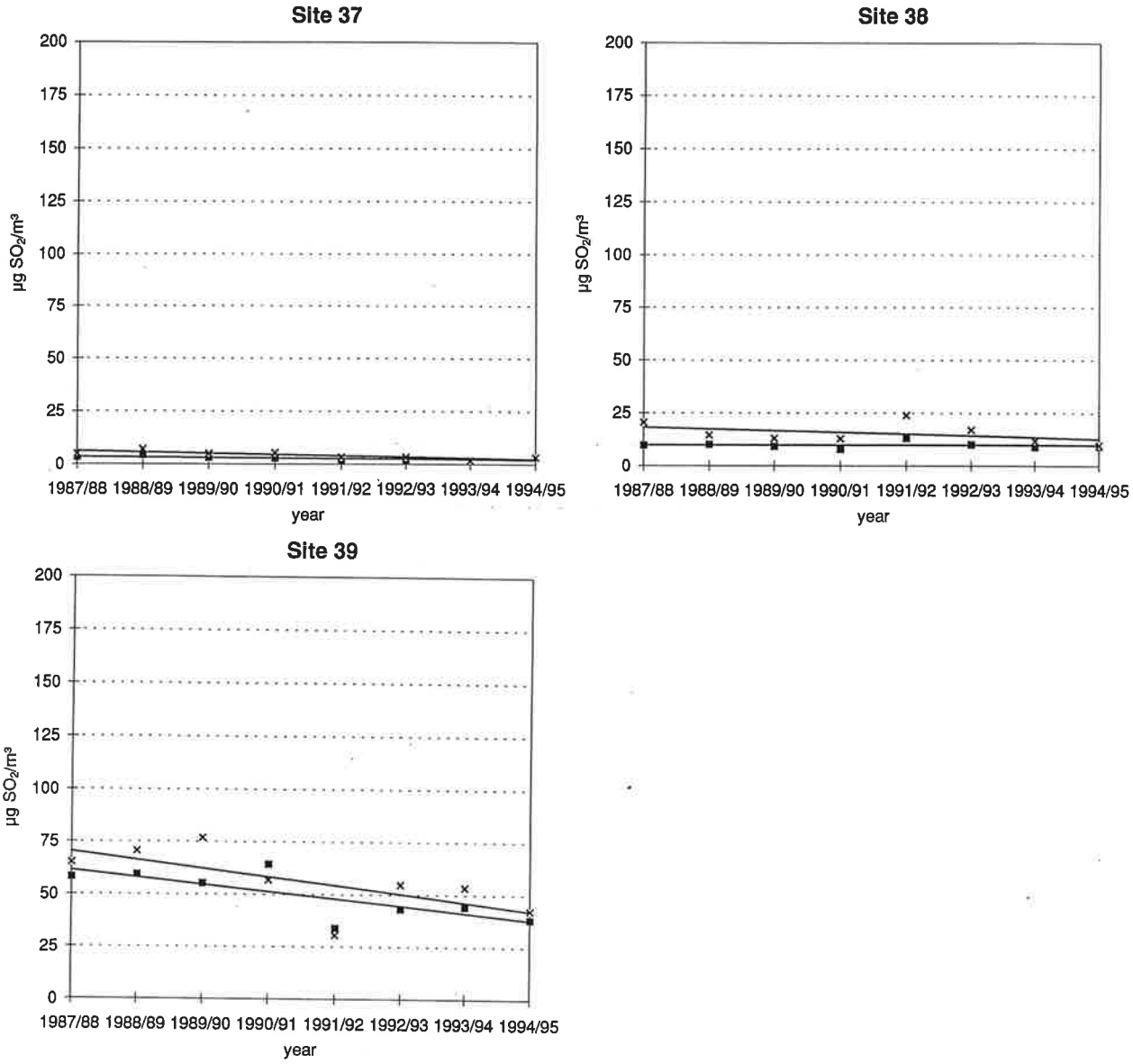

Figure C 1, cont.

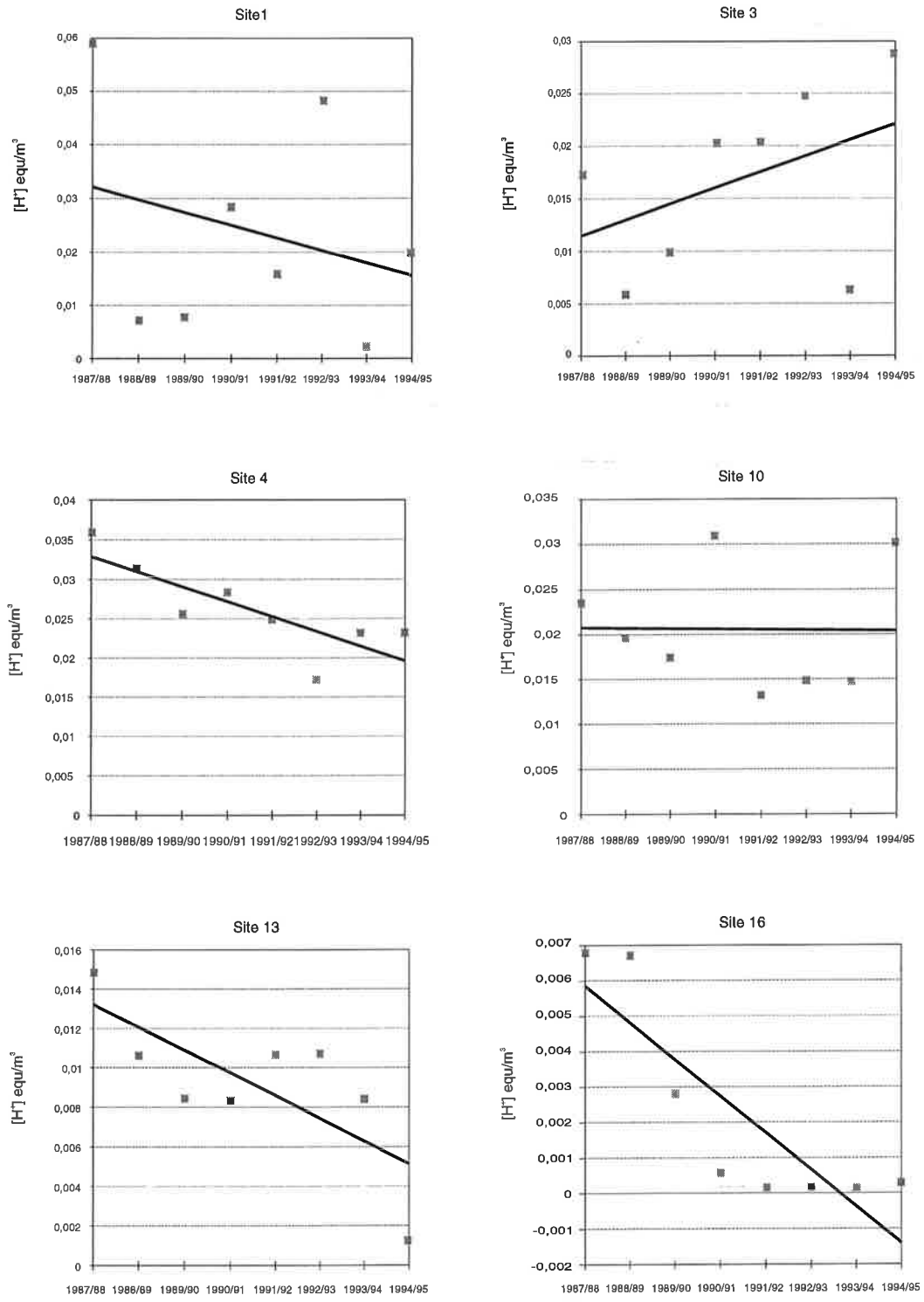

Figure C 2: Figures showing the trend for total acid load for selected sites during the period 1987-1994. The trendlines are given for the yearly values.

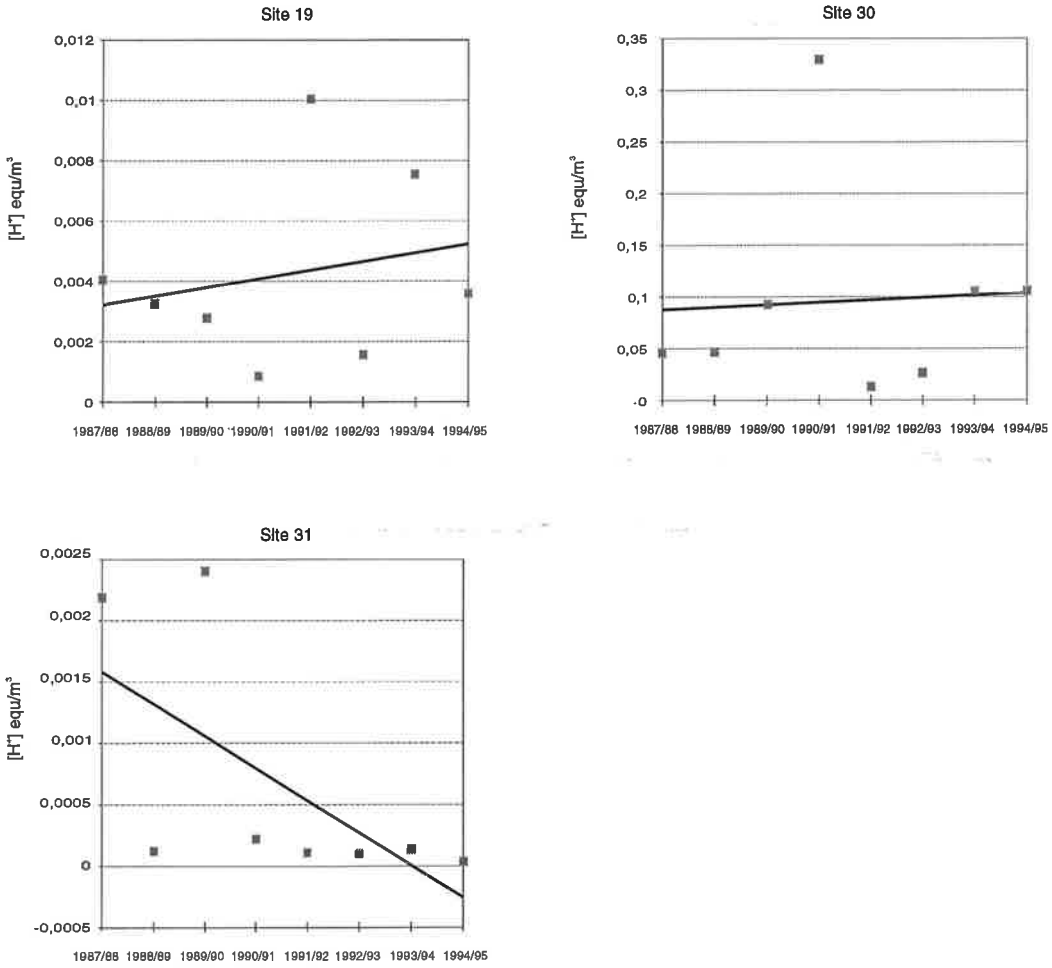

Figure C 2, cont.

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AUTHOR(S) Jan F. Henriksen, Arne Dahlback, Kari Arnesen, Unni Elvedal and Arild Rode	CLASSIFICATION * A CONTRACT REF. SFT

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ABSTRACT
This report presents the data base for eight years of environmental measurements obtained in the ECE-ICP on materials programme. Beside the data from the eight year it also presents the yearly mean values for the periods 1987-88, 1987-89, 1987-91 and 1987-95. These data correspond with the exposure periods for the materials and are used by the sub-centres for the dose-response analysis.
For the gases and acid pollutants a trend analysis of the changes in the concentration has been carried out. For SO_2 and the total acid load a decrease in the concentration is observed at almost all sites during the measuring period. The situation is more mixed for NO_2, but even for NO_2 there has been clear reduction in the NO_2 concentrations at several of the test sites.
For ozone no significant trend is observed.

NORWEGIAN TITLE

KEYWORDS		
Environment	Air pollution	Precipitation

ABSTRACT (in Norwegian)

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